

MODERN METHODS

for

MODERN
BUSINESS
NEEDS

A CENTURY OF PROGRESS EDITION



INTERNATIONAL BUSINESS
MACHINES CORPORATION

MODERN METHODS
for
MODERN BUSINESS NEEDS



**INTERNATIONAL BUSINESS
MACHINES CORPORATION**

Tabulating Machine Division
International Time Recording Division
International Ticketograph Division
Electromatic Typewriters Division
International Scale Division
Proof Machine Division

GENERAL OFFICES: 270 BROADWAY, NEW YORK, N. Y.
Canada: 300 Campbell Avenue, W. Toronto, Ontario

FOREWORD

NEW and improved methods of handling routines are constantly being introduced into office, factory and store. The concerns which keep in touch with and take advantage of these changes find themselves able to effect many new economies in their efforts to protect and increase profits.

The devices described in this booklet, which are representative types of International Business Machines, are playing an important part in this work by helping all kinds of businesses to save time and money in various departments. You no doubt are already familiar with many of them—perhaps are using some in your business. Others may have escaped your attention, and for that reason you have not considered the application of these particular ones to your own routines.

The purpose of this booklet is to bring all the various types of these machines to your desk in such form as will permit your careful and leisurely review of the many kinds of office, factory and store equipment with which the International Business Machines Corporation has been in many instances helping business for more than forty years.

Each machine is not so much a new *mechanism* as it is the source of a new *method* designed to save money and increase profits.

We suggest that you and your associates when reading this booklet keep in mind the fact that the International Business Machines Corporation is in position to render you a service that is unique in its ability to help you operate more profitably.

Our representatives will be pleased to describe to you in detail the application of any type of equipment in which you may be interested. The experience behind these men places them in a position to give real aid to business heads and executives of any kind of business.

QUICK FACTS

ABOUT INTERNATIONAL BUSINESS MACHINES

WHAT THEY ARE:

International Electric Accounting and Tabulating Machines (Hollerith)
International Time Recorders and Electric Time Systems
International Ticketographs and Certometers
Electromatic Typewriters
International Industrial Scales
Public Address Systems
Proof Machines for Banks

THEIR PURPOSE:

To save time, material, and money

WHERE MADE:

In the United States, Canada, Germany, France, and England

NUMBER OF MODELS:

More than 700

WHERE USED:

In 79 different countries

USED BY:

Business concerns of every size and kind, institutions, and governments

BACKED BY:

International Business Machines Corporation, pioneer manufacturer and distributor of Electric Tabulating Machines and Time Recorders. In business since 1888. Capital, over \$40,000,000.

NUMBER OF FACTORIES:

Nine: 4 are located in the United States, 1 in Canada, 2 in Germany, 1 in France, 1 in England. (See pages 42 and 43.)

NUMBER OF FIELD REPRESENTATIVES:

Approximately 3,000 throughout the world

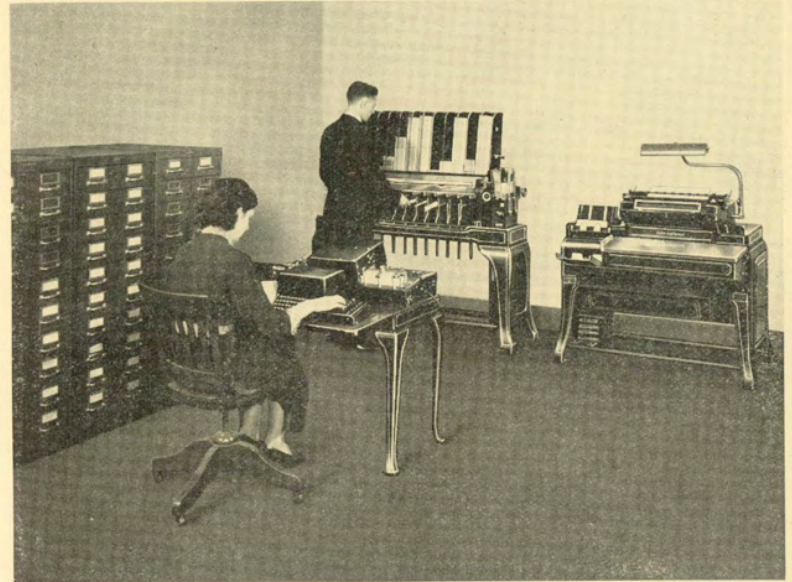
LOCATION OF OFFICES AND SERVICE STATIONS:

In all the principal cities of the world

THIS BOOKLET IS DIVIDED INTO THE FOLLOWING SIX SECTIONS:

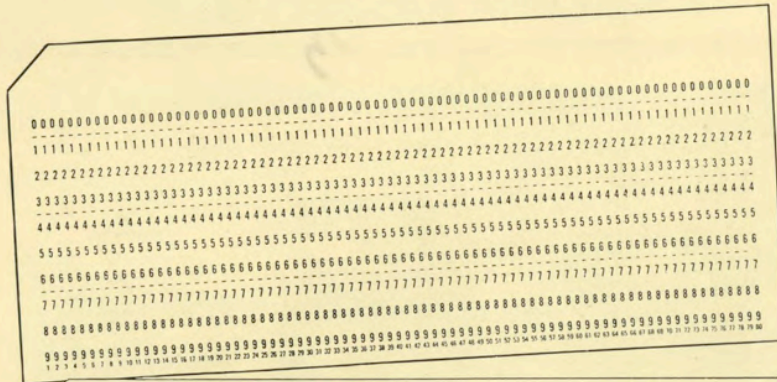
Electric Accounting and Tabulating Machines . . .	pages	7 to 34
Proof Machines for Banks	"	35 to 36
Time Recorders and Electric Time Systems . . .	"	37 to 60
Ticketographs	"	61 to 64
Electromatic Typewriters	"	65 to 68
Industrial Scales	"	69 to 84

INTERNATIONAL ELECTRIC ACCOUNTING AND TABULATING MACHINES (Hollerith)



INTERNATIONAL Electric Accounting and Tabulating Machines are devices employed for the automatic handling of accounting and statistical data. The process of operation, known as the Electric Accounting Method, comprises the use of tabulating cards—which constitute the basis of the method and on which all information is recorded in the form of punched holes—together with this electrical equipment which handles the cards in progressive stages till final results have been achieved.

The value of International Electric Accounting and Tabulating Machines lies in their phenomenal speed, their flexibility in handling accounting and statistical data, their accuracy, and their ability to accomplish results at much less cost than that entailed when identical work is manually performed.



CUSTOMER		ORDER NO.		INVOICE NO.		NAME		ACCOUNTS RECEIVABLE ANALYSIS									
NO.	NAME	DATE	DATE	DATE	DATE	AMOUNT	COMP	CASH	CASH	DISCOUNT	NOTES AND TRADE ACC.	GOOD RETURNS	SALES ALLOWANCES	ACCOUNT NUMBERS	AMOUNT	OTHER ALLOWANCES	
00000	00000	00000	00000	00000	00000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	
11111	11111	11111	11111	11111	11111	11111111	11111111	11111111	11111111	11111111	11111111	11111111	11111111	11111111	11111111	11111111	
22222	22222	22222	22222	22222	22222	22222222	22222222	22222222	22222222	22222222	22222222	22222222	22222222	22222222	22222222	22222222	
33333	33333	33333	33333	33333	33333	33333333	33333333	33333333	33333333	33333333	33333333	33333333	33333333	33333333	33333333	33333333	
44444	44444	44444	44444	44444	44444	44444444	44444444	44444444	44444444	44444444	44444444	44444444	44444444	44444444	44444444	44444444	
55555	55555	55555	55555	55555	55555	55555555	55555555	55555555	55555555	55555555	55555555	55555555	55555555	55555555	55555555	55555555	
66666	66666	66666	66666	66666	66666	66666666	66666666	66666666	66666666	66666666	66666666	66666666	66666666	66666666	66666666	66666666	
77777	77777	77777	77777	77777	77777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	77777777	
88888	88888	88888	88888	88888	88888	88888888	88888888	88888888	88888888	88888888	88888888	88888888	88888888	88888888	88888888	88888888	
99999	99999	99999	99999	99999	99999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	99999999	

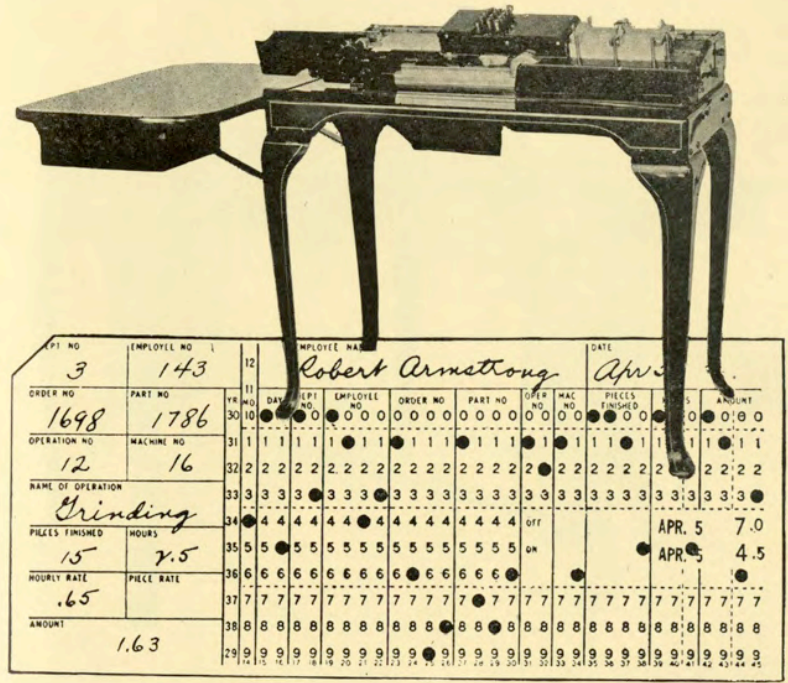
TABULATING CARDS

THE basic unit of the Electric Accounting Method is the Tabulating Card which is designed to contain all data pertinent to a given subject. Holes punched in a card at various points represent the information which is to be handled.

The cards are available in various capacities. The columns of digits on the cards are divided into groups, or "fields" and each field is headed with a descriptive caption, such as "Salesman" and "Quantity" on a sales card.

Tabulating cards are made in various colors, with or without stubs, and in dual form—that is, to contain data in both the original written and the punched hole state.

Regardless of how they are combined later no future posting is necessary, and chance for human error is remote.



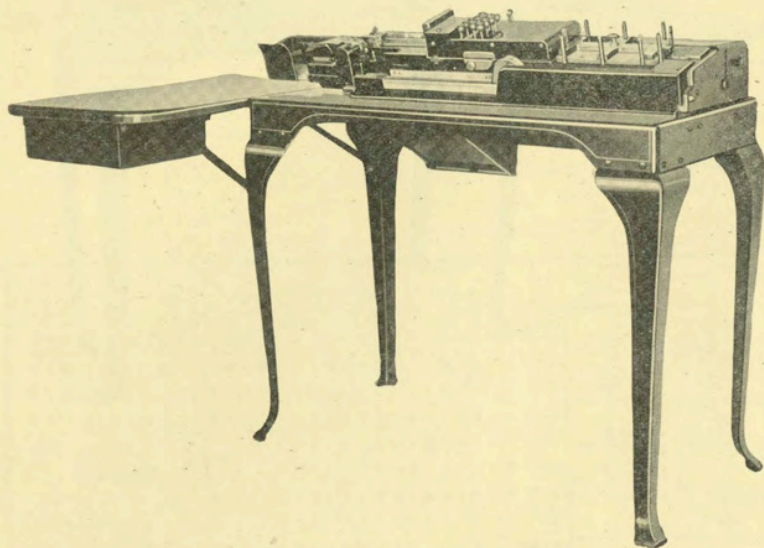
EMP. NO.	EMPLOYEE NO.	EMPLOYEE NAME	DATE							
3	143	Robert Armstrong	Apr							
ORDER NO.	PART NO.	FR. NO.	DAY	EMP. NO.	ORDER NO.	PART NO.	FR. NO.	MAC. NO.	PIECES FINISHED	AMOUNT
1698	1786	10	0	000	0000	0000	0000	0000	0000	0000
OPERATION NO.	MACHINE NO.	31	1	1	1	1	1	1	1	1
12	16	32	2	2	2	2	2	2	2	2
NAME OF OPERATION		33	3	3	3	3	3	3	3	3
Grinding		34	4	4	4	4	4	4	4	4
PIECES FINISHED	HOURS	35	5	5	5	5	5	5	5	5
15	7.5	36 <td>6 <td>6 <td>6 <td>6 <td>6 <td>6 <td>6 <td>6 </td></td></td></td></td></td></td></td>	6 <td>6 <td>6 <td>6 <td>6 <td>6 <td>6 <td>6 </td></td></td></td></td></td></td>	6 <td>6 <td>6 <td>6 <td>6 <td>6 <td>6 </td></td></td></td></td></td>	6 <td>6 <td>6 <td>6 <td>6 <td>6 </td></td></td></td></td>	6 <td>6 <td>6 <td>6 <td>6 </td></td></td></td>	6 <td>6 <td>6 <td>6 </td></td></td>	6 <td>6 <td>6 </td></td>	6 <td>6 </td>	6
HOURLY RATE	PIECE RATE	37	7	7	7	7	7	7	7	7
.65		38 <td>8 <td>8 <td>8 <td>8 <td>8 <td>8 <td>8 <td>8 </td></td></td></td></td></td></td></td>	8 <td>8 <td>8 <td>8 <td>8 <td>8 <td>8 <td>8 </td></td></td></td></td></td></td>	8 <td>8 <td>8 <td>8 <td>8 <td>8 <td>8 </td></td></td></td></td></td>	8 <td>8 <td>8 <td>8 <td>8 <td>8 </td></td></td></td></td>	8 <td>8 <td>8 <td>8 <td>8 </td></td></td></td>	8 <td>8 <td>8 <td>8 </td></td></td>	8 <td>8 <td>8 </td></td>	8 <td>8 </td>	8
AMOUNT		29	9	9	9	9	9	9	9	9
1.63		30	0	0	0	0	0	0	0	0

KEY PUNCH

ORIGINAL information shown on original documents (or on dual cards) is punched in the cards by a Key Punch, the keys of which are operated like those of a typewriter. Each key governs the punching of a horizontal line of digits on the card; that is, the "0" key punches in the "0" position, the "1" key in the "1" position, etc. The machine has only twelve punching keys.

Punching production varies with the number of columns punched, the nature of the original information, and the ability of the operator.

Different models are available: one which is operated entirely by hand; another whose cutting dies are electrically actuated; a third, illustrated above, is further equipped with automatic card feeding and ejecting devices.

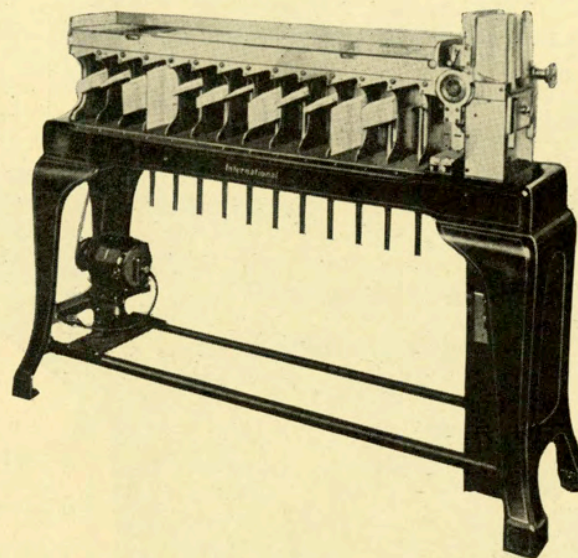


VERIFIER

THE Verifier is used to prove mechanically the accuracy of the punching.

Operation of this device is like that of the Key Punch. The operator proceeds as though punching the card, using the original data as the source of information. When the key action coincides with the previously punched holes the machine feeds the cards to the left. When a key can not be depressed the passage of the card is stopped, signifying an error has been made. The unverified portion of the card is invisible to the operator; no suggestion as to what was punched can affect the verification, which therefore is positive instead of negative.

Where a limited number of cards is to be verified the Mechanical Verifier, a compact device requiring no electric current, may be used. Above is shown the Motor Drive model.



ELECTRIC CARD-OPERATED SORTING MACHINE

THE cards are now ready for an Electric Card-Operated Sorting Machine which arranges them in numerical sequence, sorts them in desired classifications, and selects and rejects specific ones.

The usual procedure is to arrange the cards first in the "unit" order. While in this sequence they are next arranged in the "tens" order, then in the "hundreds," etc.

Several models are available,—the horizontal, illustrated above; the vertical, which is employed when floor space must be conserved; and the small capacity Type 83.

The speed of the horizontal sorter is 400 cards per minute per column sorted. If, for instance, 1000 cards are arranged in 99 classifications the total time consumed would be much less than five minutes. The speed of the vertical model is 270 cards and that of the Type 83 is 150 cards per minute per column sorted.

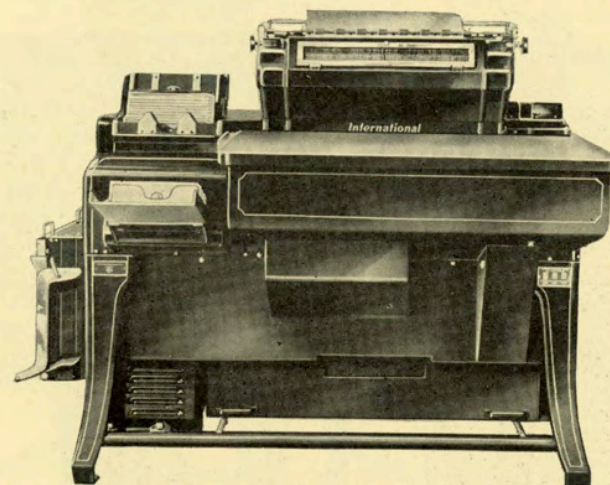
BRANCH MONTHLY EXPENSE STATEMENT										
BRANCH Philadelphia				MONTH OF May						
	Account Number	UNIT	CURRENT MONTH				YEAR TO DATE			
			Budget	Expense	% of Net Sales	Variance	Budget	Expense	% of Net Sales	Variance
DIRECT EXPENSE										
Advertising	301	4	563	414		149-	6756	13505		6829
Commissions	303	4	30	796		766	360	1118		758
Management Salaries	305	4	450	450			5400	5400		
Management Traveling	307	4	250	331		81	3000	4156		1136
Salesmen's Salaries	309	4	1800	1561		239-	21600	23853		2253
	311	4								
	312	4	3093	3552		459	3711			

DIRECT SUBTRACTION ACCOUNTING MACHINE
(Type 3-S)

THE Direct Subtraction Accounting Machine, Type 3, is a multiple subtracting, adding, classifying, and printing machine which automatically produces complete, printed reports from punched tabulating cards. It prints classifications, lists details, computes and prints totals, grand totals and net balances.

An automatic control causes the machine to stop at the completion of each data group; the total and the group indication are recorded, then the machine clears itself and starts on the next group. An Automatic Plugboard (see page 32) eliminates the necessity of plugging the machine just before printing the reports.

This type of accounting machine is furnished in three models of various printing capacities—4, 5 and 7 printing banks,—all of which list from 75 to 120 cards a minute and tabulate from 75 to 150 cards a minute.



THIS IS A SAMPLE OF THE PRINTING DONE BY THE ALPHABETIC ACCOUNTING MACHINE

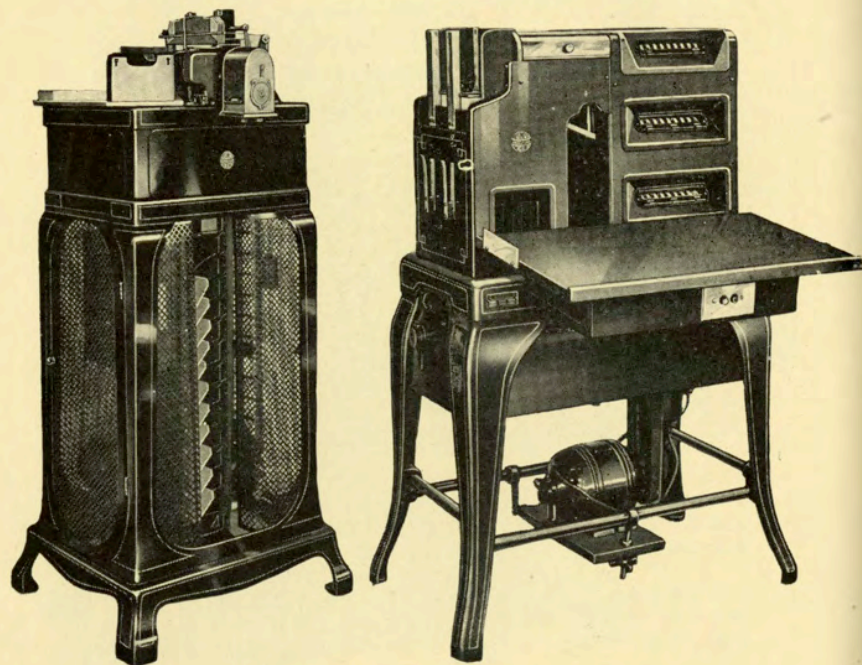
NUMERALS CAN BE PRINTED ALONG WITH THE ALPHABETIC CHARACTERS AS IN THE ADDRESS 276 BROADWAY

ALPHABETIC DIRECT SUBTRACTION
ACCOUNTING MACHINE

THIS accounting machine is employed when it is desired to show names, addresses, descriptions, etc. printed in full on finished reports, thereby eliminating the use of codes. The alphabetic feature supplements the ability of the machine to subtract, add and print numerals; net balances therefore, as well as totals and grand totals, are provided.

Two continuous type sections have eighty-eight printing positions. The alphabetic type section can be used to list or indicate both alphabetic and numerical data and to compute and print balances and totals, an arrangement which gives great flexibility in combining alphabetic and numerical information.

When the direct subtraction feature is not required another model is available—one which produces the same results as enumerated above except net balances.

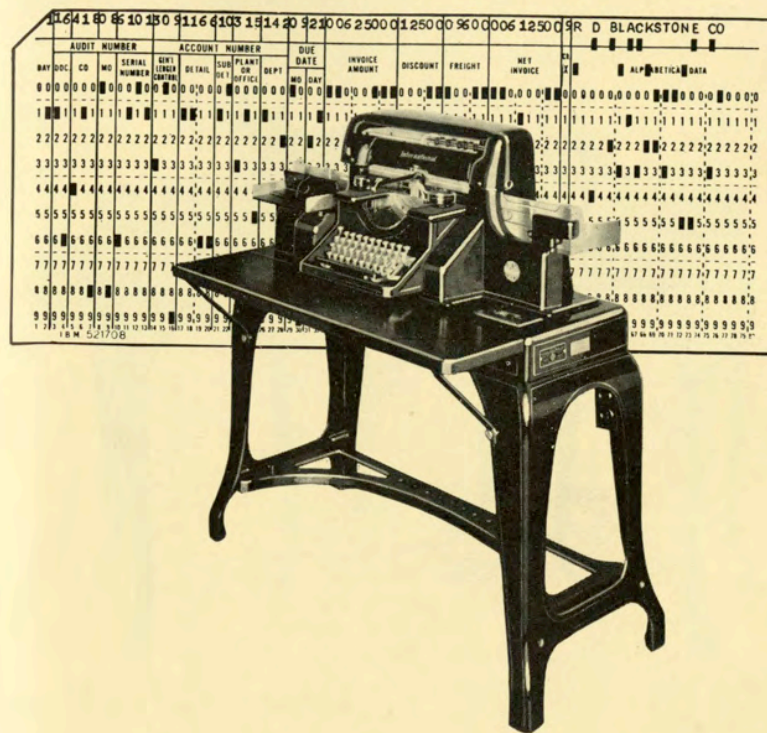


TYPE 83 EQUIPMENT

THESE devices bring the advantages of the Electric Accounting Method within the reach of the smaller organizations. The Type 83 Electric Card-Operated Sorter is equipped with 12 pockets which hold 80 cards each. Its speed is 150 cards per minute.

The Type 83 Electric Tabulator is a non-printing tabulating machine which adds from 1 to 3 groups of figures at the rate of 90 cards per minute. "Stop cards" are employed for stopping the machine at the end of groups to enable the operator to record the totals.

The manually operated Key Punch and 45-column cards are used with this equipment.

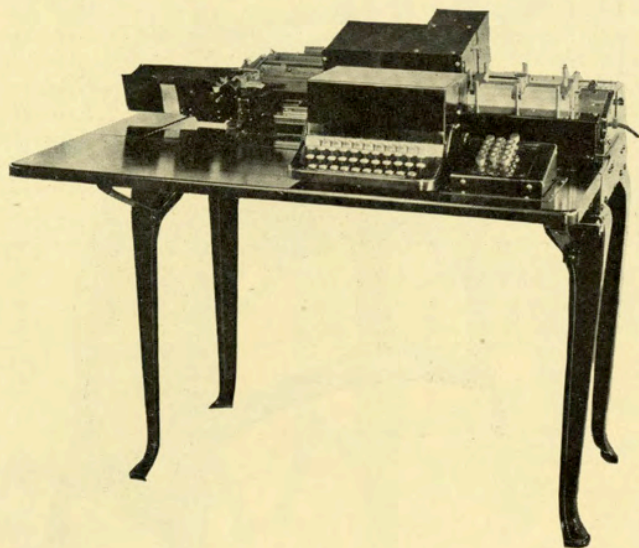


ALPHABETIC PRINTING PUNCH

THE Alphabetic Printing Punch is used to punch both alphabetic and numerical data into a tabulating card so that completely spelled names, descriptive words, etc. together with numbers can subsequently be printed by an Alphabetic Accounting Machine.

This punch is equipped with a typewriter keyboard. The depression of a key causes the machine to punch the card and simultaneously print the corresponding letter or figure at the top of the card above the column punched. Checking, filing and reference operations are thereby greatly facilitated.

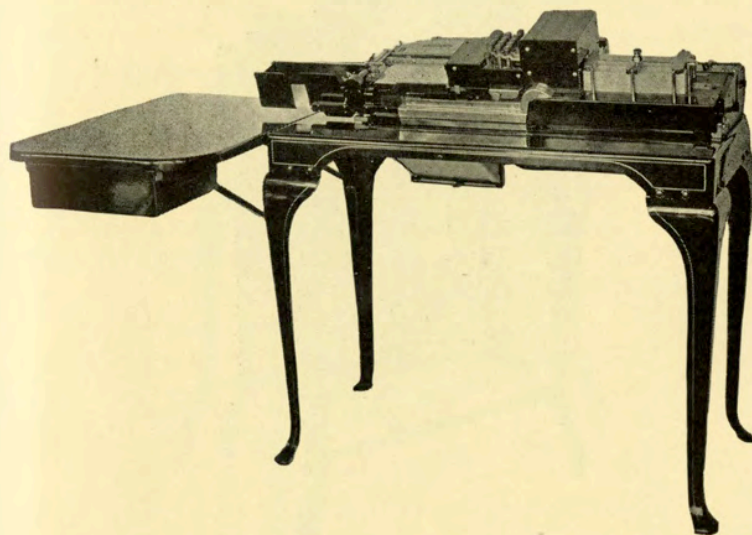
The familiar typewriter tabular inserts control the skipping of the card to the proper columns to be punched. The cards are automatically fed and ejected.



ALPHABETIC DUPLICATING PUNCH

THE Alphabetic Duplicating Punch prepares tabulating cards for subsequent handling by an Alphabetic Accounting Machine. Its punching mechanism is controlled by two keyboards; one contains both alphabetic and numerical keys arranged like those of a typewriter, the other is the same as that of a numerical Key Punch. The two keyboards are provided for convenience of operation and maximum production, the operator using whichever one enables her to produce best results when punching numbers.

By means of this device, information common to more than one card can be automatically recorded, and information pertaining to an individual card or any portion of it can be automatically punched in other cards. This duplicating feature makes the machine extremely useful as an automatic coding device since it eliminates individual coding and renders unnecessary a verification of these codes.

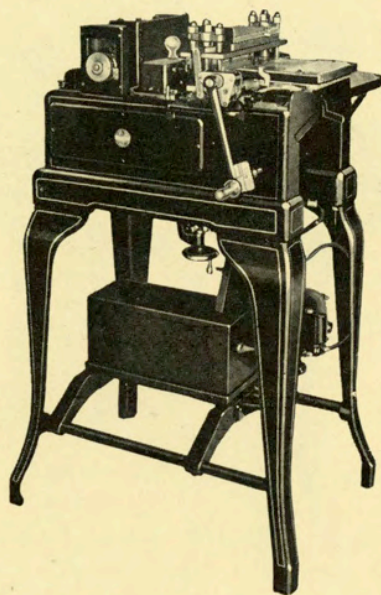


DUPLICATING KEY PUNCH

A DUPLICATING KEY PUNCH performs the same work done by a Key Punch and in addition automatically duplicates data common to a number of cards. Data which vary with every card can be recorded by using the keys.

The duplicating feature enables the machine to be used as an automatic coding device. Codes are pre-punched in master cards; the proper master card is positioned in the machine and during operation the code is automatically punched in detail cards. This process eliminates a second coding operation, code checking, individual code punching, and checking of the code punching.

Two models are available: illustrated above is the Motor Drive model which is equipped with automatic card feeding and ejecting devices; the other is portable, operates electrically and is equipped with a feeding device.



GANG PUNCH

SOMETIMES it is necessary that many cards be punched in identically the same manner, either wholly or in part. A Gang Punch is then used to expedite the work.

Above is shown the Motor Drive Gang Punch. A master card—sometimes called a pattern card—when placed on the set-up plate of this device automatically adjusts the punching mechanism to the setting required. Or the set-up can be accomplished manually. Another method is to use both processes in combination.

The Motor Drive Gang Punch can be equipped with a numbering device which prints numbers consecutively or prints the same number repeatedly on the faces of the cards at the time of punching. An additional feature is a dial which, when set, automatically stops the machine when the desired number of cards has been punched.

A manually operated lever set Gang Punch is also made.



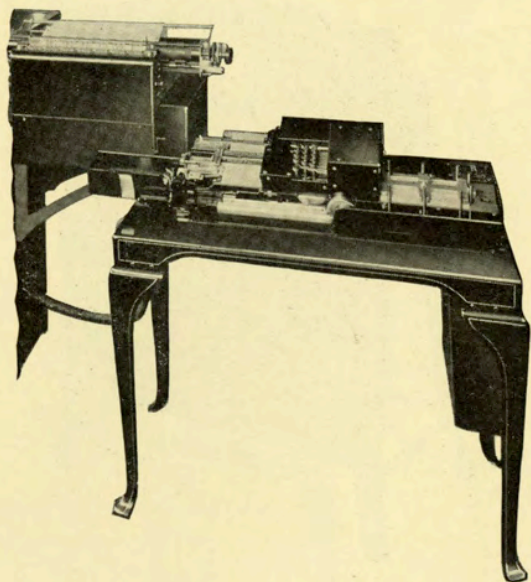
AUTOMATIC REPRODUCING PUNCH

THIS machine is used to reproduce in a set of cards the information punched in another set. All or any portion of either numerical or alphabetic data punched in a card may be reproduced in another card in any sequence desired.

It is also possible to gang punch in any number of detail cards the information punched in a master card. Both reproducing and gang punching may be done simultaneously; that is, while information is being reproduced additional data may be gang punched in the same cards.

Speed, 100 cards a minute for all work regardless of the number of holes to be punched.

Another model is equipped to compare the holes punched in the second card with the ones in the original. Both are equipped with an automatic plugboard (see page 32).

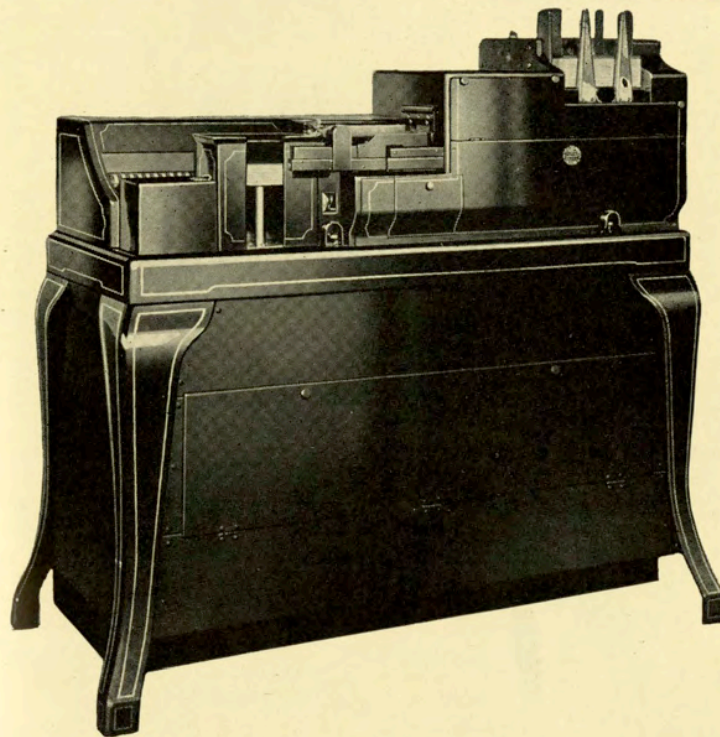


AUTOMATIC SUMMARY PUNCH

THE Automatic Summary Punch is used to punch summary or new balance cards during the tabulating process of the accounting machine to which it is attached. The accounting machine stops at every control change; the information appearing in its counters is then electrically transmitted to the Summary Punch and by it recorded on tabulating cards.

In addition to recording classifications and totals received by electrical impulse from the accounting machine, the Summary Punch can also record common data received by electrical impulse from a pre-punched card in the master card rack. It can be converted into a Motor Drive Duplicating Key Punch simply by throwing a switch.

The Automatic Summary Punch provides an exceptionally fast method of obtaining a balance-forward.

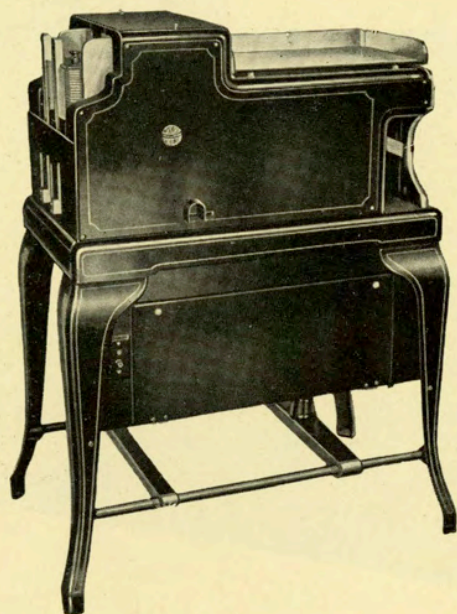


AUTOMATIC MULTIPLYING PUNCH

THIS machine multiplies with almost lightning speed any two amounts punched in tabulating cards, adjusts the product to the nearest whole number, records the product on the card from which the factors were taken, and accumulates totals. It can also be made to cross-add and cross-subtract while multiplying, under which condition it punches the total of the cross-addition or the net total.

The factors may be such items as Hours times Hourly Rate, Pieces times Piece Work Price, etc. Either factor can contain as many as eight digits. One factor can be taken from a preceding master, or pricing, card and used as a common multiplier for succeeding detail cards.

Calculating and punching are accomplished at high speed—from 740 multiplications per hour for 8-digit multipliers up to 1500 per hour for 3-digit multipliers.

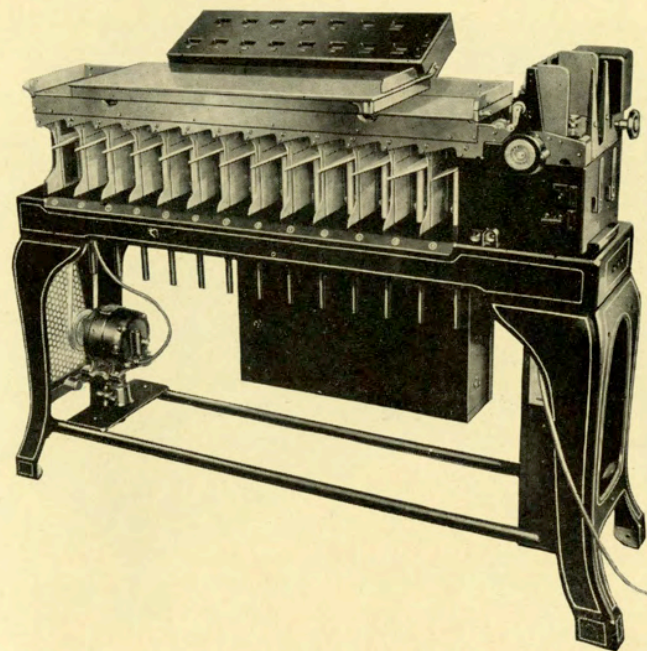


AUTOMATIC INTERPRETER

ALTHOUGH the practiced eye can quickly read the numerals represented by the holes punched in tabulating cards, it is often desirable, for greater ease of reading in checking, filing, selection and reference operations, to have these coded figures translated and printed on the cards. The Automatic Interpreter is used for the purpose in numerical work.

The printed information can be shown anywhere along the top of the card. Data punched in any 45 columns of the card may be interpreted. The translating and printing are done at the rate of 4,500 cards per hour.

Another model which is a combination check writer, check protector, and interpreter is also provided in the above capacities and speeds.

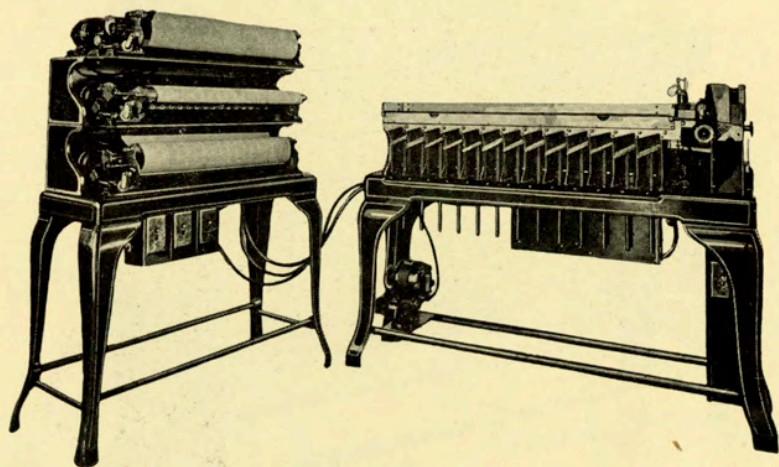


ELECTRIC CARD-OPERATED COUNTING SORTER

IN cases where a tabulating card represents a unit, as in vital statistics and unit inventory control, it becomes necessary to provide a rapid means of counting and classifying simultaneously. This machine accomplishes such result; it also operates as a regular sorter without counting, or as a counting device without sorting. Speed, 400 cards a minute when counting or sorting or doing both.

The counting mechanism is equipped with fifteen adding counters, one for each of the twelve conditions that can be recorded in a column, one for unpunched cards, one for sub-totals, and one for grand totals.

The visible dials are located on top behind a reading board. This arrangement permits the figures in the counters to be easily read and transcribed by the operator.

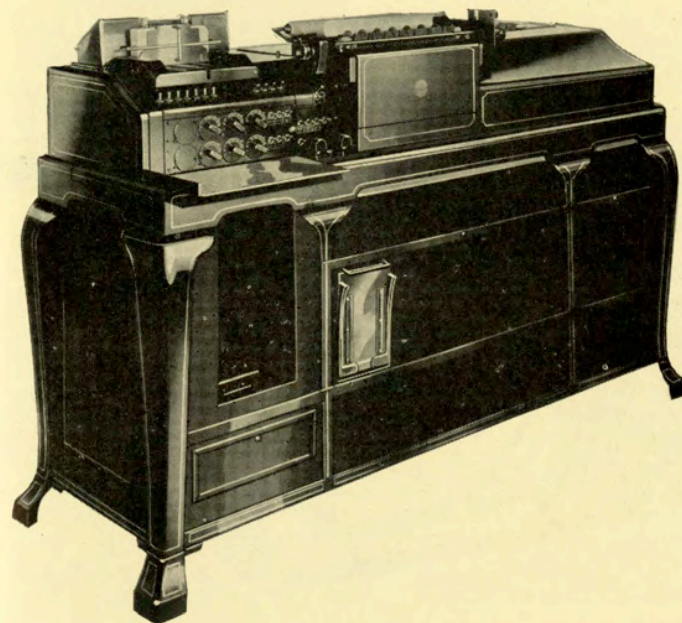


ELECTRIC CARD-OPERATED COUNTING AND PRINTING SORTER

THE Electric Card-Operated Counting and Printing Sorter is another device which provides a rapid means of simultaneously counting and classifying units represented by tabulating cards.

This machine totals the count for each position punched in any particular column of digits on the cards and prints these totals. It sorts and totals the count in the same column or sorts in one column and simultaneously totals the count in one, two or three additional columns. It arranges punched cards in numerical sequence or according to any desired classification. Speed, 400 cards a minute.

The sorter can be equipped with one, two or three counting and printing units, each having fifteen counters. The item counters have a 5-digit capacity, the total counters have a 6-digit capacity.

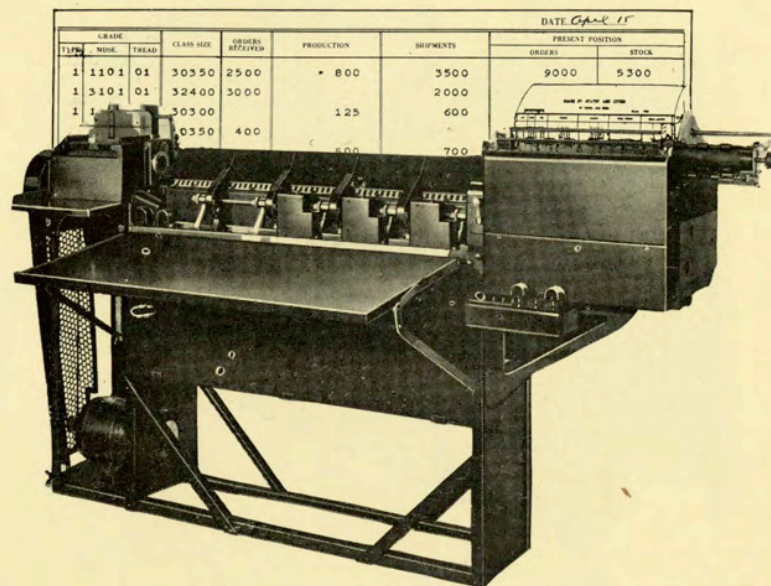


DIRECT SUBTRACTION ACCOUNTING MACHINE (Type 4-S)

THIS device is a combined multiple adding, subtracting and printing machine by means of which punched tabulating cards are made to yield printed tabulations. It is used to list details from individual cards, to print classifications, and to compute and print totals, grand totals and net balances.

Group totals of from 1 to 6 classes of data are secured at the rate of 150 cards a minute. When an itemized list is being printed the operating speed is 100 cards a minute.

An automatic control causes the machine to stop at the end of a group of cards, print the totals, and then tabulate the succeeding group without assistance from the operator. An automatic plugboard (see page 32) gives further value to this machine as an accounting instrument.



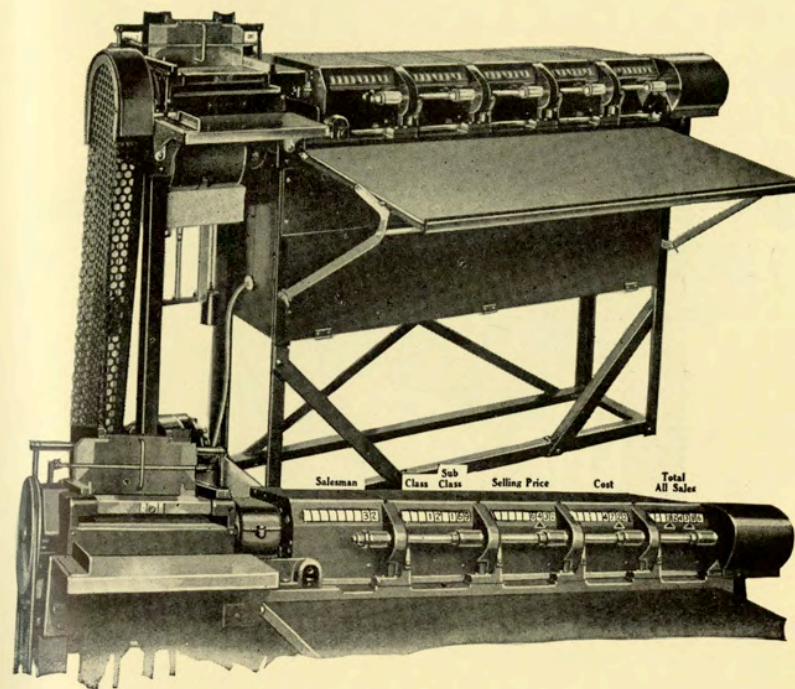
ELECTRIC ACCOUNTING MACHINE

THE Electric Accounting Machine automatically produces completely printed reports from punched tabulating cards.

Two types are available. The one illustrated above lists the details of every card at a speed of 75 cards a minute; it accumulates and prints totals at the rate of 150 cards a minute.

As the cards pass through the feeding mechanism every change from one data group to another is recognized. At the completion of each group the machine automatically stops, records the total together with the group indication, then clears itself and starts working on the next group. Progressive totals and accumulative totals can be taken.

This type is available in 4-, 5- and 7-printing-bank models. The other type, the 4-E, is a 7-bank, 6-counter machine with a larger counter capacity and a higher listing speed.

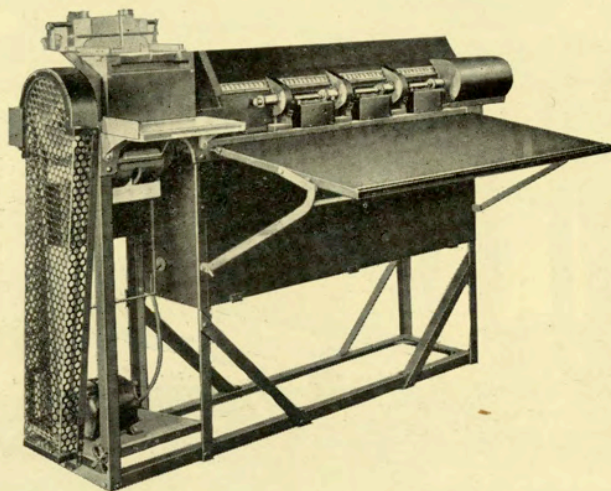


ELECTRIC TABULATING MACHINE

THE Electric Tabulating Machine is a multiple adding device by means of which totals are automatically secured from punched tabulating cards. It determines both sub- and grand totals, and indicates proper classifications. These accumulations and classifications are shown on reading dials and transcribed by the operator to report forms.

This machine is made in 3- and 5-counter models. The latter, illustrated above, simultaneously adds from two to five groups of 8-digit figures at the rate of 150 cards a minute.

A similar machine is the Automatic Control Tabulator whose adding mechanism automatically stops at the end of each class of information to permit the operator to transcribe the totals. The same effect is produced in Electric Tabulating Machines through the use of "stop cards."

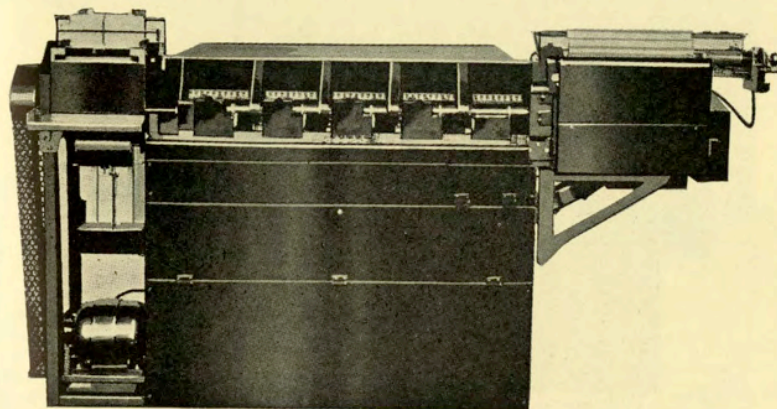


AUTOMATIC CHECKING MACHINE

THIS variation of the Electric Tabulating Machine cross-totals any two amounts recorded on a tabulating card and compares the result with a third amount recorded on the same card. For example: In billing for gas, electricity, or water, it adds the consumption to the previous reading and checks the result with the present reading. When a discrepancy is found the incorrect card is automatically separated from the correct cards. Its operating speed is 150 cards per minute.

One of its four counters can be used for counting cards when each card represents a unit, or for accumulating totals; the other three carry the amounts to be compared.

When not being used for checking purposes the machine can be employed as a 4-counter Electric Tabulating Machine.



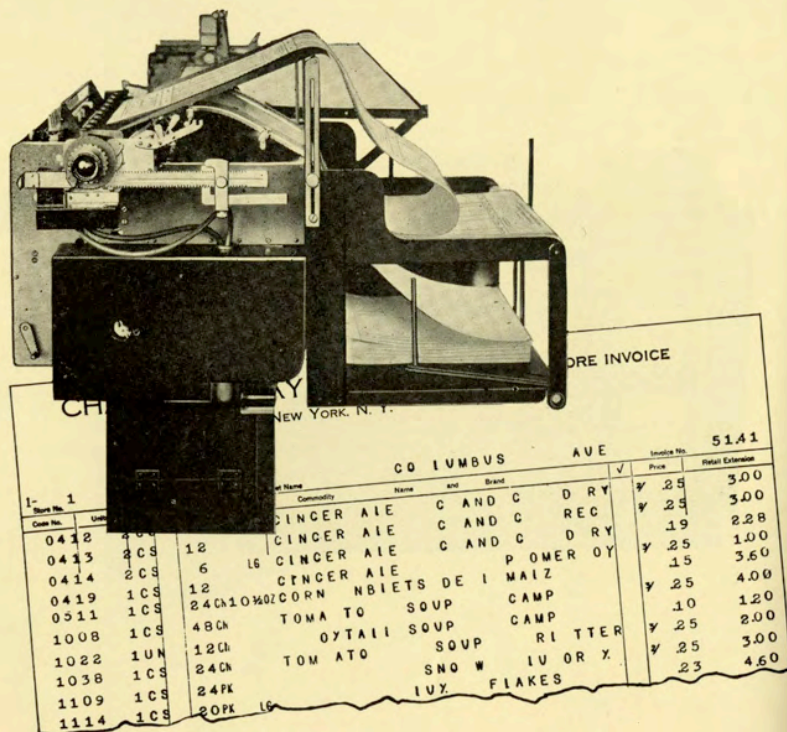
INVOICING TABULATOR

THE Invoicing Tabulator is applicable to billing in those cases where a pre-punched card system for control of inventory and centralized billing is possible. It prints alphabetic commodity descriptions in legible, condensed form.

Some of its features are: high-speed listing at the rate of 120 cards per minute; single line billing regardless of the number of cards selected per line; and a 34-column type section for printing descriptions.

The standard invoice form sponsored by the Division of Simplified Practice, Washington, D. C., can be used. A stub copy showing the commodity code instead of the article name, but including the cost, can be printed simultaneously with the invoice without the use of carbon.

Automatic dating, registration, line-finding and continuous form feeding are performed. *See next page for sample of work.*

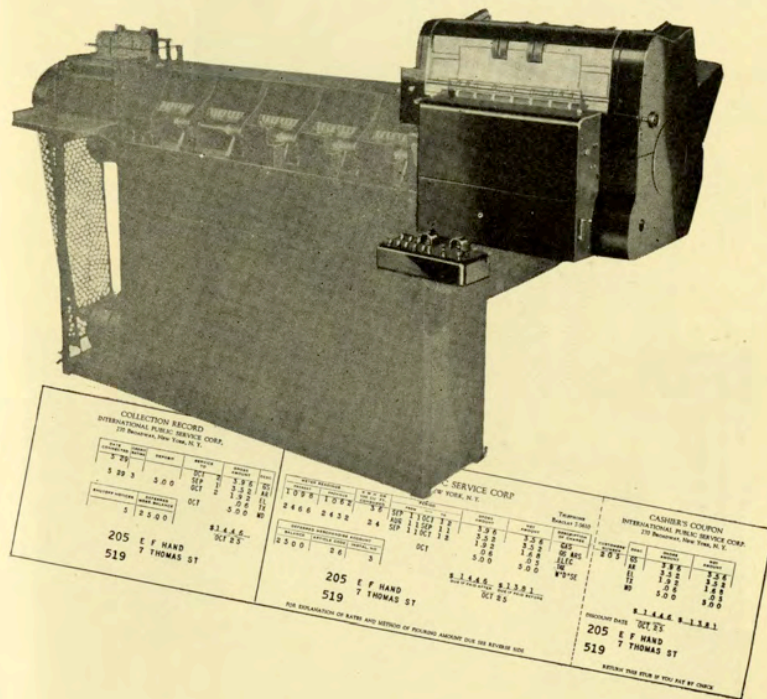


CONTINUOUS FORM BILL FEED

THE Continuous Form Bill Feed is a device attached to either the Invoicing Tabulator or an accounting machine for the purpose of automatically handling continuous forms which are fed through the printing mechanism.

It is applicable to any accounting procedure that requires individual forms or that is better handled with uniform sheets than with rolled paper,—such as the preparation of accounts receivable invoices and statements, accounts payable remittance statements, general accounting ledger sheets, and insurance agency registers.

Line finding is automatically performed. Multiple continuous forms interleaved with carbon can be used. This device provides the advantages arising from the use of single sheets and yields all the savings of time and labor attending the use of paper which is wound in a roll.

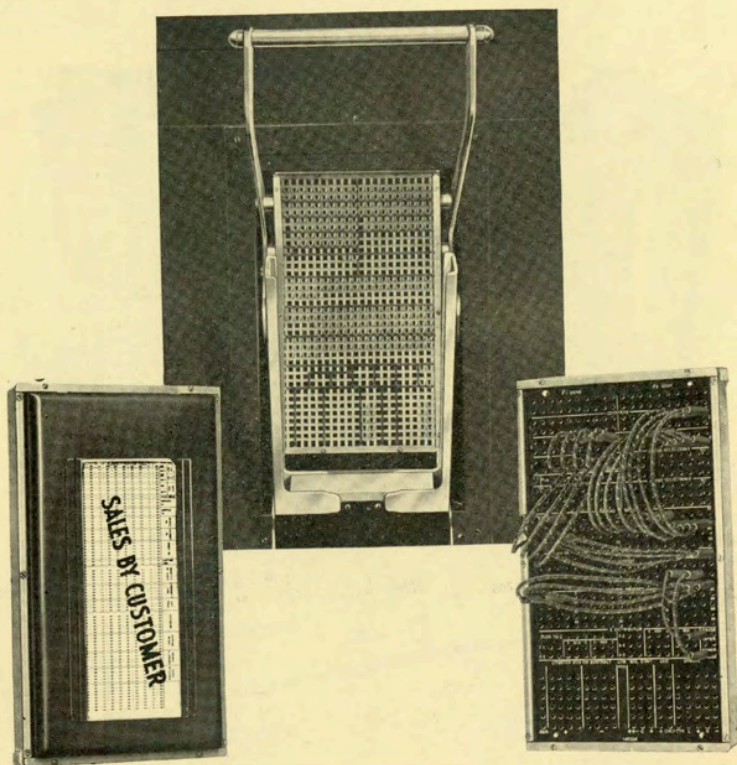


AUTOMATIC BILL FEED

THE Automatic Bill Feed is a device which automatically feeds single sheet forms, such as public utility bills, insurance premium notices, bank checks, etc. into the printing mechanism of an accounting machine, where proper information is automatically printed on them, and then ejects them. The device accommodates forms ranging from post card size to those 5 inches wide by 18 inches long, on which the information can be printed in any desired position.

Two thousand single line public utility bills are completed per hour. During this billing operation the totals of current delinquent and merchandise items are accumulated to balance predetermined controls.

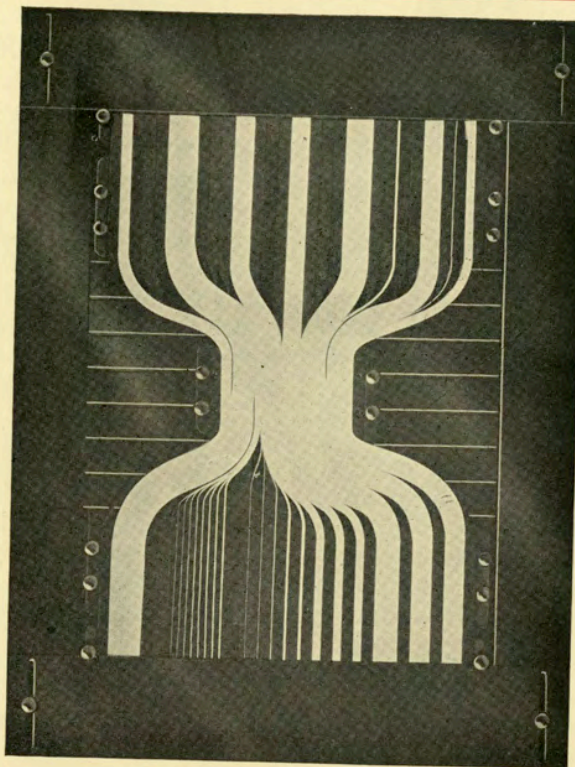
The Automatic Bill Feed can be attached to 4-, 5- and 7-bank accounting machines and to the Alphabetic Accounting Machine. Regardless of printing capacity the speed always remains the same.



AUTOMATIC PLUGBOARD ASSEMBLY

THE flexibility of Accounting Machines and Tabulators in handling data, which includes the sequence of classifications in printed reports, is obtained by means of a plug-board. Certain of these machines may be equipped with the Automatic Plugboard Assembly which enables a complete change of plugging arrangement to be made in less than a minute.

The use of this assembly speeds production since the only requirement in changing from one form of report to another is the insertion of a pre-plugged Set-up Slide in the machine at the completion of the first report. A Fixed Set-up (permanently wired) is obtainable for routine reports, one for each form or for each of those most frequently used. Another type is the Manual Set-up which can be wired for any report form and kept ready for use.



COSMOGRAPH

THE purpose of the Cosmograph is to produce graphic analyses of figure-facts without the drawing of graphs. It requires no measurements or computing for measurement.

The device consists of a black working board on which strips of paper are manipulated so as to form lines and masses. Each minimum percentage unit of data is represented by one white strip. The proper number of strips to make a full percentage group is positioned. When all groups have been arranged a photostat of the board is made. The negative print, on which the groups appear in black against a white background, is used as the graph.

The Cosmograph is applicable to analytical studies in which figure-facts must be quickly visualized, each in its relation to others.

INTERNATIONAL TABULATING SERVICE BUREAU

THE Electric Accounting Method has been applied to accounting and statistical work of every description for more than forty years, bringing to its users benefits of an extremely valuable nature. The potential ability of the method to aid executives in the control of business is unlimited.

In order that the greatest number of organizations may profit by the use of this method, the International Business Machines Corporation, through its Tabulating Service Bureau, provides a comprehensive accounting and statistical tabulating service which may be employed on a monthly, daily or hourly basis.

Speed, Accuracy, Low Cost

Operating offices are maintained in all the principal cities of the United States and Canada. Each is a self-contained tabulating department staffed with expert consultants and operators. Every job assigned to the Bureau is completed in the shortest possible time. Accurate results are assured. And the charges are surprisingly moderate.

All Needs Met

Present non-users of International Electric Accounting and Tabulating Machines may have all or only a portion of their accounting and statistical work done at the nearest operating office on these accurate, high-speed machines. Organizations having private installations of these devices may employ the Bureau to handle their excess work.

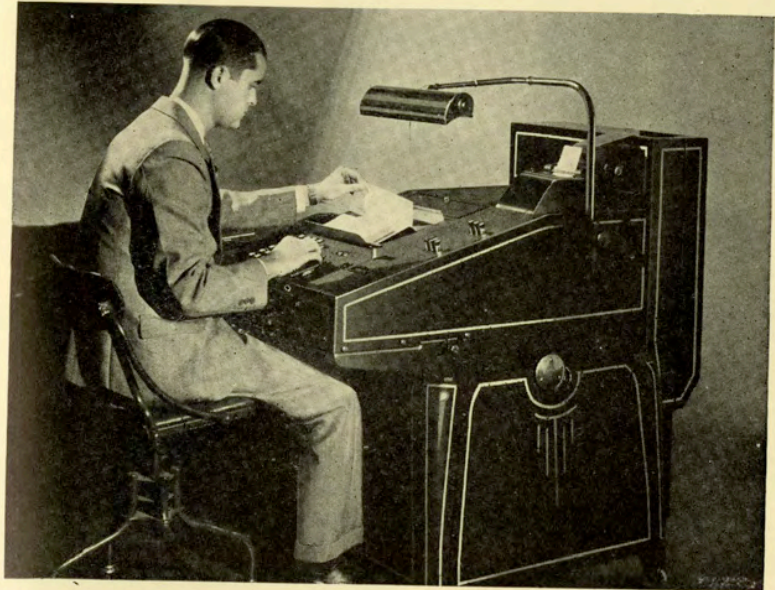
Confidential Treatment

The highest standard of business ethics characterizes every relation between the Bureau and its clients. The International Business Machines Corporation guarantees the completion of all contracts for service and also the holding in strict confidence of all data entrusted to the Bureau.

Clients

Among the clients satisfactorily served by the International Tabulating Service Bureau are industrial enterprises, financial institutions, wholesale and retail establishment, transportation and communication companies, the accounting profession, newspapers, hospitals, advertising agencies, and governmental departments.

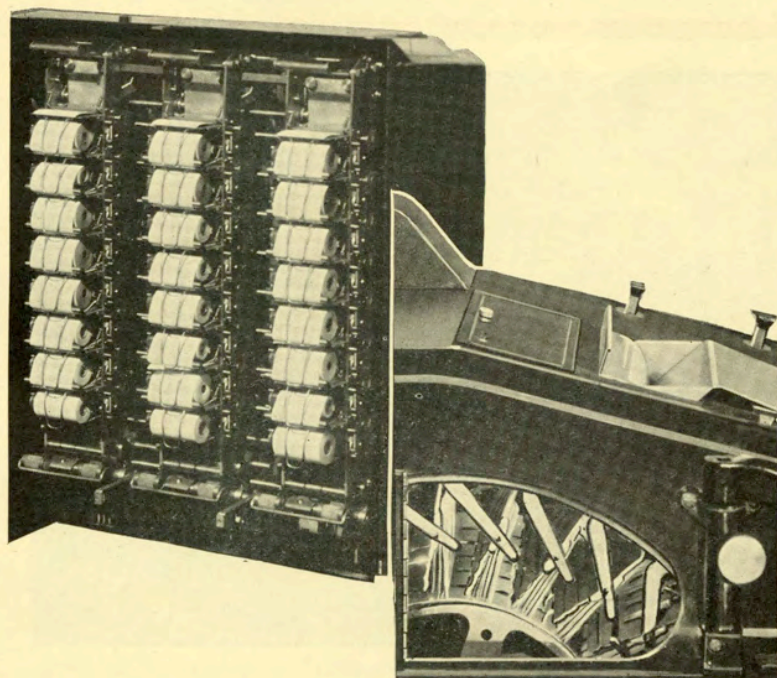
IBM PROOF MACHINE FOR BANKS



CONTROL is the keynote of the IBM Proof Machine for Banks. It brings to the check divisions a speedier and more comprehensive command of all the phases of their work, reducing the cost of the proving and distributing operations.

The Proof Machine for Banks is used to list, sort and prove checks in the receiving tellers', mail tellers', and bookkeeping departments of a bank.

In a single operation the Proof Machine for Banks accomplishes what formerly required three separate steps. It sorts and lists checks according to banks, provides totals, and proves all checks against deposit slips.



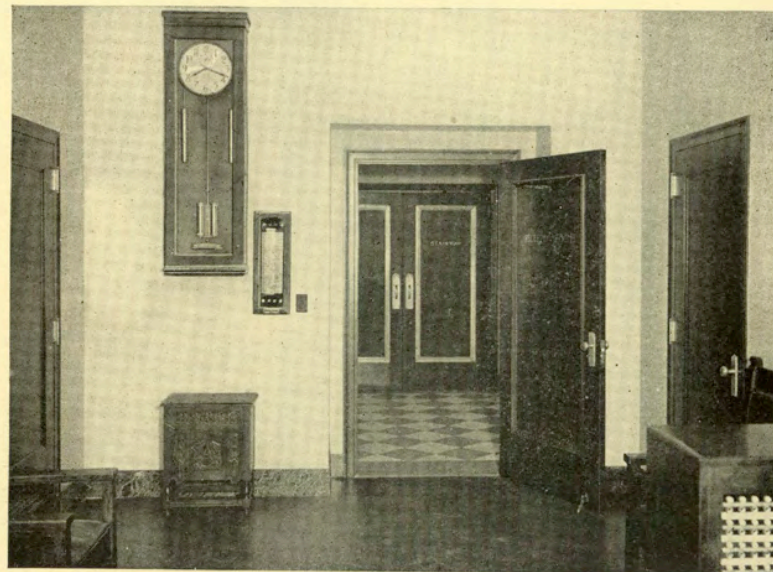
PROOF MACHINE FOR BANKS

COMPACTLY arranged in the Proof Machine for Banks are twenty-four individual adding machines and one control adding machine actuated by a ten-key adding machine keyboard, and twenty-four sorting receptacles controlled by a selection keyboard.

The following operations are simultaneously performed: checks are machine-sorted into the proper sorting receptacles; amounts are listed on the twenty-four individual adding machines using single or duplicate tapes; amounts are listed on the control tape, together with the classification symbols, in the same sequence as received from depositors.

All items are under control since the control tape furnishes a complete record for each deposit, showing the amount and classification of each check and the total of all checks in the deposit.

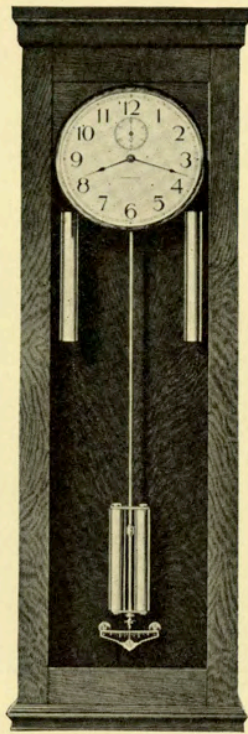
INTERNATIONAL TIME RECORDERS AND ELECTRIC TIME SYSTEMS



INTERNATIONAL Time Recorders and Electric Time Systems are used by every kind of industrial organization, business, and institution throughout the world — wherever time is indicated, measured and recorded. Since 1888, when this company developed the world's first mechanical time recorder, International has been introducing devices that increase efficiency and accuracy in time measurement.

Today the line includes hundreds of different types of devices, representative models of which are described on the following pages.

All the various time indicating, signaling and recording units illustrated will operate individually or any number of machines may be combined and operated as a system. An exclusive supervisory feature enables this system to maintain always-accurate time throughout an entire building.

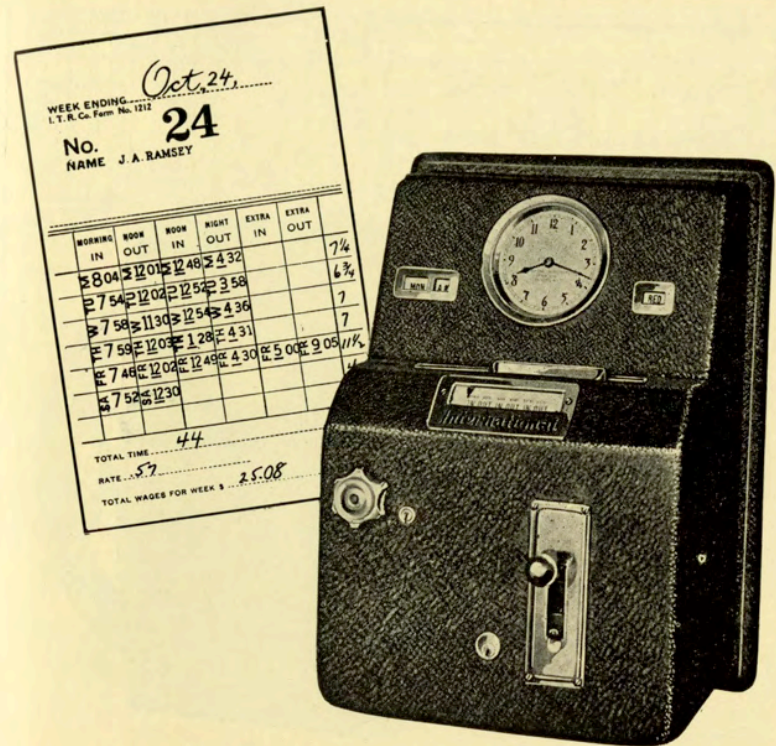


MASTER CLOCK

THE International Master Clock is the controlling center of a Self-Regulating Electric Time System. It is the source of accurate time for the various secondary time pieces distributed throughout the system.

This precise master clock is the finest commercial time piece manufactured and will rate within ten seconds per month of true time. Because of its ability to accumulate reserve power, it unfailingly maintains the "heart beats" of the system it controls—unaffected by variation of voltage or power interruptions.

Master Clocks are available in many models and in a wide variety of finishes to conform with practically any decorative or architectural scheme. In addition to the numerous wall types there is a wide selection of "grandfather clock" models.



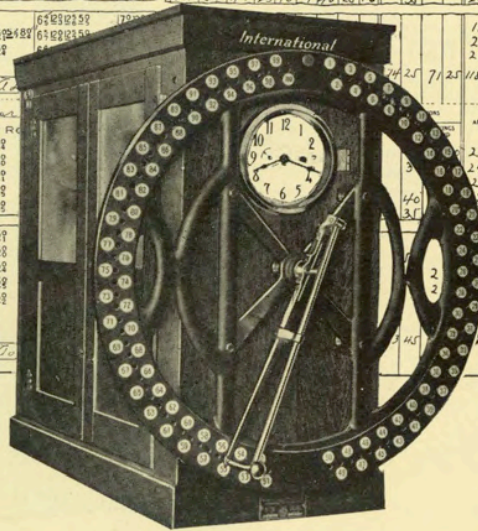
ATTENDANCE TIME RECORDER

INTERNATIONAL Card Type Attendance Recorders have been used for many years by concerns all over the world. The metal case machine, illustrated on this page, is the most recent model.

It provides an accurate, indisputable, unchangeable attendance record on a card for each person for any payable period. It automatically selects the proper registering position for all arrivals and departures. The two color ribbon automatically indicates in red all late arrivals and early departures. Of heavy compact construction, it incorporates new features of design in keeping with modern engineering standards.

The Card Recorder may be operated individually from an electric current outlet or included as a secondary unit of the International Self-Regulating Electric Time System. The same machine is also available in a variety of spring driven models.

EMPLOYEES	NO.	PAY ROLL WEEK ENDING		TOTAL ATTENDING TIME	RATE	PAYROLL			DEDUCTIONS		NET AMOUNT DUE			
		MON.	TUES.			EXTENSION	ALLOWANCE	TOTAL	INSURANCE	SAVINGS FUND				
C. G. O'DONNELL	1	61000000	61000000	6000	1.25	74	60	34	40	32	40	50	3 00	28 90
A. B. BROWN	2	61000000	61000000	6000	1.25	74	54	29	16	30	44	1 25		30 44
L. E. CLINTON	3	61000000	61000000	6000	1.25	44	45	56	25	20	20	35	2 50	22 50
A. W. TYLER	4	61000000	61000000	6000	1.25	54	54	57	30	78	30	78	40	24 80
A. C. POWERS	5	61000000	61000000	6000	1.25	44	44	51	24	23	24	23		24 23
F. N. DOWLING	6	61000000	61000000	6000	1.25	52	54	49	24	46	24	46	2 00	23 46
J. G. MURPHY	7	61000000	61000000	6000	1.25	44	44	43	21	40	21	40	50	20 90
N. E. ELDREDGE	8	61000000	61000000	6000	1.25	52	54	44	23	76	1 40	25 16	35	24 81
CHECKED BY: [Signature]														
EMPLOYEES														
J. W. KINGMAN	9	61000000	61000000	6000	1.25	71	25	11	12	09				18 40
T. W. WADSWORTH	10	61000000	61000000	6000	1.25	71	25	11	12	09				23 73
R. F. NURDIE	11	61000000	61000000	6000	1.25	71	25	11	12	09				24 85
L. A. OREN	12	61000000	61000000	6000	1.25	71	25	11	12	09				24 85
G. A. MACDONALD	13	61000000	61000000	6000	1.25	71	25	11	12	09				24 85
CHECKED BY: [Signature]														
EMPLOYEES														
C. W. MORRIS	14	61000000	61000000	6000	1.25	71	25	11	12	09				24 85
L. H. ROOT	15	61000000	61000000	6000	1.25	71	25	11	12	09				24 85
B. C. WELCH	16	61000000	61000000	6000	1.25	71	25	11	12	09				24 85
M. B. FRENCH	17	61000000	61000000	6000	1.25	71	25	11	12	09				24 85
J. B. JONES	18	61000000	61000000	6000	1.25	71	25	11	12	09				24 85
CHECKED BY: [Signature]														

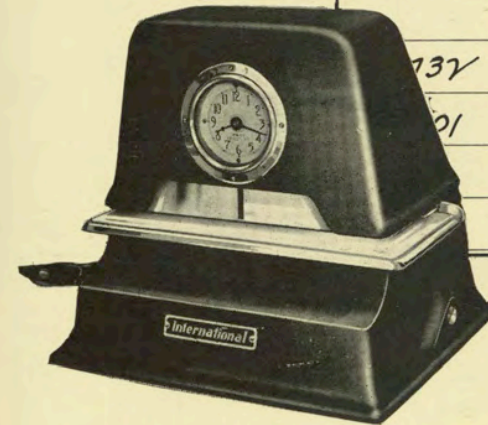


AUTOMATIC PAYROLL MACHINE

THE Automatic Payroll Machine furnishes, on one sheet, the daily registrations for all employees and payroll extensions for an entire pay period. The record sheet remains inside the machine until the end of the period, when it is removed, separated into blocks of fifty employees, and filed as original pages in the payroll binder. Compilations are made alongside the registrations. In addition to the speed and convenience this record brings to compiling payrolls, it is always available for income tax or other legal references.

Automatic Payroll Machines are furnished in many models, covering any payroll period and in capacities of 50, 100, and 150 employees each. They may be operated individually — with either spring of electric drives — or as secondary units in the International Self-Regulating Electric Time System.

DAILY COST CARD			
No. 27	DATE 8/23		
I. T. R. Co. Form No. 6977			
NAME Joe Ralston			
JOB No.	Time	Clock Time Record	
	OFF		
	ON		
	OFF		
	ON		
737	OFF		AUG 23 9.0
	ON	.5	AUG 23 8.5
701	OFF		AUG 23 8.5
	ON	1.2	AUG 23 7.3
	OFF		AUG 23 7.3
	ON	2.5	AUG 23 4.8
	OFF		AUG 23 4.8
	ON	1.6	AUG 23 3.2



JOB TIME RECORDER

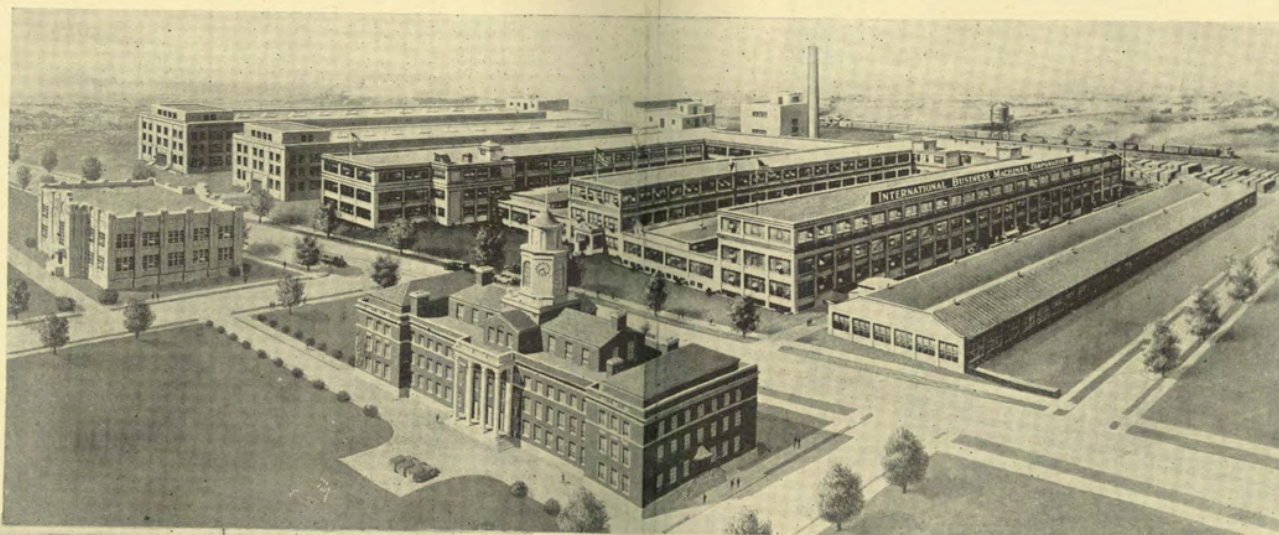
THE purpose of an International Job Time Recorder is to furnish accurate, PRINTED records of the start and finish of every job or operation.

The complete labor cost story, in clear, legible, indisputable figures, showing to the minute actual time consumed, can be printed on any kind of job ticket or slip.

These records reveal time lost on and between jobs—render cost information immediately available and permit a constant, day-by-day close-up of time purchases and expenditures.

Many models of International Job Time Recorders are available. The one illustrated on this page (series 2000) may be had for operation either individually (from an electric light socket) or as a unit of the International Self-Regulating Electric Time System. Several spring drive models are also available.

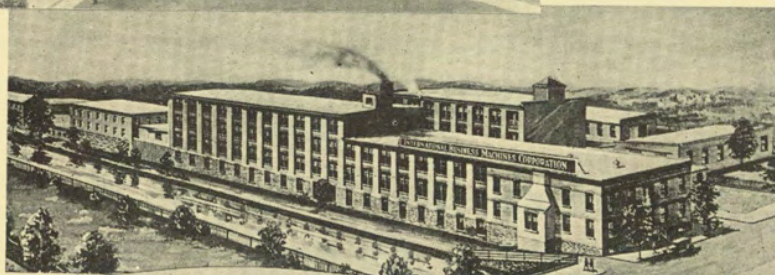
INTERNATIONAL FACTORIES



ENDICOTT, N. Y.

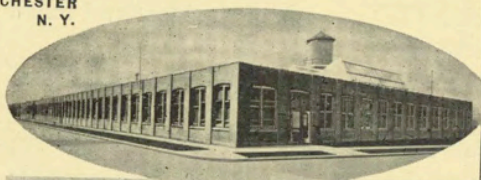


TORONTO,
CANADA.

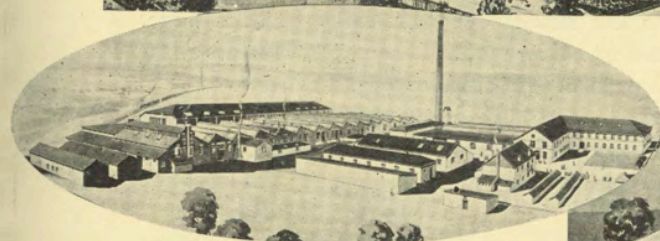


WASHINGTON, D. C.

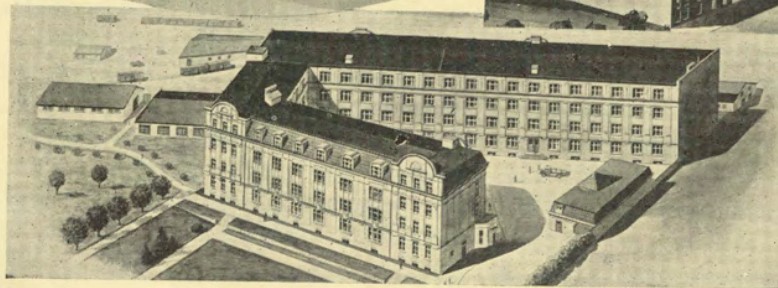
ROCHESTER
N. Y.



PARIS,
FRANCE

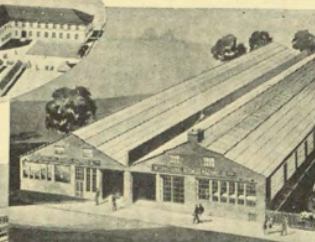
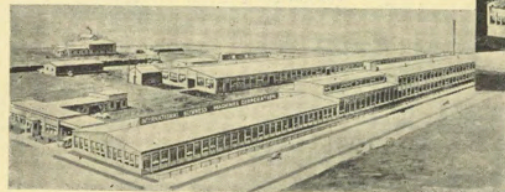


SINDELFINGEN, GERMANY



BERLIN,
GERMANY

DAYTON,
OHIO



LONDON, ENGLAND

DATE <i>7/27</i>		Form No. 5114*			
NAME <i>F. Carlton</i>		NO. <i>10</i>			
CLOCK	TIME	ORDER	PCS	RATE	POST
TH	5:00	128 4	55	.86	
TH	4:30	7-63 3			
TH	4:30	131 4	108	.84	
TH	3:28	7-65 3			
TH	3:28	131 4			
TH	2:10	A			
TH	2:10	13			
TH	12:46	R			
TH	12:00	14			
TH	10:50	233			
TH	10:50	14			
TH	9:46	S-S			
TH	9:46	14			
TH	8:30				
IN OUT REMARKS					

MODEL 700 JOB TIME RECORDER

A RECENT addition to the International line of Job Time Recorders is the Model 700 illustrated on this page. It is designed to bring modern, accurate cost accounting facilities within reach of the smaller organizations.

This recorder has the same high grade mechanism, the same flexibility, and prints the same kind of record as those International Job Time Recorders used where elaborate cost systems are kept.

Each workman prints his own record of starting and stopping times on all jobs. Any kind of cost card, ticket or slip may be used without changing present forms.

This recorder in a neat, compact, metal case with durable crackled finish may be set up for instant operation wherever there is a convenient alternating current outlet.

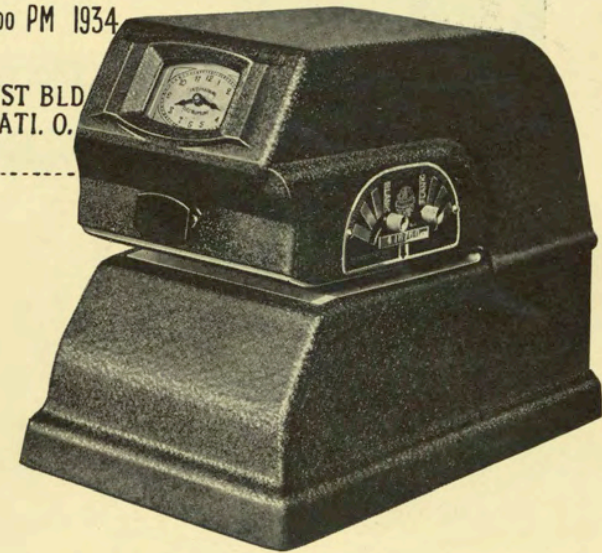
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COHLE & TYREE

MAR 1 2 00 PM 1934

UNION TRUST BLD
CINCINNATI, O.

BY -----

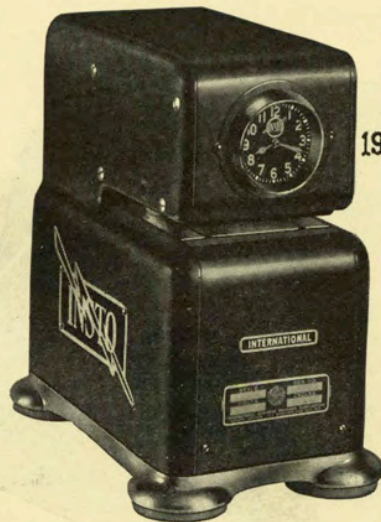


ELECTROPRINT TIME STAMP

THE International Electroprint leaves no chance for neglect in the handling of important papers. It speeds up routine work by putting in plain type a record of the progress of paper work through office, factory or institution.

This is the only completely automatic time stamp manufactured. Registrations, made electrically by a slight touch of the finger, show the year, month, date, hour and minute, A.M. or P.M., along with department or individual's name. Interchangeable type cylinders print a wide variety of notations, such as "Received," "Acknowledged," "Approved," etc., along with the regular registrations.

The Electroprint is built for operation either with an International Electric Time System, or directly from an alternating current outlet as an individual unit. Other models are provided for spring drive operation.



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VANADIUM CORP OF AMERICA

1934 MAY - 17 - PM 4 : 14

NEW YORK, N.Y.

INSTO TIME STAMP

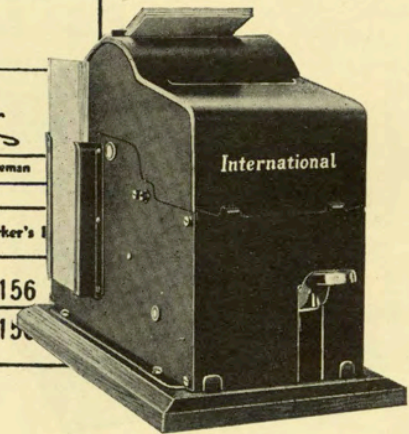
INTERNATIONAL Insto is a time stamp that speeds up the handling of all business paper routines. Its permanent, indisputable time and identification record printed on every letter, telegram and important document fixes responsibility for delays and neglect.

This time stamp operates automatically when a paper is inserted. There is no hammer to strike, or button to push. Even a sheet of tissue paper is of sufficient strength to operate it, yet Insto is so ruggedly constructed that it will withstand years of heavy usage.

Paper contact operation, requiring the use of but one hand, eliminates all lost motion. Sorting and stamping may proceed simultaneously at a rate of speed that is limited only by the operator.

International Insto is furnished in models to imprint a wide variety of identification information.

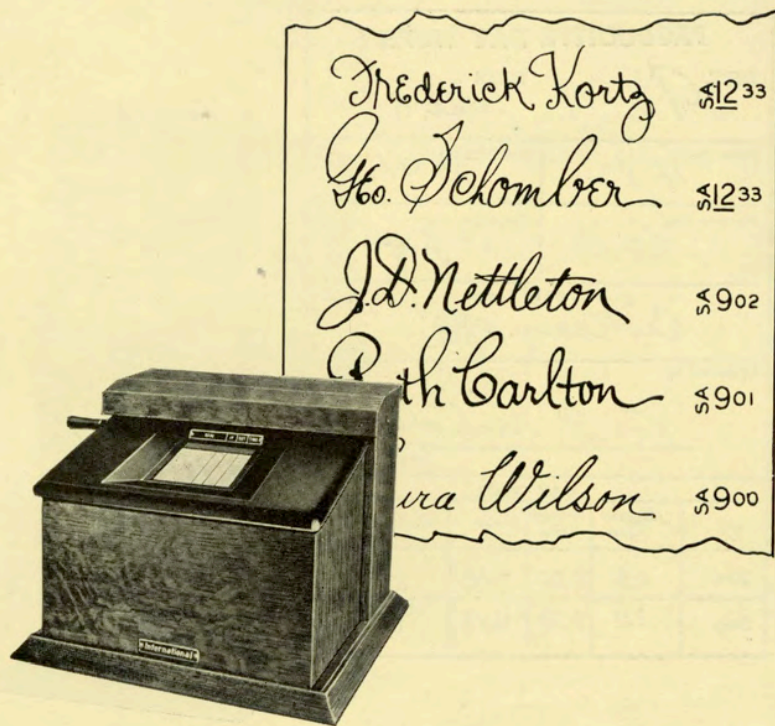
PRODUCTIVE DAY WORK				
DEPT.	9		DATE	June 8
Order No.	482		Part No.	341
Machine No.	6		Operation No.	89
DESCRIPTION Cutting off				
Approved by A. F. Nichols Foreman				
DAY WORK				
	Elapsed Time	Money Value	Burden	Worker's I
Start	0.0	0.00	0.00	156
Stop	1.2	0.72	0.72	156



MONEY TIME RECORDER

THE International Money Time Recorder automatically computes and prints the exact elapsed time on every job or operation. When the card records reach the cost department no computations are necessary. The number of minutes spent, the labor charge, and the overhead amount have all been computed, thus eliminating several operations ordinarily performed by the cost and payroll departments. Errors are reduced to a minimum and complete cost analyses are available almost as soon as the work is completed.

This machine lends itself readily to use in conjunction with an Electric Accounting and Tabulating installation. The original records may be printed on tabulating cards, in which case, payroll compilation, distribution, and cost analyses become entirely automatic procedures.



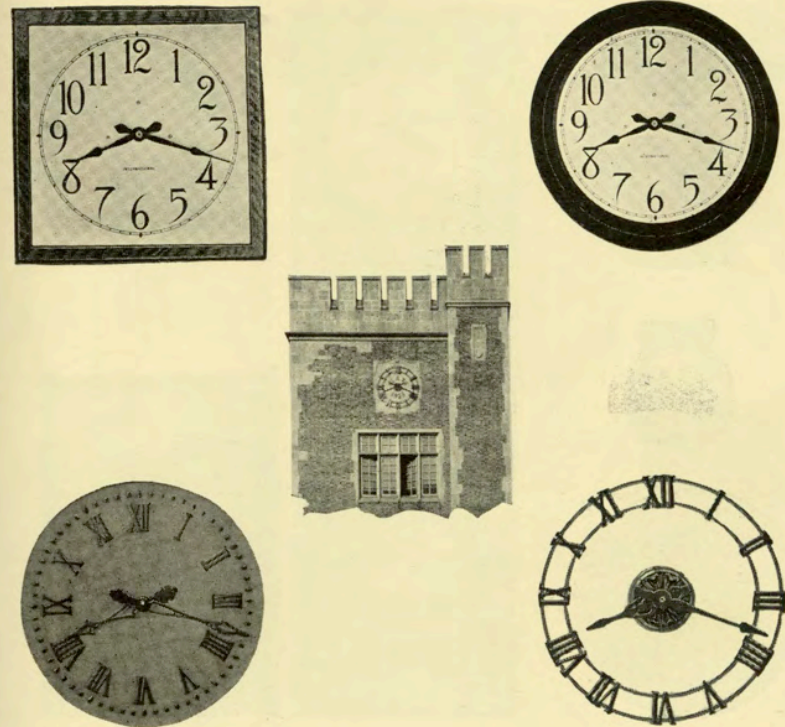
AUTOGRAPH TIME REGISTER

THE Autograph Time Register is a mechanical attendance recorder that combines the printed time record with personal signatures. Its operation resembles the simple signing of a book.

This recorder is a dignified, absolutely dependable means of supervising attendance. One person cannot register for another without detection.

Because of its flexibility it finds ready application in places where full time effort is essential to profitable operation. The uses are varied. It frequently serves as a watchman's station; as a register for office boys, messengers, or delivery men; to record entrances to and departures from bank vaults, tool or supply rooms, office buildings after hours, etc.

Furnished in models for International Electric Time System operation or individually with either spring or electric drives.

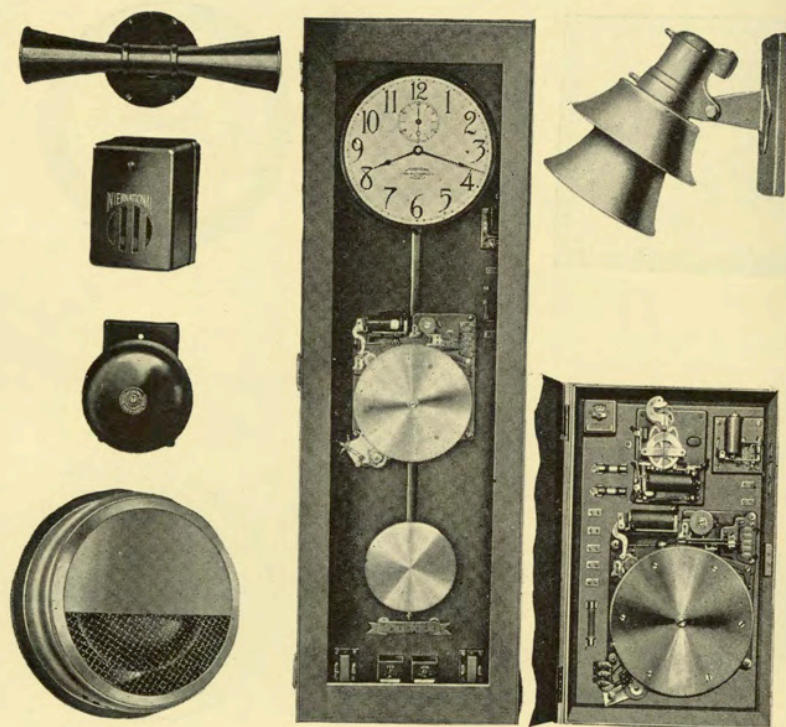


SECONDARY CLOCKS

INTERNATIONAL Secondary Clocks are designed for the purpose of furnishing a uniform distribution of time. They place accurate time wherever desired—without the bother of winding, setting or other maintenance. Operated as units in an International Self-Regulating Electric Time System, they are automatically checked and proved at regular intervals for agreement and accuracy.

In schools, hotels, hospitals, public buildings, they are used primarily to furnish dependable time service. In business and industrial organizations they establish regularity in routines, coordinate activity and set a gauge of progress on production schedules.

There is an International Secondary wall clock for every purpose. Hundreds of designs are available for selection, including various types of suspended, outdoor and tower clocks. Special clocks may be built to suit any architectural plan.

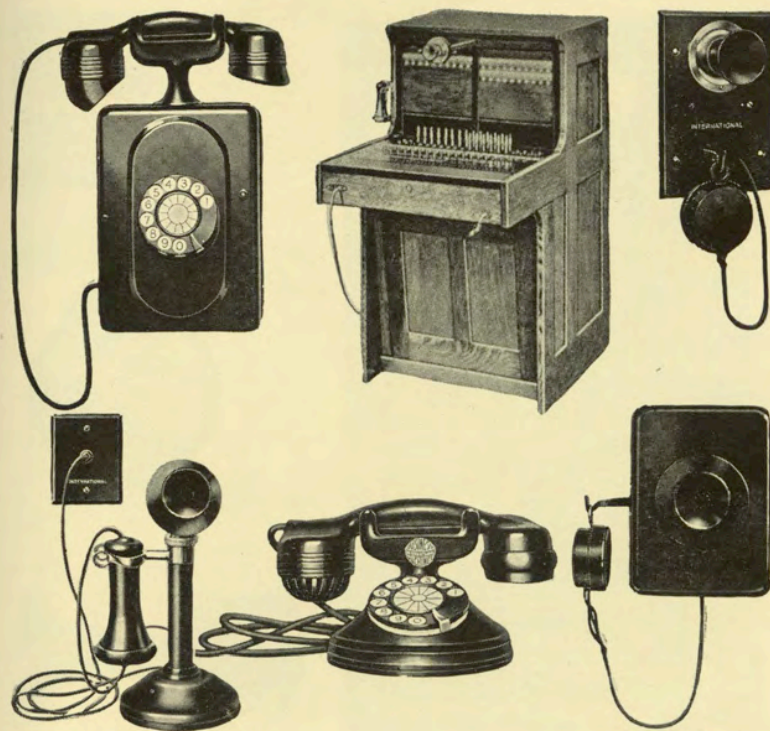


PROGRAM SIGNALING SYSTEMS

AN International Program Machine automatically *sounds* exact time for starting and stopping of work, changing of shifts, moving of classes in schools, etc. The signals may be given by electric bells, horns, sirens or whistles.

This device consists of a drum, or wheel, which is slowly turned forward like the hands of a clock. The "schedule" of signals is set up by means of easily adjusted pins or lugs. A calendar device silences all signals during the night, Sundays, or any other required period.

The machine illustrated permits simultaneous operation of several different schedules, any combination of signal intervals and any type of signal. It operates as part of an International Self-Regulating Electric Time System. A wide variety of other models is available to meet any specific requirement.

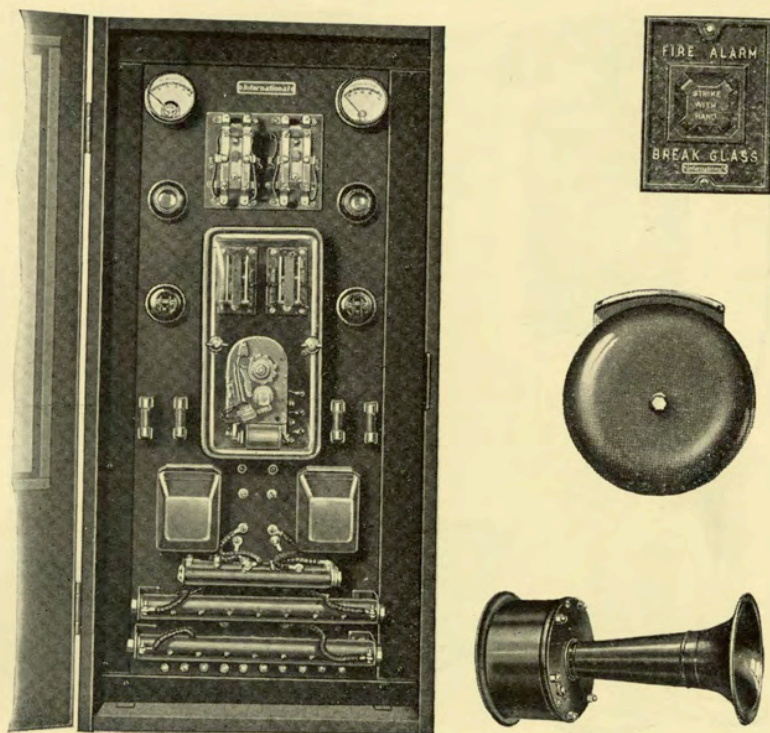


INTERCOMMUNICATING TELEPHONE SYSTEMS

INTERNATIONAL Telephone Systems are designed for interior communication. Their chief applications are in business organizations, industrial plants, schools or other institutions and residences. They provide inter-office, room or departmental communication without interfering with or congesting outside telephone systems.

Several types of systems are available. The simplest of these is a master telephone and push button board connected to a series of outlying telephones.

More elaborate systems provide switchboards or private exchanges and any number of outlying telephones operating on the same general principle as a public telephone system. Automatic Dialing systems are also provided to permit inter-office or room communication without the necessity for a "central" control board.



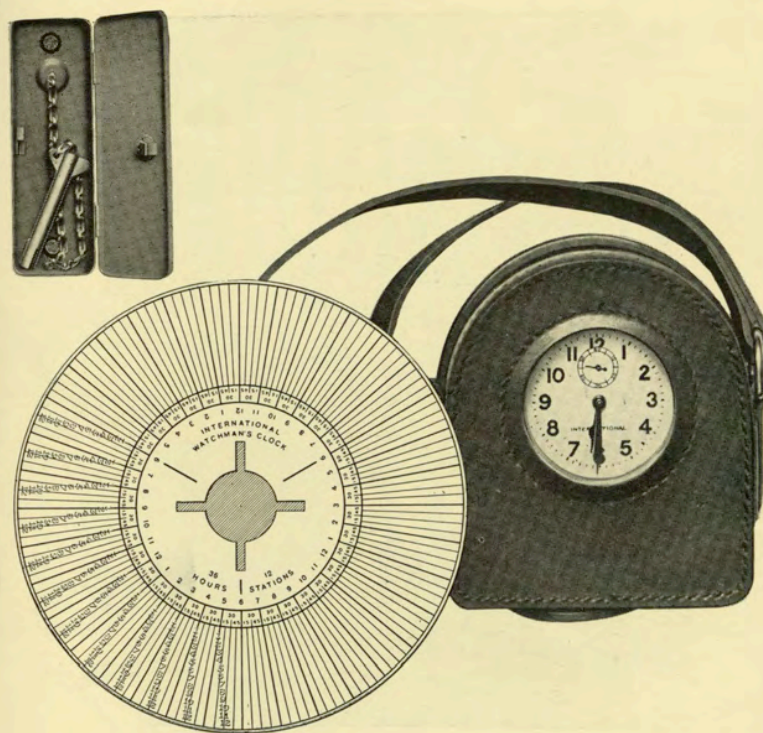
FIRE ALARM SYSTEMS

INTERNATIONAL manufactures a complete line of interior fire alarm equipment suitable for every industrial or institutional use where the utmost in protection of life and property is desired.

All the latest engineering features are incorporated in these systems. They are sold and installed under the approval of the Fire Underwriters Laboratories.

Of particular interest is a new break glass station requiring no lever or hammer to break the glass. A slight blow with the hand on a metal push plate is sufficient to start an alarm—thus eliminating the danger of broken glass.

There is a system suitable for every requirement—including all the approved circuits, whether simple or elaborate. A wide variety of fire alarm bells, horns, gongs and other sounding devices is available.



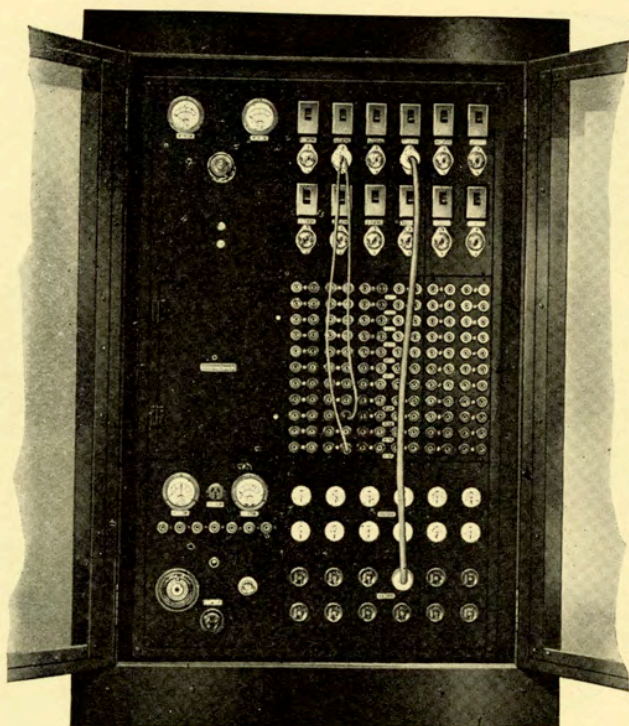
WATCHCLOCK SYSTEM

THE International Watchclock System consists of a portable recorder and stationary registering stations. Its purpose is to insure systematic, regular patrol of protected property. The recorder is carried to each station where an embossed tamper proof record is made of the visit. Any negligence or irregularity is revealed and demands explanation.

The record has a capacity for 36 hours continuous service, permitting the clock to be loaded on Saturday and opened Monday without changing the record in the meantime.

The clock, in a durable and attractive leather case, is of special design for this particular purpose. It will furnish eight-day service without winding.

All International Watch Clock Systems and equipment carry the label of approval of the National Board of Fire Underwriters.



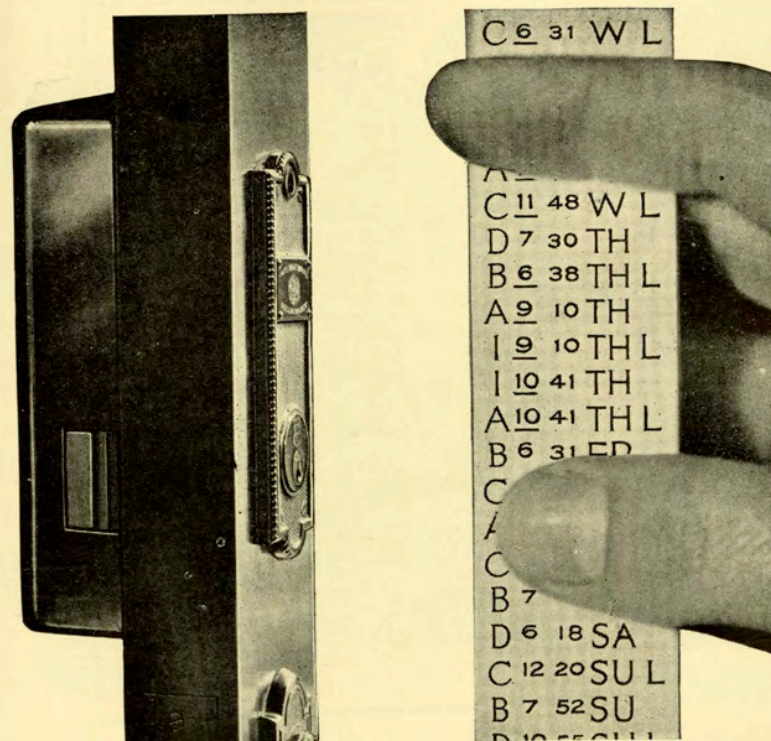
LABORATORY EXPERIMENTAL PANEL

FOR use in science laboratories of business or industrial organizations, schools and colleges, International has developed a modern electrical distribution panel. Any number of different voltages, in either alternating or direct current are made available for experimental purposes. Many experiments may be handled simultaneously regardless of the voltage required.

Special safety features are employed which protect the operator from accidental electrical shocks. Danger of improper connections is entirely eliminated.

The panels, furnished in units, may be supplemented at any time with additional sections. All parts and units are accessible from the front of the board.

This company is prepared to build equipment for any special requirement.

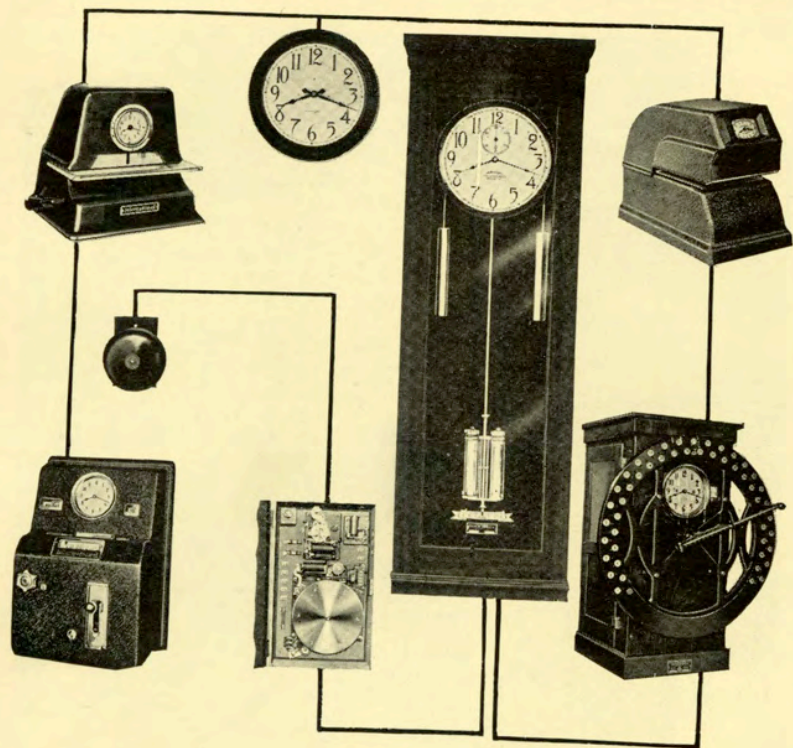


RECORDLOCK

THE advanced International Recordolock is a recording door lock that gives complete protection for, and greater supervision of, important doors. It is the only device of its kind on the market which gives a private, easy-to-read, printed record of: who locked or unlocked the door; the time to the minute when the locking or unlocking occurred; whether the locking was done from the inside or outside; whether all openings were securely fastened; and the time of supervisor's visits or watchman's rounds.

This valuable information, printed on a convenient paper tape, is available only to the owner. It employs no codes or symbols and no special interpretation is required.

It is the only lock of its kind that may be satisfactorily owned outright—a feature of very decided economy.

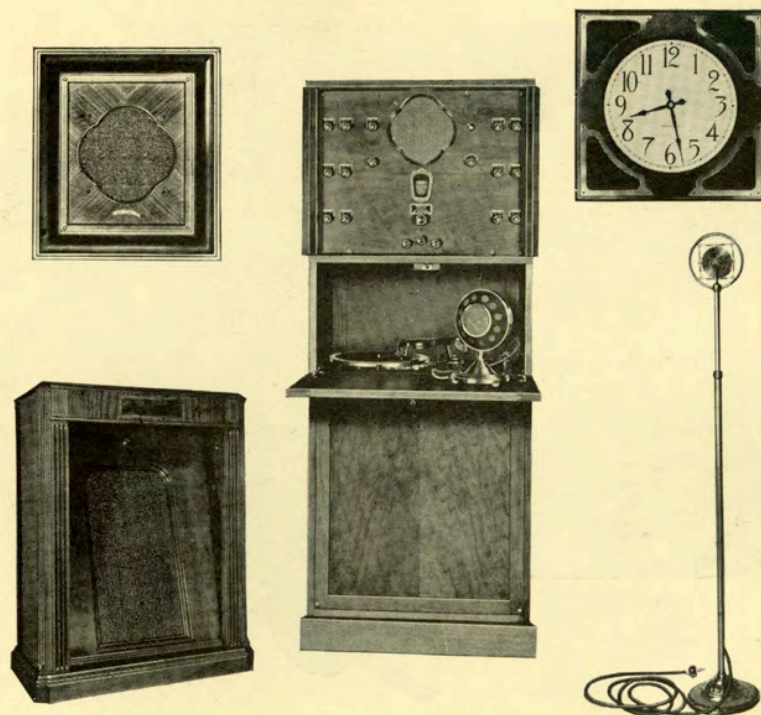


SELF-REGULATING ELECTRIC TIME SYSTEM

THE International Self-Regulating Electric Time System is the most dependable means of maintaining uniform, accurate time throughout a building or group of buildings. Any number or combination of time indicating, recording and signaling devices are operated and controlled by one Master Clock which furnishes the time and supervision for the entire system.

A patented, exclusive feature causes all the time units to compare themselves with the Master Clock once every hour. If by accident any unit has gotten "out of step," correction is made before the next hour begins, thus completely eliminating the manual regulation and "step-ladder" maintenance common to ordinary electric clock systems.

Thousands of International systems are giving satisfactory service throughout the world—wherever uniform time is essential to efficient and profitable operation.



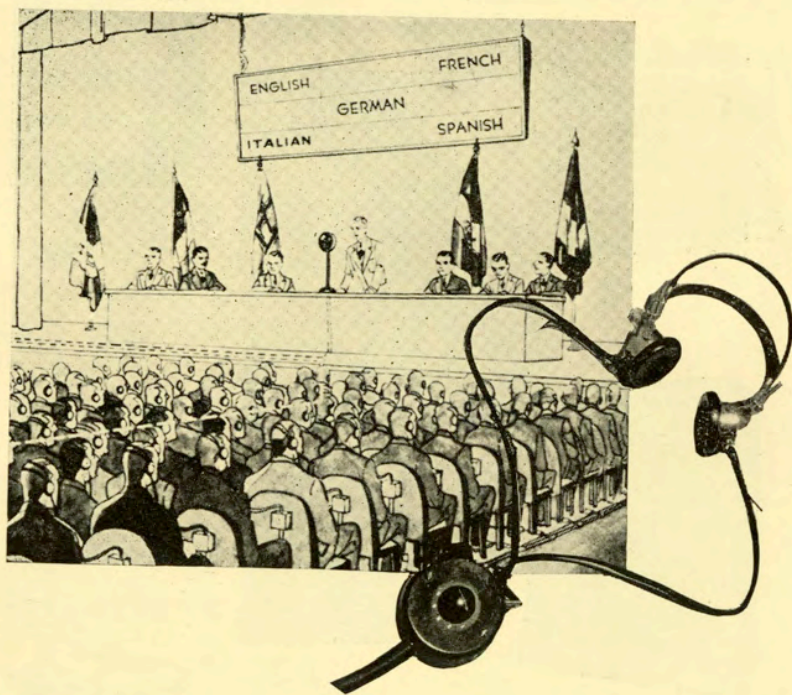
CENTRAL CONTROL RADIO SYSTEMS

INTERNATIONAL Central Control Radio, Music and Speech Equipment provides for the controlled amplification and distribution of radio, microphone and phonograph programs. All three sources of sound are centralized in one attractive, easily operated instrument.

Programs are selected and sent out at will to any one or all rooms equipped with loud-speakers. Sound is reproduced entirely without distortion.

These systems, varying according to individual requirements, are furnished in a wide range of portable and stationary models. They are applicable to the administration, communication and entertainment needs of business; formal education; commercialized recreation; religion; medicine and of all other fields where people are assembled in groups to be entertained, instructed, directed or given information.

Simplified operation is a feature of this equipment.



FILENE-FINLAY TRANSLATOR SYSTEM

NO LONGER are conferences between men of many lands doomed to be dreary affairs of interminable length where a succession of interpreters repeat every original speech.

The International Filene-Finlay Translator System permits such conferences to proceed with as much ease as a gathering where everyone speaks the same language.

Each seat is equipped with a set of headphones and a selector device, by means of which delegates may "listen in" on any language desired. Each member of the audience may without interference select the language he wishes.

This equipment is designed for installation either in temporary or permanent form. Regular amplifying equipment also may be used in conjunction with the translator. Additional microphones may be installed to permit floor discussions.

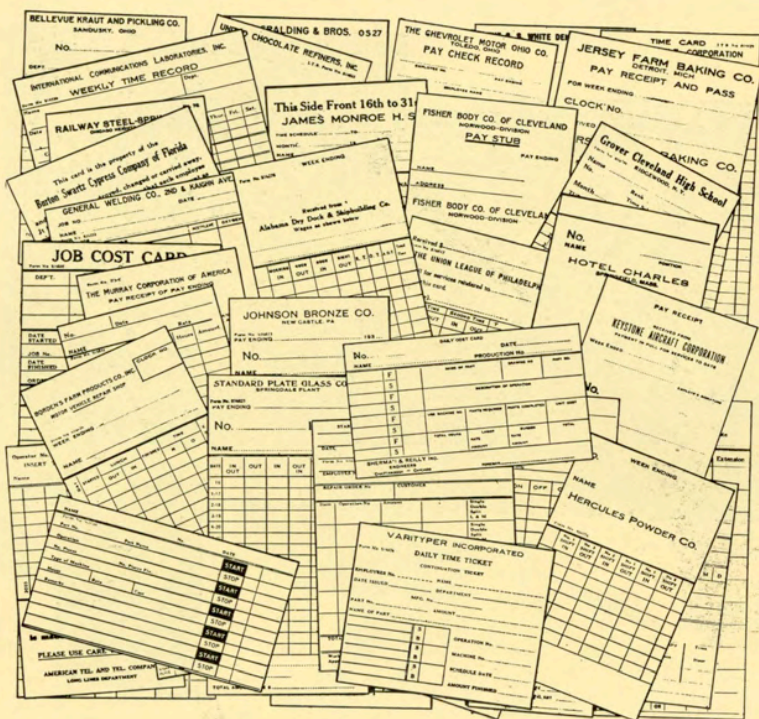


TOWER AND OUTSIDE CLOCKS

INTERNATIONAL manufactures a wide variety of weatherproof tower and other types of outside clocks. Various standard mechanisms are utilized in countless ways to meet the individual decorative requirements of architectural design in banks, churches, schools, public buildings, hospitals, etc.

The illustration above is a typical example of these clocks which are all built to specifications. It was constructed, with a 22-foot dial, 400-pound hands, 3-foot numerals and brilliant Neon tube illumination, for advertising purposes.

Combining the new International Tower Clock Movement with International Sound Amplifying Equipment and an International Program Device, the illusion of a gigantic carillon was created. Pealing Westminster chimes at each quarter-hour and the deep booming tones of an hour bell are produced from a tiny striking mechanism less than eight inches long.



CARD PRINTING FACILITIES

IN ITS modern factory at Endicott, New York, International maintains the largest card printing plant in the world, with a capacity of many millions of cards per month.

Automatic machinery and special high speed presses designed by International engineers make it possible to produce forms at the lowest possible cost, consistent with quality.

Thousands of all kinds of forms are available—including cost cards, time cards, production cards, job tickets, dial sheets, etc. The plant is equipped to set up and print any special form to suit individual requirements.

All the paper or "stock" is made specially for this company, and is subjected to rigid laboratory tests to determine whether or not it conforms with International standards of printing quality, thickness, composition, texture, durability and tensile strength.

INTERNATIONAL TICKETOGRAPHS



THE devices in this group of International Business Machines are used to maintain predetermined cost schedules in section-work operation and to control production.

The Ticketograph system is founded on a work-ticket comprised of coupons arranged in operation sequence. By means of the Ticketograph, section-work prices which are to be paid on a given lot are simultaneously printed on a given set of coupons together with other pertinent information. As the work progresses the workers remove the coupons corresponding to their respective tasks and present them as vouchers for pay.

The Certometer effects similar results. Its operation differs in that each worker is supplied with a key by means of which the rates of pay and other data are printed as the job progresses.

INTERNATIONAL TICKETOGRAPHS

**SPECIMEN
TICKETOGRAPH
COUPON PRODUCTION TICKET**

Date _____

When the job is completed this part of the ticket, containing full information regarding the work done, remains attached to the finished product.

OFFICIAL INDICATION	1	2	3	4	5	6	7	8	9	10
1474					47					

On finishing an operation the worker writes his "employee number" in the section enclosed with the number of the operation just completed. Full name, address and telephone number are quickly transcribed by the Ticketograph.

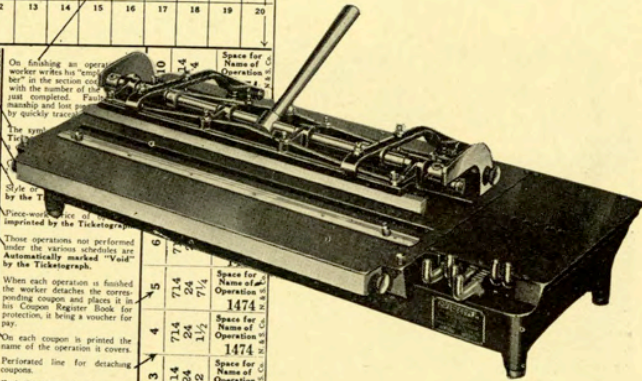
These operations not performed under the various schedules are automatically marked "VOID" by the Ticketograph.

When each operation is finished the worker detaches the corresponding coupon and places it in his Coupon Register Book for protection, it being a voucher for pay.

On each coupon is printed the name of the operation it covers.

Each ticket is numbered consecutively, the actual number acting as an identification.

The space in which these explanatory notes are printed may be used for remarks or instructions.



**TICKETOGRAPH
(Type 1)**

THE Ticketograph (Type 1) is a production cost controlling device by means of which the Lot Number, Quantity, Rate of Pay, or other information, are recorded on section-work pay coupons. The ticket form is placed in the machine and the type bars are shifted into place for the proper impressions. Then with a single pressure of the printing lever all the necessary information is simultaneously recorded on as many as 104 coupons. The imprints are made with indelible ink by specially designed type that is difficult to imitate.

After the schedules have been determined and set up in the machine they unfailingly supply correct data as long as they remain in force. New schedules can easily be substituted.

This device guarantees accurate price schedules, enables the payroll to be compared with production, effects savings, and makes for greater economy in manufacturing methods.

INTERNATIONAL TICKETOGRAPHS

SPECIMEN COUPON TICKET

This space is available for date, instructions and any other information required.

FACTORY CONTROL	1	2	3	4	5	6	7	8	9	10
IC-AD-SC-01-RV-1										

On finishing an operation the worker writes his "employee number" in the section enclosed with the number of the operation just completed. Full name, address and telephone number are quickly transcribed by the Ticketograph.

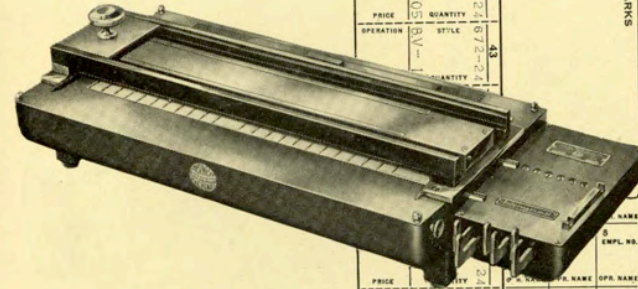
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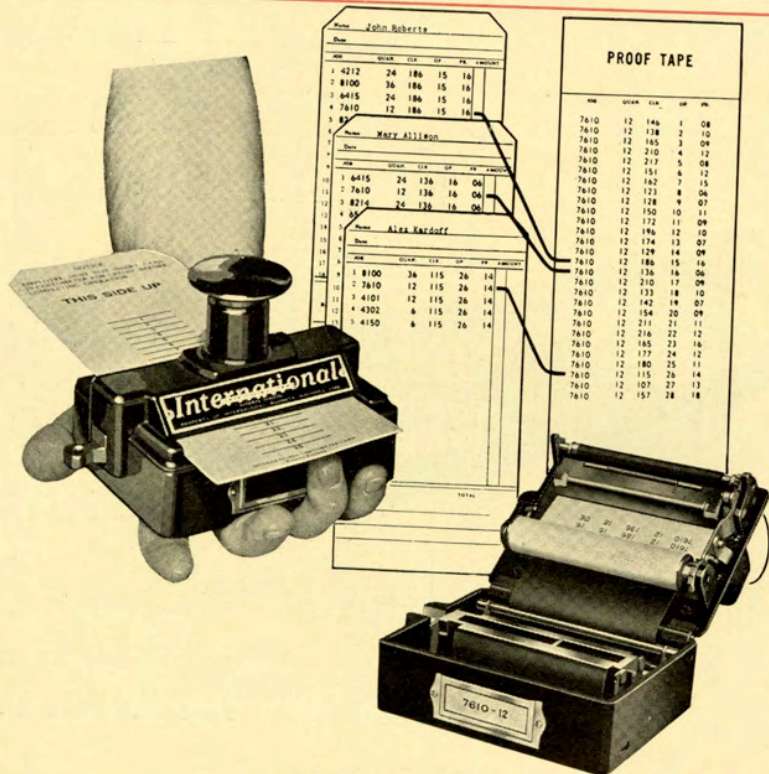
**TICKETOGRAPH
(Type 2)**

THE Ticketograph (Type 2), like the Type 1, is an economical device used for controlling job labor costs under the coupon system of wage payments. A flexible type arrangement provides an unlimited range of price schedules. Any combination of section-work rates which any user will ever need can be set up by the operator.

This type is equipped with impression rollers operated by a printing carriage which slides over a rubber plate. A single movement of the carriage over the plate causes all information pertinent to a ticket to be imprinted thereon.

Both types of the Ticketograph provide a simple but positive means of supervising work in process. Through the medium of Ticketograph-prepared coupons and a production board the status of all jobs is shown at all times.

INTERNATIONAL TICKETOGRAPHS



CERTOMETER

THE International Certometer is a small device that automatically prepares and checks piece-work payroll vouchers.

An individual machine is arranged to accompany each lot of raw material through every stage of production. At the completion of each manufacturing operation, the workman places his pay-card in the slot, inserts his identification key and presses the lever. Two identical records are automatically printed—one on the worker's card and the other on a proof-tape locked inside the machine.

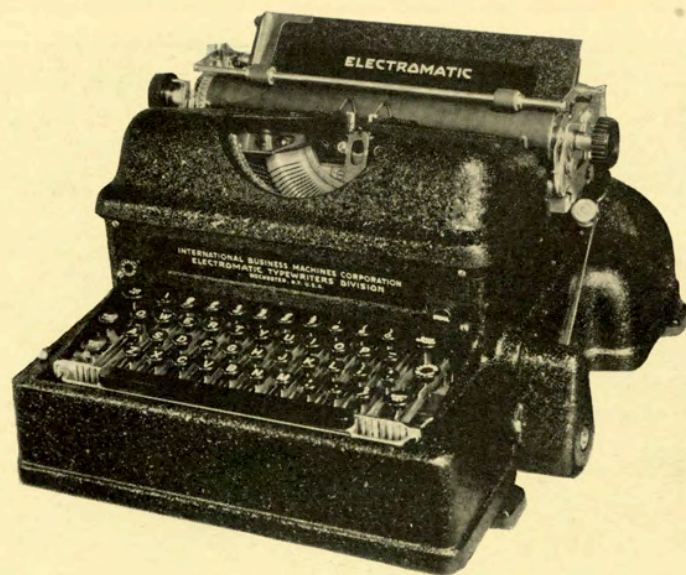
When the job is finished, the proof-tape is removed and quickly compared with a master schedule of operation rates. This audit authorizes the immediate payment of amounts printed on the pay-cards. The necessity for individual checking is eliminated. Furthermore, all possibility of duplication or alteration of payroll is avoided.

ELECTROMATIC TYPEWRITERS



THE line of Electromatic Typewriters includes all-electric machines for every purpose,—general typing, accounting and statistical work, check writing, billing, order writing, court reporting, and stencil writing. There is a choice of several styles of type on the standard machines.

The entire mechanism is power-operated, an exclusive feature which distinguishes Electromatics in the writing machine field. Every operation is controlled from the keyboard by a 2-ounce pressure on a key, which reduces fatigue to a minimum. Highest quality of work results from a constantly even type pressure. Ease of operation and improved mechanical design produce an increase in speed of as much as 50 per cent. The Electromatic establishes standards for daily volume of typing heretofore unattainable; typing costs are thus greatly reduced.

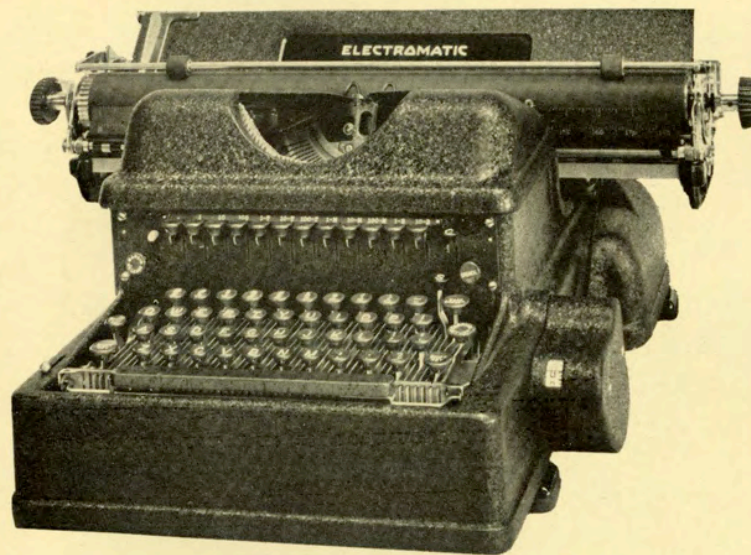


STANDARD TYPEWRITER

THE Electromatic Typewriter for general typing is a surprisingly different kind of writing machine. It is not a manual typewriter to which a motor has been attached, but a machine for which the typewriter mechanism has been designed and built for power operation throughout. The Electromatic brings finger-tip control to every mechanical movement. A 2-ounce pressure on the keys operates the type bars, basket shift for capitals, tabular, escapement, back spacing and line spacing mechanism, and carriage return.

This machine is available with type for check writing, billing, order writing, court reporting, etc. Perfect alignment and sharp type impressions give the finished work an exceptionally attractive appearance.

By using a hard cylinder, thin paper and thin carbon sheets, twenty legible carbon copies can be simultaneously made with pica or larger type.

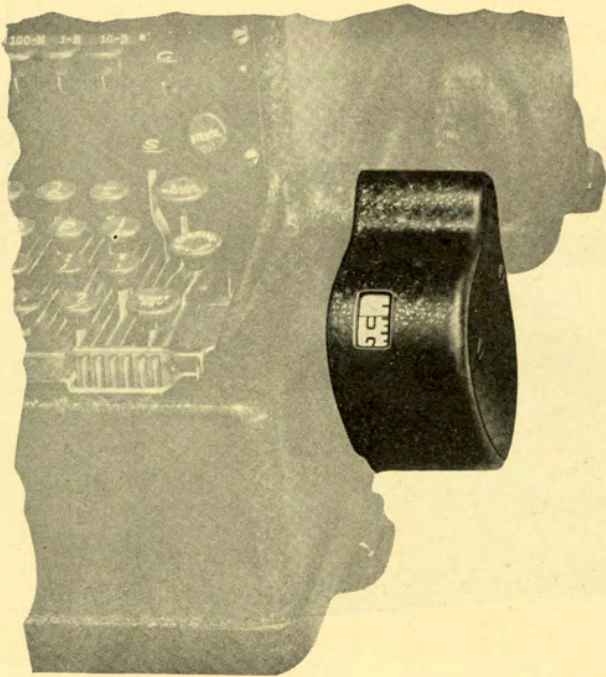


LONG CARRIAGE TYPEWRITER

ELECTROMATICS with long carriages are available for accounting and statistical work. The standard carriage lengths are 16, 20, 24 and 30 inches. The power operation of the decimal key-set tabulars, operated from a row of twelve keys conveniently located above the keyboard, is another exclusive Electromatic feature provided on all models.

Returning the carriage and shifting for capitals on manual typewriters equipped with a long carriage is a laborious operation. This is accomplished on the Electromatic by a mere flick of a finger on a key; the motor does the rest. The all-electric operation makes for a tireless typing rhythm and greatly increases speed.

While Electromatic Typewriters are motor driven, all operations are mechanical. There are no magnets.

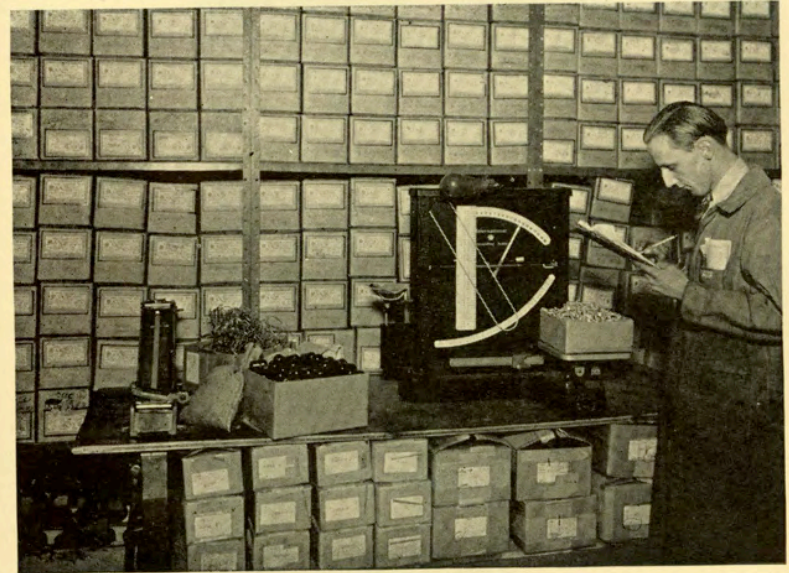


TYPE IMPRESSION INDICATOR

THE Type Impression Indicator is a precision instrument which shows whether the power is set for medium, light or heavy type impressions. The Indicator, which may be added to any Electromatic Typewriter, consists of a white graduated scale cup conveniently located at the right of the keyboard. The typist merely turns the impression knob, with which every Electromatic is equipped, to the indicator reading where experience has shown the best type impression for any particular kind of work is obtained.

All Electromatics for stencil writing are equipped with the Indicator. Stencils written on an Electromatic are invariably uniform for any given reading of the Indicator. Ditto, Roto-print, Multilith, stencils, carbon copies, and similar special applications present no problem when Electromatics equipped with the Type Impression Indicator are used.

INTERNATIONAL INDUSTRIAL SCALES



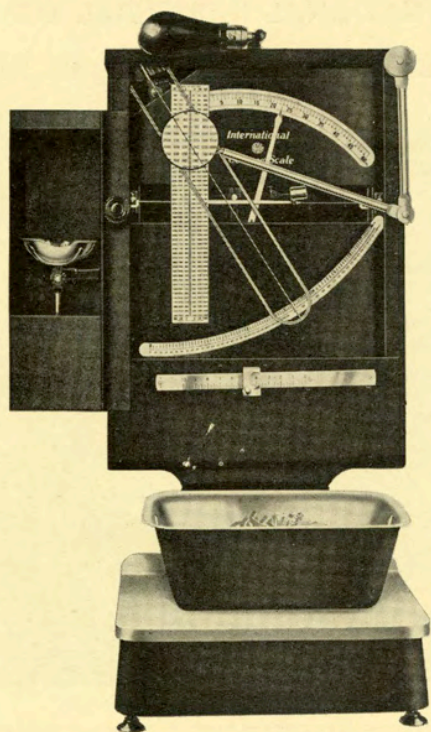
THE products in the International Scale group consist of a great variety of industrial scales, of both general and special types, which meet an extremely wide range of weighing and counting requirements.

When considering the purposes for which they are used, these devices may be divided into two broad classifications:

Scales employed in distribution operations;

Scales employed in manufacturing and processing operations.

International Industrial Scales, like all other International Business Machines, are products of the most advanced engineering skill and manufacturing methods. Careful design and construction are combined with the highest quality of material and workmanship to give these accurate scales a long useful life.

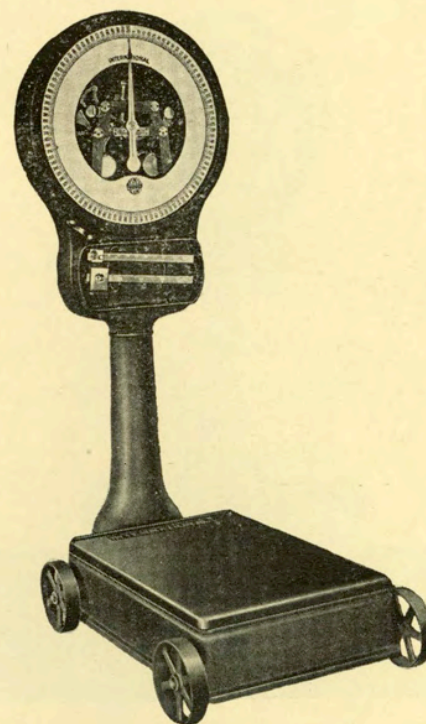


ACCOUNTING SCALE

THIS scale has the distinction of being the only automatic counting scale that indicates in figures on a chart the number of pieces in the load.

No ratio table is needed. The operator makes no mental computations. The pieces to be counted are placed on the platform and a few similar ones in the unit pan. The count is immediately read on the counting chart. The counting operation can be further speeded by using standard unit-weight figures and properly setting the indicator on the unit-weight chart. The total weight of the counted parts is simultaneously shown with the count indication.

This device counts with equal facility pieces, yards, gallons, and other units of measurement. Available in counter and floor models, and various capacities.

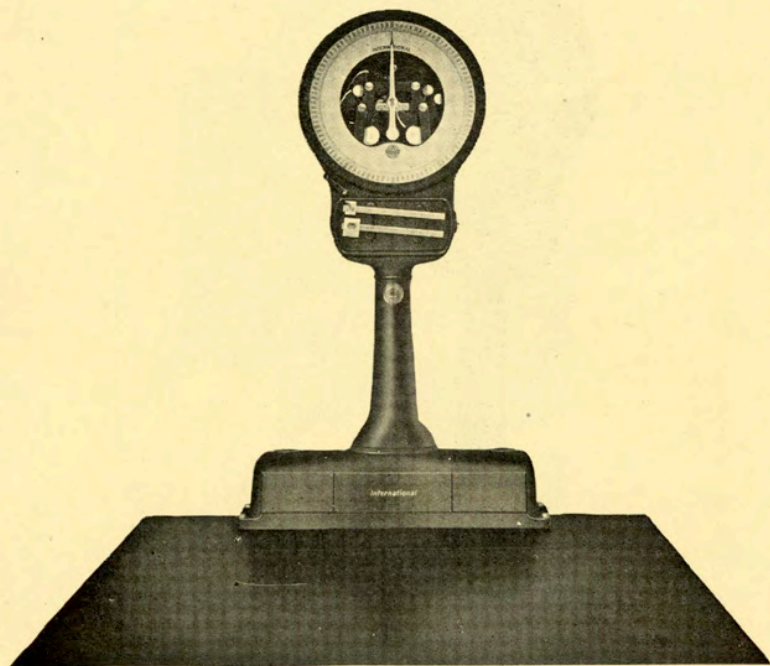


PORTABLE SCALE

THIS type of International Industrial Scale is an important factor in the guidance of those operations designed to protect money invested in material. Its accuracy and speed of operation assure the orderly handling and control of material in factories, mills, warehouses and stores.

The head mechanism of this and the dormant type contains only eleven moving parts, and the ribbon cam tracks are ground accurately to a tolerance of $25/100,000$ inch. A full floating parallel link suspension absorbs all lateral motion before it reaches the pivots of both the portable and dormant types. This prevents the razor-like knife edges, on which accuracy depends, from being bent or sheared.

This type is made with long or short columns, the dial facing in any direction. Various chart and beam capacities are available.

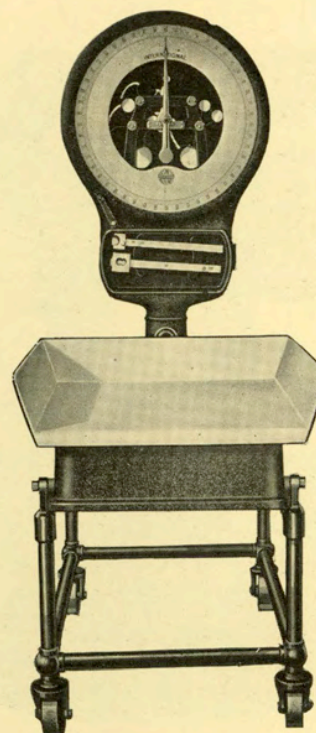


DORMANT SCALE

THE automatic dial platform scale of the dormant type reduces to a minimum the manual operations involved in weighing heavy drafts and assures a continuous accuracy of results.

In this and the portable type, the gear teeth of the rack and pinion are correct in form and spacing to a tolerance of 25/100,000 inch; the material used in pivots and bearings is a special grade of high carbon tool steel; the 1-piece steel platform is heavily ribbed for strength; all mechanism is enclosed in such manner as to insure maximum protection against accidental damage to vital parts; and many parts are gold or chromium plated for protection against corrosion.

The Dormant Scale is furnished in various dial capacities and platform sizes to meet general requirements.

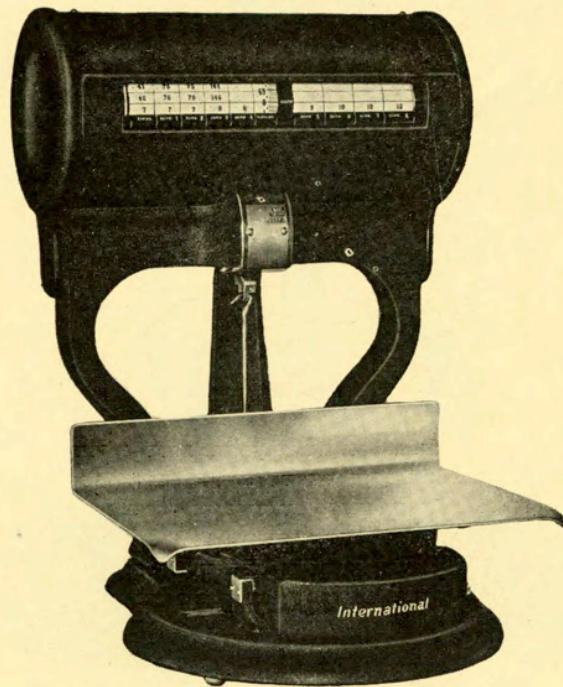


PACKING HOUSE SCALE

THE Packing House Scale was designed to meet the demands of modern methods in large and small packing houses, wholesale and retail markets, commissaries, and hotels. It assures an accurate record of weights of receipts and shipments.

Being of the portable type it can be easily moved to wherever the weighing is to be done. It is a short column scale supported on a rigid pipe stand, the wheels of which can be removed. The height of the levers from the floor is regulated by the stand.

It is furnished with a standard platform and with or without a pan. When used in conjunction with a conveyor system it is supplied without the pan. Various dial capacities are available to meet individual requirements.

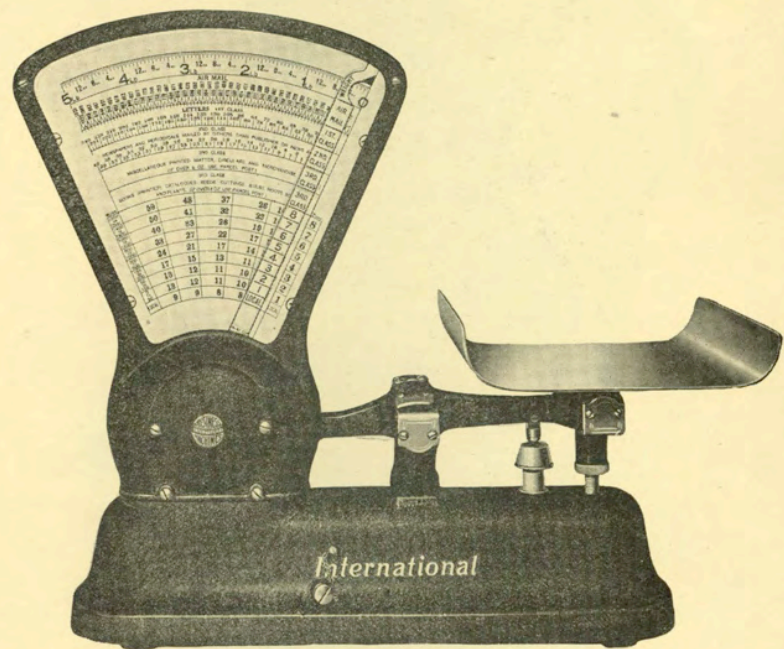


PARCEL POST SCALE

THE Parcel Post Scale is a 70-pound cylinder type scale that automatically computes and indicates the postage required on packages mailed to any zone. It is equipped with a clearly defined, easily read chart that shows both the weight and the postage requirement. It can also be used for general weighing and determining the weights of express shipments.

It is a dependably accurate, sensitive and sturdy scale that guards against overpostage which means waste of money, and against underpostage which means delay and possible failure to meet delivery promises. Its indicating speed and easily read chart permit a rapid succession of weighing to be made. Confusion and delay are thus eliminated from rush hour work.

Four leveling feet correct surface variations on mailing tables. Finished in dark green morocco.

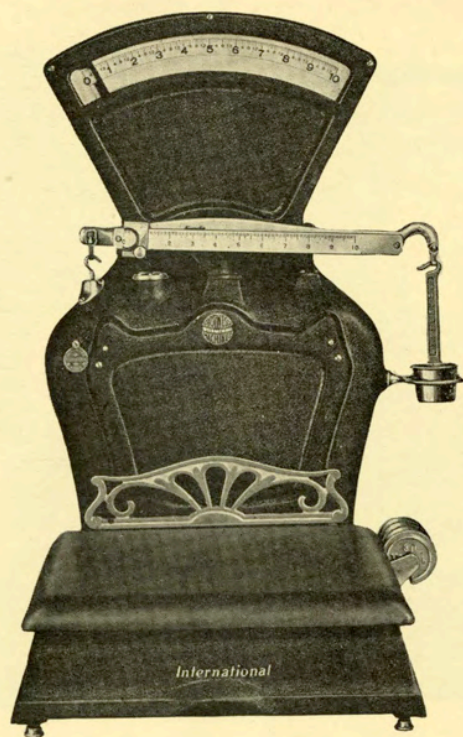


MAILING SCALE

THIS is a combination letter and parcel post scale that automatically indicates the weight and postage charges for air mail, 1st, 2nd and 3rd class mail, and for parcel post matter to all zones. It can be adapted for use with either a 3- or a 5-pound chart. Two other models of larger capacities are available: one is equipped with an 8-pound and the other with a 20-pound chart.

The figures indicating the postage amounts are of such size and are so clearly defined that any reading can be made at a glance.

The accuracy of this scale not only makes its purchase possible through the actual savings effected but, which is more important, protects good-will by eliminating the adverse sentiment created by under-postage.

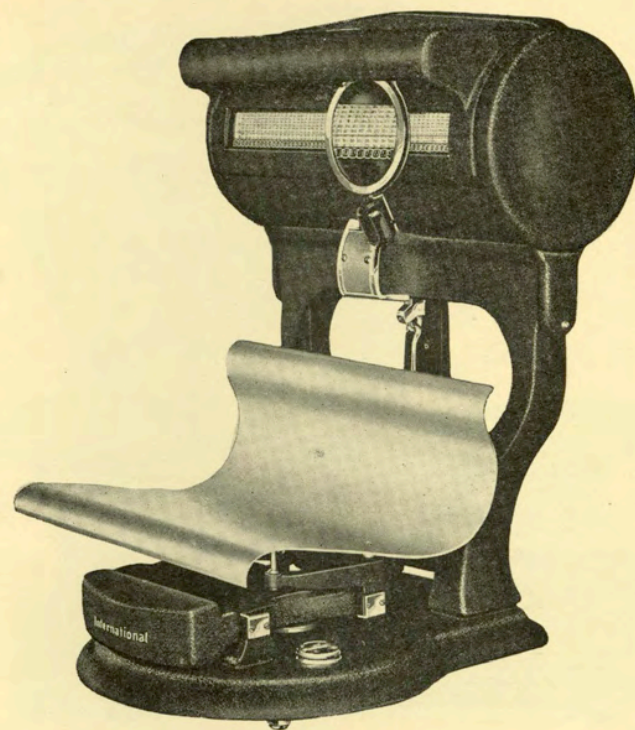


INDUSTRIAL BENCH SCALE

THIS is an ideal weighing device for general use in factories, mills, stock rooms, and receiving and shipping departments. It is also applicable to compounding when either open or secret formulas are used; when required for the latter its tare lever and counterpoise can be completely enclosed in an aluminum housing equipped with a Yale lock. It can also be used as a ratio counting scale.

It is sturdily constructed in all respects. Full-floating suspension links and agate bearings protect the pivot knife edges on which accuracy depends. Various charts are furnished.

A few of the numerous applications to which it is adaptable are: straight weighing, checking, testing, dye mixing, compounding, inventory counting, piece-work weighing, and receiving and disbursing material in and from stores.

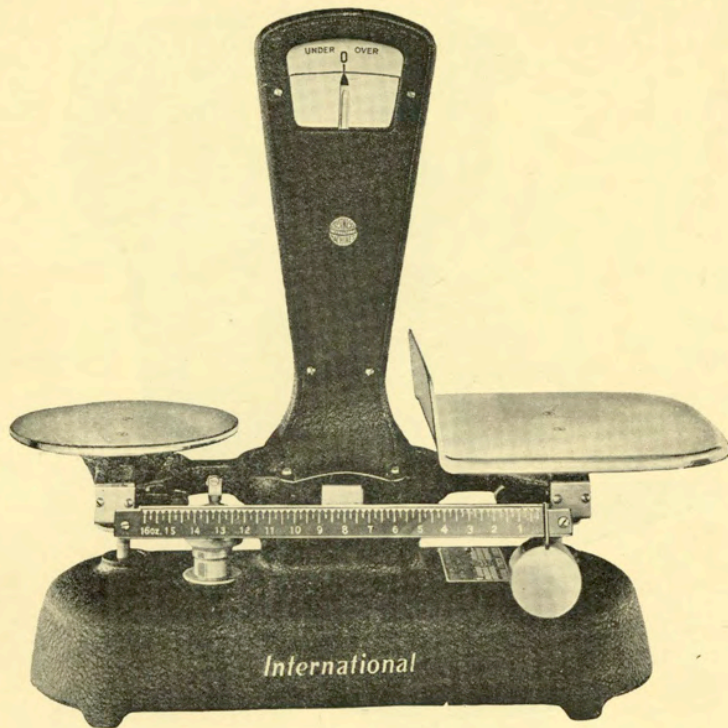


YIELD SCALE

THE purpose of the Yield Scale is to compute the "yield"—yards-per-pound—of rayon, cotton, silk or other kind of piece goods material.

When a bolt or roll of fabric is placed on the platform the weight of the piece, its length, in yards and fractions, and the yield are automatically indicated. Fabrics can be weighed and computed at the rate of 200 pieces per hour by anyone possessing but slight experience.

The scale is equipped with the Magniscope which magnifies the chart figures four times their actual size. Total capacity, 50 pounds. A variation of this scale is used for determining the percentage of loading in piece goods material. It eliminates the use of slide rule, ratio tables, mental and written calculations.

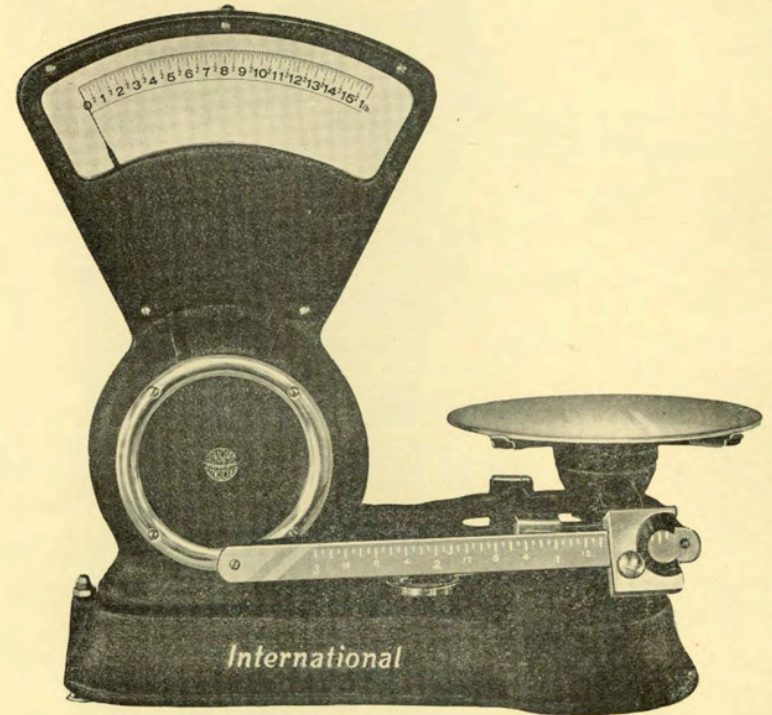


OVER-AND-UNDER SCALE

THIS type of scale has a wide field of applications that covers packaging, checking, testing, etc., when an even-arm scale possessing a high degree of accuracy is desired.

It is used extensively in production lines for packaging goods of uniform weight or quantity. Another important application is that of checking for standard of production such parts as have to be kept within close tolerances as regards weight, balance, or both.

The Over-and-Under Scale is extremely compact. Its light weight enables it to be carried from place to place. It is furnished with a tare beam and loose weights to meet requirements. Various types of charts are available. Its total weighing capacity is ten pounds.

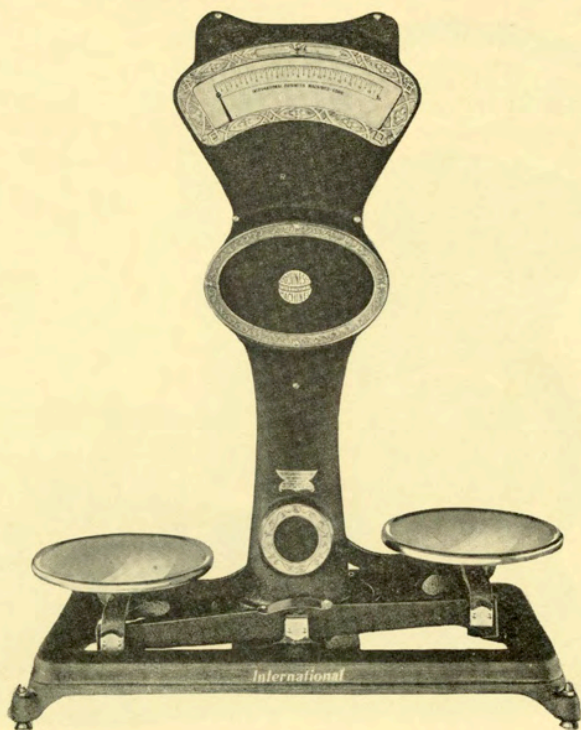


UNEVEN-ARM BENCH SCALE

A SCALE of this type meets the needs of the industrial field for a small instrument capable of answering the demand for great sensitivity and accuracy coincident with the handling of very light drafts.

It handles either dry or liquid commodities with equal facility. In shop and industrial work it is especially adaptable to the tasks of balancing parts, checking production standards, and testing. In the laboratory it is an invaluable asset when it is essential to weigh within close limits. For bench use it lends itself readily to a wide range of standard and special applications.

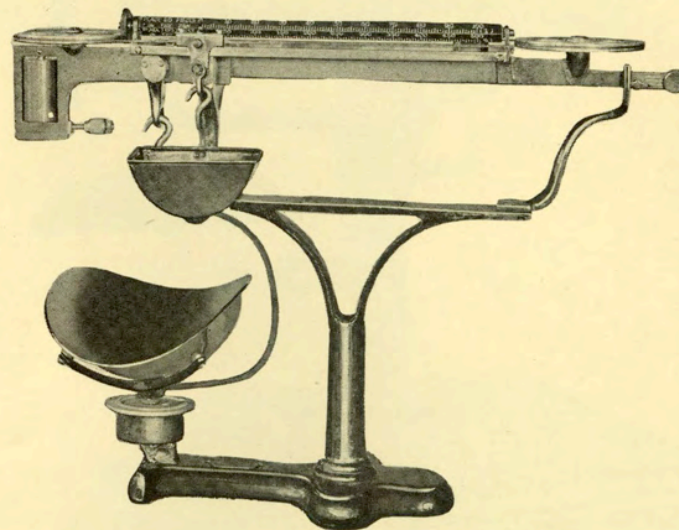
It is equipped with charts of various capacities and types to meet specific demands, including a zero chart for predetermined weighing. The scale can be supplied with or without a tare beam.



EVEN-ARM BENCH SCALE

THE automatic even-arm scale has a wide field of industrial applications in compounding, testing, checking, etc. It is an ideal device for laboratory use in those cases where extremely sensitive scales are required. Another important application is that of weighing precious metals used in manufacturing establishments where scales that can be depended upon for uniform accuracy must be employed.

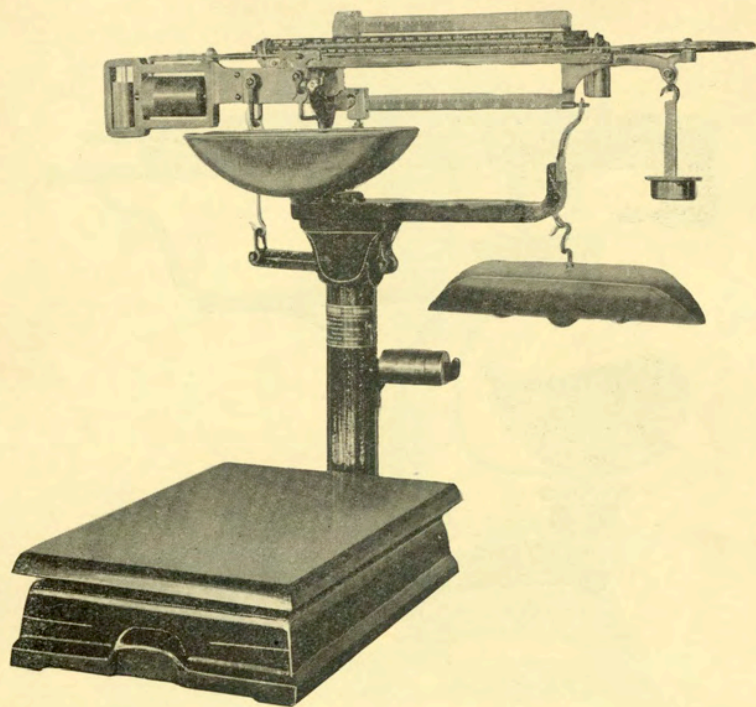
This scale is extraordinarily sensitive because of its construction and the type of lever used. It is furnished in different capacities up to a maximum of 25 pounds, and can be supplied with or without a tare beam, commodity containers, platters, scoops, etc., and with various kinds of charts that meet the specific requirements of the user.

NATIONAL COUNTING AND WEIGHING MACHINE
(Low Capacity)

THIS and the three following devices belong to the group of National Counting and Weighing Machines which are now being manufactured and distributed by the International Scale Division of the International Business Machines Corporation.

The small capacity bench type illustrated above is a semi-automatic machine that has been perfected for weight-counting operations to meet the practical standards of accuracy demanded by modern industry. The counting principle embodied is that of weight ratio between the unit of material in the ratio pan and the bulk of material on the platform.

Material weighing as light as 1/250 ounce can be counted on this machine. It can be equipped to count units, dozens, or gross lots. The load capacity is 5 pounds.

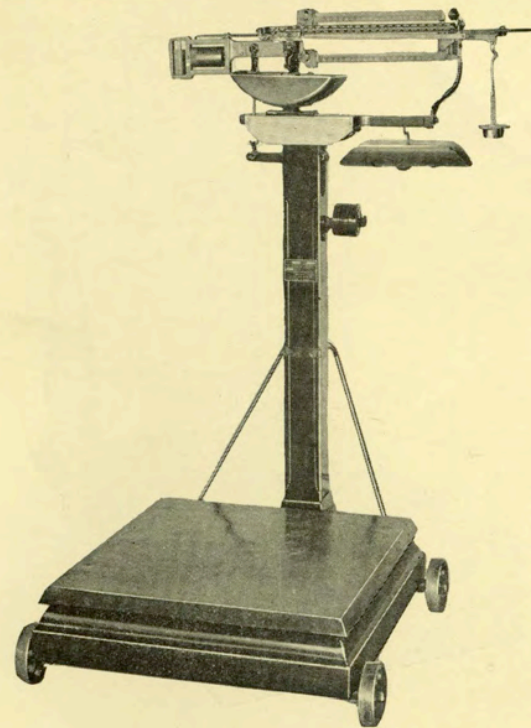


NATIONAL COUNTING AND WEIGHING MACHINE
(Medium Capacity)

A FEATURE possessed by the National machines is their simplicity of operation. Any one, no matter how unskilled in mathematics, can easily and quickly obtain from them an exact count.

They are employed for counting innumerable classes of manufactured material and material in process of manufacture, ranging from the most minute watch and radio parts to large stampings, castings, and drop forgings. The kind of material, the weight and quantities to be counted at one time determine the type that can most advantageously be used.

The large capacity bench type shown above has a maximum load capacity of 300 pounds, and counts parts and pieces weighing 1/4 ounce or more. Other models of varying load capacities are available. Scoops are furnished as standard equipment.

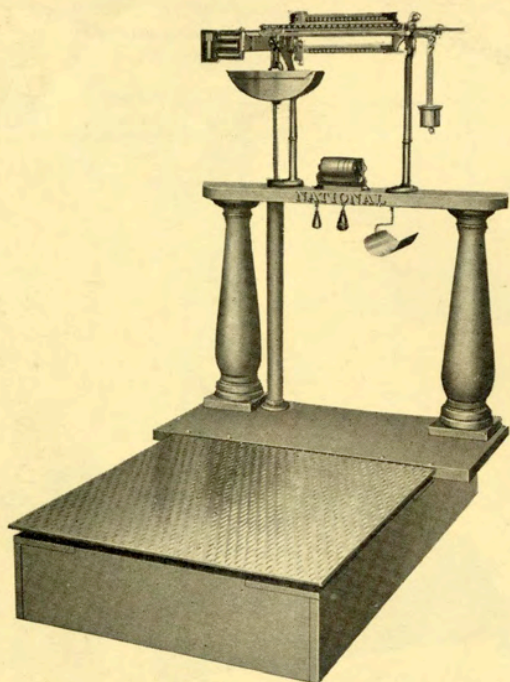


NATIONAL PORTABLE COUNTING AND
WEIGHING MACHINE

THE National Portable Counting and Weighing Machine is a valuable device for use in piece-work operations, for inspection and stock room records, for inventory counting, and in receiving and shipping rooms where parts must be accurately counted and weighed.

The standard model is graduated to count in units, but special machines can be furnished to count by the dozen or gross. Both the weight of a load and the number of pieces in it can be determined simultaneously. Mental and written computations are eliminated from counting operations.

The National Portable Counting and Weighing Machine is available in various models, capacities, platform sizes, equipped either with the standard ratio pan or with an extra large one for counting bulky material. The wheelbarrow model is fitted with an incline.



NATIONAL DORMANT COUNTING AND WEIGHING MACHINE (Self-Contained)

THE National Dormant Counting and Weighing Machine (self-contained) is of pierced-floor construction which provides for the setting of the platform in a recessed section of concrete floors. The platform is installed in the floor where the counting machine is to be used, while the levers and attendant mechanism are fastened to the ceiling of the room below.

This type of National Counting and Weighing Machine is made particularly for factory and warehouse use. It is sturdily built and will render excellent service under extreme usage for a long period of time.

It is made in several models to handle loads of various maximum capacities up to twenty thousand pounds. Units weighing as little as two ounces can be quickly counted with positive accuracy.