

• An Educational Exhibit •

THE STORY of DIAMONDS

presented at

A CENTURY OF PROGRESS

CHICAGO - 1933

THIS exhibit, sponsored by the Chicago Jewelers Association and the Museum of Science and Industry, Jackson Park, Chicago, presents to the public a clear, thorough picture of the great diamond industry. For this effort, cooperation has been secured from the diamond interests in the far-flung corners of the earth.

We begin with a survey of the mining of diamonds, and have chosen as a subject the great Kimberley mine in South Africa; the deepest, oldest and largest of them all. Visitors from the eastern side of the exhibit see first a beautiful diorama of the city of Kimberley, with the old mine pit in the foreground. This yawning abyss, 1300 feet in depth, is one of the deepest man-made holes in the world, and was dug out by the feverish work of thousands of frenzied, sweating diggers, spurred on by the one great thought: **DIAMONDS!** To the west is seen the flourishing city of Kimberley; across the pit is seen the head frame of the shaft, which goes down three times as deep as the pit itself; and far into the distance one looks out over the flat surface of the African veldt, stretching for untold miles toward the interior of that dark continent. Above the diorama, a voice sketches rapidly the history and development of the mine, showing a series of transparent pictures snapped while the pit was in the making.

Next we step into a cage which waits to take us down to the depths of the mine, below the bottom of the pit. A breath-taking descent, simulated by rushing sidewalls, and we are 1540 feet below the surface, in the underground workings of Kimberley mine. In the walls and roof of the tunnel we see the peculiar greenish-blue rock which holds the diamonds jealously in its grip. The tunnel we are in is still being driven; we see a negro workman bend over a compressed-air drill, and the thunderous roar of the machine fills the air as it bores into the solid rock in preparation for blasting. A diamond sparkles in the face of the tunnel, unheeded by the miner who may not see another like it in his lifetime underground. Into the dark recesses of the mine we go, to see men in miniature engaged in the dangerous work of stoping, hollowing out great caverns in their effort to break up the rock and send it to the surface. We are told that

these men are tricky and treacherous, stealing the rough stones in odd and unusual ways if not closely guarded. Unlettered blacks from the jungle tribes, they are easily influenced by unscrupulous dealers to secrete the diamonds in their bodies by swallowing, or by inserting them under the skin in cuts, attempting in this way to smuggle them from the company's property.

Timbers support the rocky roof where necessary, and a pump hums in the next tunnel, removing the deadly water which tends to reduce the hard rock to a fluid mass. At the loading drift, a gigantic black pauses in his labors of filling a mine car with blasted rock, long enough for us to hear that he must repeat his work four hundred times before a little one-carat diamond finds its way into the jewelry store.

We are whisked from the mine in another cage. In the interior of the exhibit proper, we see two strange, unusual machines in operation. An inclined oblong table is shaking from side to side, its surface smeared with crude vaseline. Here the crushed rock, as it comes from the first processes at the mill, is washing down over the table, and in the grease we see diamonds glistening, unmoved by the water of the shaking motion. Why do the diamonds stick to the vaseline, while nothing else will? We do not know; no one knows. Some unsung scientist has discovered this principle and put it to work, and we **DO** know that it is infallible. Behind the wire fence which protects the grease tables and their precious contents is a true bit of Kimberley. The machines were made in the shops of the De Beers Company there; the crushed rock was sent from the Kimberley mill; and the English engineers who explain operations (with the courtesy characteristic of their nation) started on their long journey from Cape Town in the spring. The De Beers Company, mighty English syndicate which controls the South African Mines, has sent this fascinating exhibit for our instruction.

We proceed farther. In the next room are displayed samples of the rocks and minerals from the Kimberley district, models and pictures of the crystal shapes of the diamond. We see a mural painting of the gravel diggers of the Congo, wresting diamonds from the steaming depths of the jungle far to the north of Kimberley;

models of the strange washing machines used in this area, and of the river boats used by the Belgian Forminière Company in developing their holdings.

There are replicas of the famous diamonds of the world, each with a bloody history dating back to lawless days in far-off places.

Largest of all diamonds ever found is the Cullinan, a monstrous stone as big as a man's fist, which was found on the surface at the Premier mine in the Transvaal, one memorable evening in 1905. Two great brilliants cut from this mammoth gem are the largest finished diamonds in the world, and now adorn the trappings of the British King. Also reproduced are the famous "Great Mogul" and the "Kohinoor" stones, together with the following:

The Hope Blue
The Jubilee
The Pigott
The Regent
The Polar Star
The Star of Este
The Dresden Green
The Florentine
The Sancy
The Stewart
The Star of South Africa
The Akbar Shah
Nassak
Shah of Persia
Star of the South
Cullinan
Nizam of Hyderabad
Orloff
Pasha of Egypt
The Matan or Mattam

A safe contains a rare collection of the "outcast" diamonds rejected by the jewelers, and surrounding it is a display of the manifold uses of these hard stones in the industries. We see lathes, a core drill, an oil nozzle, and myriad other machines and tools, each containing a diamond which can not be worn, dented or corroded by any substance known to man.

Here are some of the tasks which these useful stones perform:

Truing grinding wheels.
Truing pistons for automobile and airplane engines.
Drawing wire (through diamond dies).
Drilling into the earth for geological core samples.
Cutting and grinding lenses for spectacles.
Cutting and drilling plate glass.
Etching on metal.
Sawing and drilling stone.
Sound Recording Reproduction.
Turning hard rubber, fiber, celluloid, bakelite, condensite, mica and hard wood.
Spraying oil into furnaces (diamond nozzle).
Balancing delicate scales (diamond knife-edge).
Pivots in watches.
Extruding graphite for lead pencils.
Hardness Testing

Returning to the ornamental, we see a collection of replicas of the crowns of Europe and Asia; the only authentic collection in existence, on which a man spent a lifetime of work and care.

The collection, made in actual size, required many years of intensive work to procure, the collector making 15 trips to Europe and spending, in one case, 18 months to acquire the right to copy some of them. During the negotiations for this work he had to become a 33d degree Mason in order to carry them on. The collection is now owned by Mr. Alfred J. Pitts of Fond du Lac, Wisconsin.

Reproduced are the crowns of England, Spain, Russia, Portugal, Italy, Denmark, Sweden, Norway, Netherlands, Germany, Austria, Lombardy and Siam; the Japanese Emperor's breastplate; the Pope's tiara; and the crowns of the Empress Josephine and Emperor Nero.

We see a diamond cutter at work, plying the strange tools of his difficult trade with scientific precision. Across from him is a quaint cutting machine used in Belgium in the 18th century; and we note that the cutter's tools have changed but little in 200 years, except for the motive power.

Hanging on the walls are instructive, graphic charts. From one we learn that the mines of ancient times were in India; that Brazilian diamonds were paramount between 1730 and 1870; that the South African mines produced 70% of all the diamonds ever found in the world, in the next sixty-one years; and that the Congo diggings have come to the front in the last two years. Another one tells us that the American people buy 70% of the diamonds now produced. Other charts say that 50% of all diamonds go to the industries, and 40% of these are used for "truing" grinding wheels which only the diamond can shape.

Surely the story of diamonds is complete!

But the climax is at hand. In a glass case in the center of the crown room we glimpse, through crowds of excited visitors, a flashing of fire which betokens something of unusual interest.

First let us examine the case itself. Built by the Diebold Safe & Lock Company of Canton, Ohio, it is one of the most secure safes known to modern science. The outer shell of the glass case is 1 inch thick; the inner shell, protecting the disappearing cases, is 1 1/8 inches thick, each of bullet-proof glass. A hard rap on the outer glass will cause the safes to close in 14 seconds and will bring a squad of police, on the run, in a minute and a half. Electric motors operate the motion of the safes; electric time-locks guarantee their safety. A guard peers from a slit in the wall overhead, his rifle at hand and tear-gas control within reach.

Why all the precautions? We secure a position in front of the case and find out. Here is the KING OF GEMS in all his glory! Not one diamond, but **HUNDREDS!** A collection valued at more than two and one-half million dollars; the finest, largest, and rarest collection of gem diamonds ever displayed in the United States.

Here are rough diamonds from the mines, some of them still in the matrix. The largest of these, a monstrous pale yellow stone of 308 1/4 carats weight, glows in the bright light. From the Dutoitspan mine in the Kimberley district, it is valued at \$140,000.00 in the rough,

and is the largest diamond ever brought into North America.

Two rough diamonds found in the state of Wisconsin are noteworthy because of their rarity. They are two out of a half-dozen ever found in the north central states since the beginning of recorded history in this area.

Stretched out on a polished mirror is the celebrated Boule necklace, brought from France. It contains 35 matched spherical cut diamonds and has a total weight of 235 carats. Fashioned by deft Parisian craftsmen, the stones have been joined together by a secret process which does not call for the drilling or marring of any one diamond. The flashing brilliance of this treasure catches and holds the eye for minutes at a time.

Mounted in solitary glory is the great Tiffany diamond. Found at De Beers mine, South Africa, in 1877, its cut weight is 128.5 carats, and its orange-tinted canary color and skillful cutting are a joy to the observer. It is unique among yellow diamonds, being by far the largest ever found, and one of the few to retain its gorgeous color under artificial light and high heat. It is the prized possession of Tiffany & Company, the famous Fifth Avenue jewelers of New York.

But there is another treat in store for the visitor. The Maximilian Diamond, of 42 carats weight, is flashing and flaming from its glass-covered security. Brazilian in origin, it was once the property of the Emperor Maximilian of Mexico. When that unfortunate puppet was executed, his consort, the mad Empress Charlotte, fled with the priceless gem to France. Now the property of Mr. Ferdinand Hotz of Chicago, the matchless purity of its blue-white brilliance is not surpassed by any stone of equal weight in the world.

And so the story of diamonds comes to an end. It is a story which appeals to old and young alike; to the student, the historian, the scientist, and to Mr. and Mrs. Average Citizen; a story which is packed with educational appeal and the romance of the ages.

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