APPARATUS FOR CLEANING OILS.

The apparatus herewith illustrated is particularly designed for cleaning oil which has been used upon machinery and in the processes of manufacturing. The upper tank has an opening in the upper side protected by a strainer, and is for the purpose of receiving and storing the oil to be cleaned. It is placed on a suitable frame above the filtering tank, in order that the oil will be forced through the filters by hydrostatic pressure. The lower tank is formed with a central cylinder, to each end of which is connected a larger cylindrical chamber. The central cylinder or tube is inclosed in a steam jacket; and into each end is inserted a removable perforated tube. The filter consists of a rod extending lengthwise through the lower tank, and wrapped with woolen batting or felt between perforated disks, to form a roll of the same diameter as the disks; between the layers of wool are thin layers of wood sawdust. The four disks are of the same diameter as the tube, and are placed, one at each end and one just with the end of each of the removable tubes. Between the outer disks, at each end, wool alone is used. The upper tank is connected by a pipe, with the annular chamber in one end of the lower tank. Each annular chamber is provided with a waste pipe, and the steam jacket has pipes for the passage of steam.

The oil flows from the upper tank into the annular chamber, where any water which is present collects with the coarse dirt below the perforated tube, and is drawn off through the waste pipe. While in this chamber the oil becomes warmed and more fluid, and passes through the perforations in the tube and the filtering material to the opposite annular chamber, being further heated and liquefied in its passage. In this chamber any impurity or water which may have passed the filter collects in the lower part, and is drawn off through the waste pipe, while the cleaned oil is drawn off through a faucet (not shown in the cut) at the side. When it becomes foul, the filtering material can be removed and easily cleaned. To cause the oil to flow freely, the second chamber is connected with an open pipe extending above the upper tank; steam may be sent through this pipe for the purpose of cleaning the chamber.

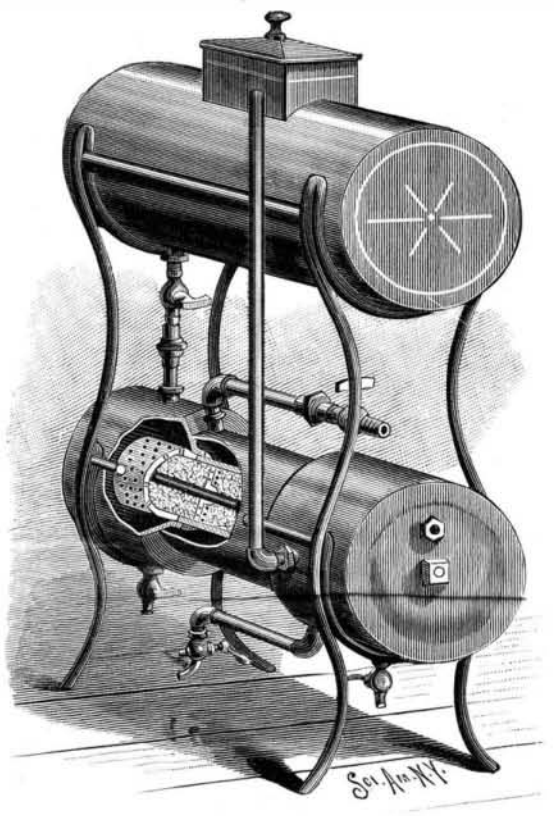
In actual service this cleaner has resulted in a saving of over 50 per cent in the oil used, and the same oil has been passed through it as many as sixty times, and each time being perfectly cleaned. The patentee, Mr. John C. Thornton, P. O. box 302, Mount Vernon, Ind., who will furnish further particulars, has received many letters strongly commending the cleaner.

A PORTABLE PHOTOGRAPHIC CAMERA.

The wonderful impetus which has been given to the practice of photography in consequence of the introduction of the modern sensitive gelatine dry plate, and the increased attraction it offers to all who wish to undertake it, by reason of the simplification of the different processes, is evidence that it will, in time, become very popular, and afford useful and profitable amusement to many.

So easily are the sensitive plates worked that any person of ordinary intelligence may obtain, after a few lessons, excellent pictures. The absence of the old-fashioned nitrate of silver bath, which formerly was the most troublesome article, for the amateur, connected with photography, now simplifies the manipulation very materially, and enables one to readily produce one or more negatives without the danger of soiling the fingers.

Ladies, in view of this advantage, are taking up the practice of photography to a very large extent as a pastime, and by the artistic talent which is so generally inherent in their nature often produce results which few adepts in the art can obtain.



THORNTON'S APPARATUS FOR CLEANING OILS.

It frequently happens, when a long journey is to be undertaken, that a portable camera, small and light, which will not be burdensome, is desirable, and of advantage in permitting the traveler to catch views, as he goes along, of whatever may attract his attention; and it was with a view to provide such an instrument that the apparatus we illustrate in our engravings was invented. If the nature of the article is concealed, so as to appear like something other than a camera, it enables the operator to take a picture without attracting the suspicion of the object photographed, and in consequence lifelike attitudes may oftentimes be easily caught and reproduced. Such instruments have been commonly named "detective cameras."

It will be our purpose to enter into a brief description of the Parsell camera, invented and recently patented by Mr. H. V. Parsell and Mr. H. V. Parsell, Jr., of this city. The primary object of the invention has been to condense the requirements of a camera into as compact a space as possible, and then to conceal its form by incasing it in a small leather covered rectangular box, provided on the outside with a neat leather handle and lock, as plainly indicated in Fig. 6, where it is intended to resemble a lady's reticule, or a case such as physicians frequently carry.

The essential features of the invention are the use of a lens of fixed focus, a peculiar snap shutter working within the lens tube, and released by a delicate trigger or pneumatic device, a miniature supplementary lens in connection with a balanced pivoted mirror for reflecting its image upward against a ground glass, arranged above the main lens, to act as a finder, and a receptacle for holding the extra plates.

Fig. 1 shows a longitudinal section and Fig. 2 a cross section of the box, near the front or lens tube end. The box is made in two parts, the upper portion forming a cover hinged on one side to the lower part. Near the front end of the top of the cover is a small square aperture (see Fig. 3), made directly over the ground glass screen, G, of the finder, and when the box is not in use this aperture is closed by a small metal slide.

Below the ground glass, G, of the finder is seen a pivoted balanced mirror, F, which reflects the reduced image from the small lens upward against the ground glass. The shaft which supports the mirror has a spring projection at right angles, which by slight friction bears against the exterior side of the metal finder box. This construction enables the operator to readily alter the angle of the mirror when it is desired to point the camera upward or downward.

It will be noticed the small lens is located directly over the main or view lens.

A pivoted diamond-shaped leather slide or door covers the main and finder lenses when the camera is not in use, and a similar false fixed leather slide is secured on the outside of the box at the opposite end. The main lens tube is fitted with lenses of the ordinary wide angle type, and is connected and supported at its rear by a conical metal chamber, which is secured to a wood partition provided with a rectangular aperture made to correspond with the size of the sensitive plate that is used.

Located midway between the lenses is a thin metal shutter, B, of peculiar shape (see Fig. 2, a view of the box looking from the rear to the front), which operates through a slot in the tube cut half way through it; the shutter rotates on a pivot supported by a small lug screwed to the outside of the tube. Near the edge of the shutter, in the lens tube, may be seen by the dotted lines a small rectangular aperture, which passes directly in front of the diaphragm of the lens when an exposure is made. Behind the shutter is pivoted an adjustable diaphragm plate, D, which is common to all wide angle lenses, and is used when time exposures are made.

Upon the face of the shutter, B, near the projecting edge next to the interior side of the camera box, are two small metal pins, arranged one above the other in such a manner as to allow the releasing trigger, C, to detain or hold the shutter at a proper point for making a "time" or an "instantaneous" exposure. If the shutter is pushed down until the upper pin comes under the narrow foot of the trigger, it will when released make an instantaneous exposure, as the aperture in the shutter will pass entirely by the diaphragm of the lens. If the lower pin is brought under the trigger, C, the aperture in the shutter will be brought opposite the center of the lens, and a time exposure may be made.

The shutter, B, is operated by a flat steel spring, A, having a slot in its upper end by which it can be passed over the screw peg and retained in position by a thumb

PARSELL'S PORTABLE PHOTOGRAPHIC CAMERA AND TRIPOD.

© 1885 SCIENTIFIC AMERICAN, INC

screw nut, which also increases or decreases the tension. From the screw peg the spring, A, passes over a triangular lug (see Fig. 2), and connects at its lower end to a metal link, which is also connected to the shutter, as shown. Motion is imparted to the shutter by the pushing action of the spring, through the link.

The trigger, C, is held in proper position by a light spring, and may be operated by a button spring, shown at one of the outside corners of the cover of the box, made to resemble all of the other fixed buttons, or by a pneumatic piston, the cylinder and pipe, E, of which may be seen attached to the interior of the front of the box, just below the upper portion of the trigger (see Fig. 2), and connected by means of a simple coupling at the lower side of the box with a short length of tubing and a rubber bulb. This latter arrangement forms a very convenient method of operating the trigger, as by concealing the pipe under the coat the exposure may be made without attracting attention. The outside pipe may be readily detached from the box, and attached to a shutter for time exposures, affixed temporarily to the outside of the lens tube, when desired.

At the rear of the conical metal lens box is placed the ordinary double plate holder, which is secured in position by two upright flat brass springs (see Fig. 1). Behind this are five other plate holders, which completely fill the box. Metal cells are arranged in this space to keep each plate holder in an upright position.

A metal plate is inlaid in the bottom of the box, provided with a screw thread, which allows the box to be supported on a tripod, as shown in Fig. 4, when used for making time exposures.

In taking a picture with the apparatus as shown in Fig. 3, the cover to the lens is first pushed to one side, the cover of the box is then opened, the shutter, B, (Fig. 2) pushed down until the upper pin is caught under the trigger, C. The slide of the plate holder is next withdrawn and the cover closed; the operator, holding the box in the left hand against the person, looks down upon the ground glass of the finder, and the moment the image appears thereon in the right position, presses with the index finger of the right hand the spring button on the corner of the box, thereby releasing the shutter and making an instantaneous exposure; the cover of the camera is then opened, the slide inserted in the holder, and a fresh plate brought into position.

An important advantage of the form of shutter adopted, is the small size and its rapidity of operation. The lens is arranged at such a focus that objects a few feet or at a great distance will be equally sharp; the size of picture is 2½ inches square, and may readily be enlarged. The weight of the camera when loaded with six plate holders is only 2¾ pounds.

The tripod, shown spread out in Fig. 4, is made of wood in the form of a large cane as shown, when closed up, in Fig. 7, and it is divided equally into three triangular sections, the shape of which is plainly seen in the lower end of the section in Fig. 5. The upper end of each triangular section is made hollow, and is bound with metal, to receive the sliding metal legs which support the head of the tripod. A hollow headed milled screw passes through the metal band on each section and secures the metal leg or rod at any height, similar to the usual plan of adjusting sliding tripod legs.

Fig. 5 shows a larger view of the construction of the head of the tripod; the screw at the top of the head fits into the screw plate at the bottom of the camera; the head itself is free to revolve in any direction on the spindle in the plate to which the tripod metal legs are attached, but may be secured in any position by a set screw shown at one side under the head; this allows the camera to be readily turned and secured in any desired position after the tripod is once leveled.

A thin metal cap having the form of the head of a cane, and provided with bayonet slots at the bottom, fits over and conceals the head of the tripod as shown. A similar cap also protects the bottom spurs of the tripod legs; the two caps thus convert the tripod into a cane, as shown in Fig. 7.

Equipped with a light portable camera and a convenient tripod such as we have described, the amateur photographer can, with considerable comfort, travel about unnoticed, and easily obtain instantaneous views and pretty bits of scenery. What has sometimes been considered as laborious work is thus converted into pleasure, and without realizing it many interesting events and scenes are recorded in such a way as to be of much value and usefulness in after years.

Further information regarding the apparatus can be had from Wm. T. Gregg, No. 318 Broadway, New York city, N. Y., who has also the exclusive control of the invention for the United States.

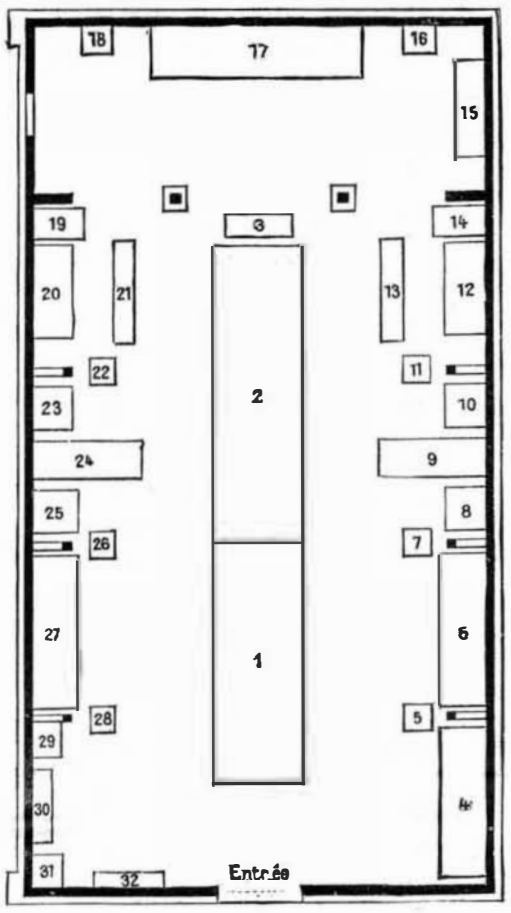


Fig. 1.—PLAN OF GALLERY OF PALEONTOLOGY PARIS MUSEUM

THE NEW PALEONTOLOGICAL GALLERY OF THE PARIS MUSEUM.

The collections of fossils of the Paris Museum of Natural History have hitherto never been brought together in a special gallery, for the very simple reason that paleontology is, so to speak, a new science in France, and one whose autonomy was not recognized until 1853, the epoch of the erection of the chair of paleontology, which was first occupied by A. D'Orbigny.

The existence of paleontology was not foreseen at the time of the organization of the Museum by the National Convention. About a century ago fossils were considered as petrifactions appertaining to mineralogy. Cuvier, through his admirable researches on fossil bones, laid the foundations of our science, but he studied these objects from the standpoint of comparative anatomy. Later on, Blainville created the word *paleontology*, and from the day that this science had a name its progress and its popularity have never ceased to manifest themselves. It may be said, then, that paleontology is doubly French in its origin.

Nevertheless, the fossils remained distributed between the different chairs of the Museum. The vertebrates were in charge of the professor of comparative anatomy, and the invertebrates in charge of the professors of geology, malacology, and entomology. The founding of a chair of paleontology in 1853 did not improve this situation much, since the appointee had charge of no public collection. But in 1879 a considerable change supervened, for it was then decided by the Minister of Public Instruction that the fossil vertebrates should be placed under the direction of the professor of paleontology, Mr. A. Gaudry, who was naturally designed for such a position through his splendid work on the extinct faunas.

This learned professor, seconded by Mr. Fremy, the Director of the Museum, then formed a plan to bring together in one gallery those fossils which were most remarkable, and which could not be placed in glass cases on account of their large size. These interesting specimens were scattered through the galleries of comparative anatomy and geology, and the laboratories, where they were scarcely accessible to the public

This new gallery was organized in a few months, and was opened on the 17th of March, 1885. When we enter the new hall, we find ourselves in the presence, first, of two enormous skeletons—that of the *Megatherium cuvieri* (No.

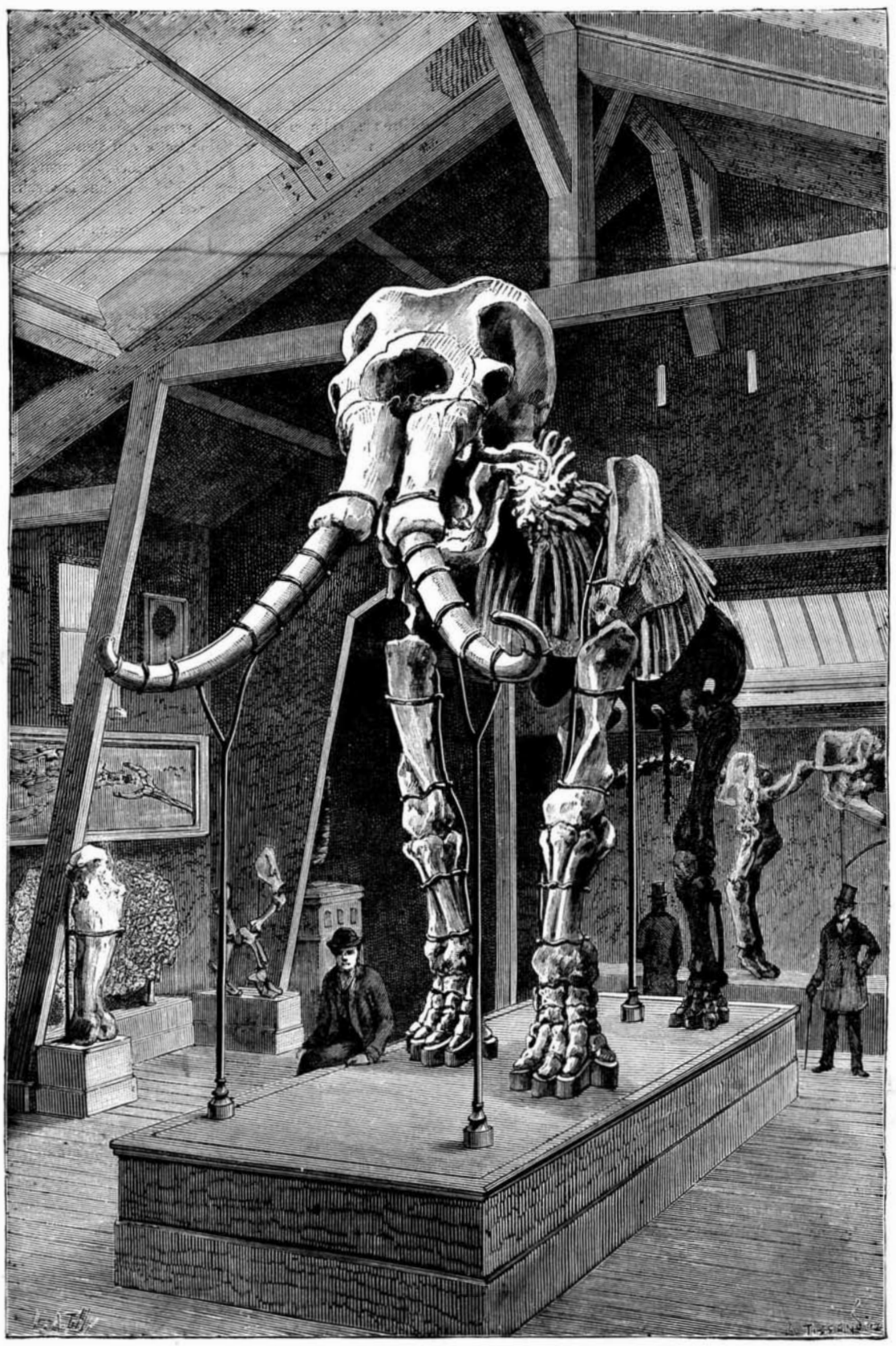


Fig. 2.—SKELETON OF THE DURFORT ELEPHANT.

© 1885 SCIENTIFIC AMERICAN, INC