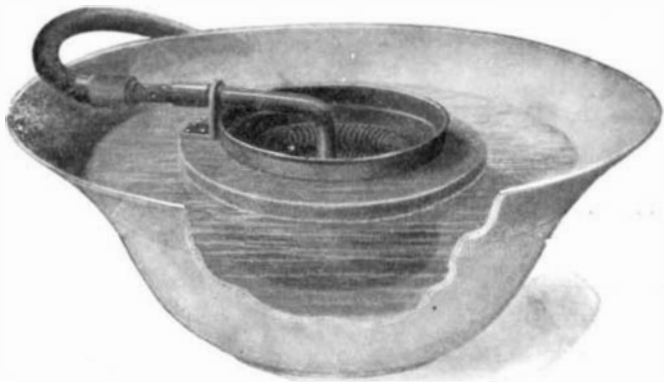




A PORTABLE WATER HEATER.

A very simple portable water heater has recently been invented which is intended particularly for warming the water in a bathtub or a basin. The heater is arranged in the form of a float which floats on the water and can thus be moved around to different parts of the tub as desired. Our illustration shows the device heating a basinful of water. It consists of a copper shell or bowl fitted into a wooden ring. The latter affords sufficient buoyancy to float the device. A gas burner is supported on the float and consists of a pipe bent to project into the copper shell. The open end of this pipe terminates near the bottom of the bowl. At its outer end the pipe is formed with a number of perforations which permit an inflow of air to increase the temperature of the flame. The quantity of air admitted is governed by a sleeve on the pipe, which may be moved to cover any desired number of holes. A flexible tube connects the burner with a gas fixture. The flame of the burner is directed against the bottom of the copper bowl, heating the thin shell to a high degree of temperature. To confine the heat within the bowl, several rings of coiled wire are placed within, as indicated in the engraving. These coils effect a great saving of heat,

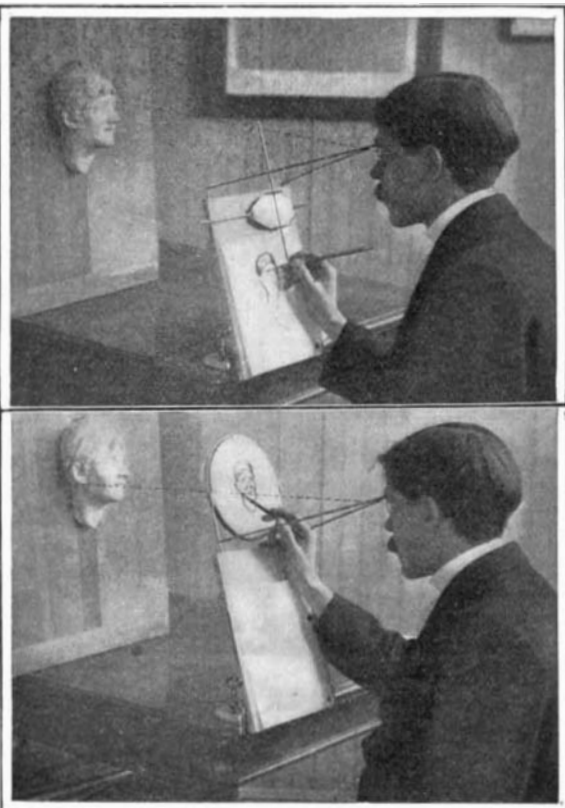


A PORTABLE WATER HEATER.

so that the water surrounding the heater is raised to a high temperature at an economical consumption of gas. The value of this device will be particularly felt in summer time when the cooking is done ordinarily on a small gas stove instead of a coal range, and it is consequently difficult to obtain a supply of hot water. With this novel heater a basinful of hot water may be obtained in a few moments and at short notice enough can be heated for the bath. A patent on this improved heater has just been procured by Mr. Charles M. Daly, of 538 West 29th Street, New York city.

A NOVEL SKETCHING DEVICE.

In the accompanying engraving we illustrate an excellent sketching device for the use of amateurs. Two forms of the invention are shown—one in which the drawing is made directly on the drawing surface, and



A NOVEL SKETCHING DEVICE.

the other in which a pantographic attachment is used. The latter is shown in the upper illustration. The device consists of a drawing board which may be fastened to the edge of a table by means of a clamp. Attached to the drawing board is a wire frame which, at its outer end, is bent into a ring to which the eye of the artist is applied. The pantographic device comprises a horizontal fixed rod which carries a metal plate. The plate is free to move laterally on this rod. The upper and lower corners of the plate are bent over to form bearings for a vertical rod. To the lower end of the vertical rod a pencil is attached and at the upper end a pointer is formed. The pointer and the pencil are thus given universal movement, and any outline traced by the former will be exactly followed by the latter. In order to make the pointer clearly visible to the eye, it is colored red or some other bright color. In use the artist rests his head against the eye frame, and looks through the eye piece at the object that is to be sketched, tracing its outline with the pointer as indicated by the dotted line in the illustration. This guides the movements of the pencil, causing the latter to reproduce on the drawing paper the image seen by the eye. The object may be drawn larger or smaller by moving it nearer to or further from the pointer. The second illustration shows the drawing board with the pantographic attachment removed. Secured to the upper end of the board is a piece of transparent fabric stretched tightly over a ring. In this instance the artist with his eye to the eye frame looks through the fabric at the object, and sketches directly on the fabric the image intercepted thereby. When completed the drawing may be transferred to a paper surface, or may be retained on the fabric, which, owing to its texture, gives a soft, pleasing effect. Mr. C. M. Daly, of 538 West 29th Street, New York, N. Y., is the inventor of this novel sketching apparatus.

Brief Notes Concerning Patents.

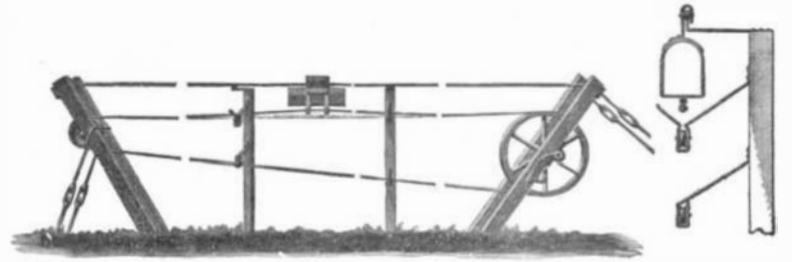
A new enterprise now being launched in Texas, where it is said eight plants will be operated, is the manufacture of a new artificial fuel known as "carbonettes," which is really a compressed mixture of lignite, such as is found in abundance through Texas, and some of the cheap by-products of petroleum. It is very hard and said to be smokeless, odorless, and dustless and to have a calorific value equal to coal from the anthracite fields. In cost it is said to represent a great economy over coal, as it can be manufactured at and sold profitably at a price far below that of coal or wood. The principal of these plants will be established at Galveston, where it is expected to build up a large trade in supplying fuel for steamers.

Tobacco smoking is such a common habit that any novel way of providing a simple, inexpensive, and effective device, by which a cigar or cigarette may be quickly and conveniently lighted, is eagerly looked for. A recent invention has been patented, which may have some advantages. It is called a self-igniting cigar. The pointed end of a match is inserted in the outer end of a cigar. The match head extends slightly beyond a paraffine coating applied to the end of the cigar. A narrow band of paper is also added, for the purpose of protecting the cigar end from damage when striking the match. This wrapper projects beyond the end, and forms a flange and receptacle to contain the tip of paraffine. To light the cigar the match head is struck upon some rough surface until it ignites. This starts the paraffine, which in burning ignites the end of the cigar. The burning outlasts the match head, and produces sufficient flame. It is a question whether the mechanical aid this device affords will be offset by the impregnation of the weed with odors of burnt paraffin, the paper wrapper, and match—a combined scent likely to be much stronger than that of the ordinary match or light now in use.

SIMPLE MAIL-BOX DELIVERY DEVICE.

The establishment of the rural free-delivery system has created a demand for some convenient method for transferring mail from the mail box to the house, and vice versa, because these mail boxes must be situated along the public highway, which is often some distance from the house. One of the most recent inventions along this line is shown in the accompanying engraving. It consists in a mail box which is carried on a trolley wire, and may be moved along this wire to the roadside and back to the house, as desired. For purposes of illustration, only the two ends and an intermediate portion of the system are shown in the engraving. At the roadside a pulley is mounted between two posts which are imbedded in the ground, and an endless belt passing about this pulley extends to a point adjacent to the house, where it passes around

another pulley mounted between a similar pair of posts. The latter pulley is shown at the right in the engraving. A number of posts are set up along the belt line, and carried in brackets fastened to these posts are a number of guide pulleys, which support the belt. A stationary trolley wire is stretched from end to end of the system, and is also supported by brackets on the posts. Traveling on this trolley wire is a sim-

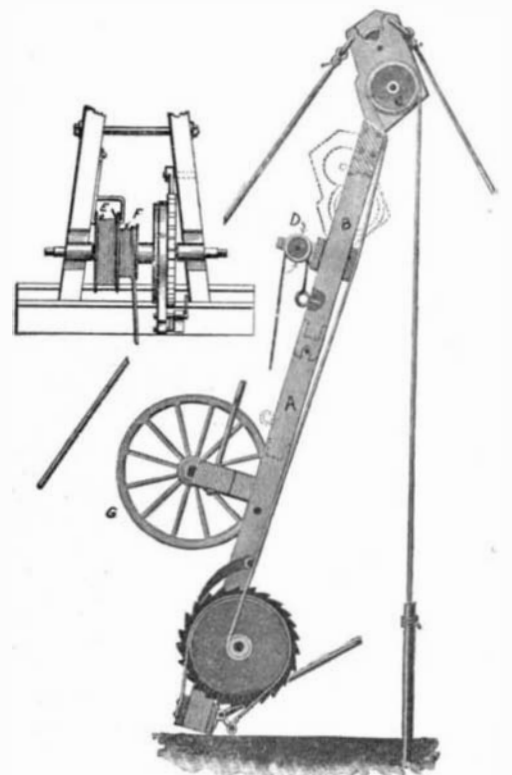


SIMPLE MAIL-BOX DELIVERY DEVICE.

ple carrier, in which the mail box is placed. The carrier is bent around the mail box and bolted to the endless belt, so that by turning the crank of the larger pulley, one can convey the mail in either direction along the trolley wire. Messrs. W. M. Shelton, C. B. Manning, and E. R. Cheney, of Gypsum, Kan., are the inventors of this improved mail-box delivery device.

PULLING MACHINE FOR OIL WELLS.

A patent has recently been granted to Messrs. William A. Worrell and Leslie Fish, of Van Buren, Ind., on an improved pulling machine for use in connection with the sinking and operation of oil wells. The principal objects of the invention are to provide a portable frame which can be readily taken from one well to another, with means for pulling and for lowering the rods and tubes and means also for simultaneously lowering a tube and raising another in position to be lowered into the well. Our illustration shows a longitudinal section through the machine which has been raised to operative position. The main frame, A, carries a movable extension, B, which normally occupies the position shown in broken lines, but may be extended to lift long pipes by means of a rope passing over the pulley, D. The latter is carried by the main frame and the screw eye to which the rope is attached is threaded into the extension beam. When raised, this beam is held by a bolt in the main frame, which engages a slot in the end of the beam. The machine



PULLING MACHINE FOR OIL WELLS.

is normally carried on wheels, G, but when in use is tipped up on end and supported by guy wires, as illustrated. The pipe is raised by a rope passing over the pulley, C, and attached to the drum shaft at the lower end of the main frame. This shaft carries a brake wheel and two cable drums, E and F. A metal band is passed around the brake wheel and may be tightened by depressing a lever. The cables on the drums, E and F, are preferably wound in opposite directions, so that the unwinding of one will wind up the other. A team of horses is attached to one of the cables, so as to turn the drum shaft and draw out the pipe. When a coupling is reached, this is uncoupled and the pipe is lowered to the ground under control of the brake. A pawl on the main frame engages a ratchet on the drum shaft and prevents the pipe from falling back into the well in case any of the cables breaks while the pipe is being raised.