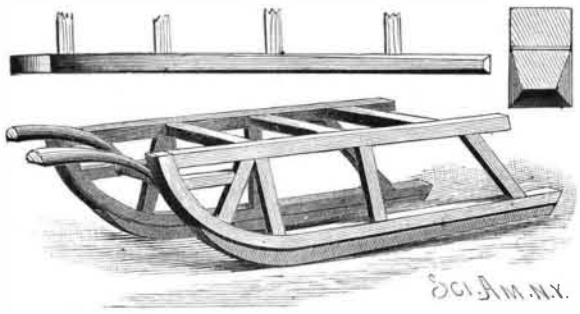
IMPROVED SLEIGH.

This invention, which has been patented by Mr. Samuel T. Beswick, of Blair, Wis., consists in a diverging construction of the runners relatively to the line of draught. The runners are turned up in front as usual, and are fitted with suitable metal shoes, which are made of tapering width on their bases and with shelving sides throughout the greater portion of their length, being narrowest at their rear ends. The forward portions of the shoes may be made of equal width so that their sides will be parallel with the central line of draught, or the taper may, if desired, extend the

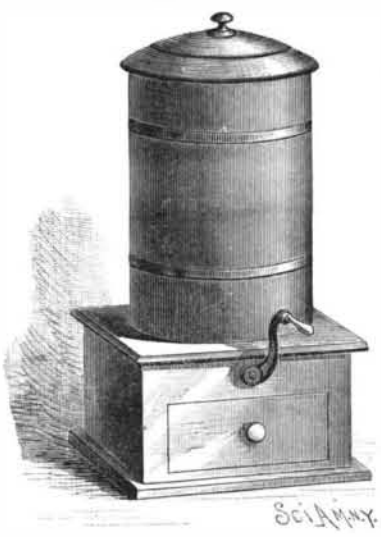


BESWICK'S IMPROVED SLEIGH.

whole length of the shoes. In some cases it will be found advantageous to make the base line or surface of the shoe taper upwardly in a backward direction throughout the length of the side taper. This construction of the shoes reduces the friction and allows the rear end of the sleigh to sink somewhat, and so prevent the front end from cutting the snow too deep; the sleigh can also be turned easier, and will keep to the track more readily.

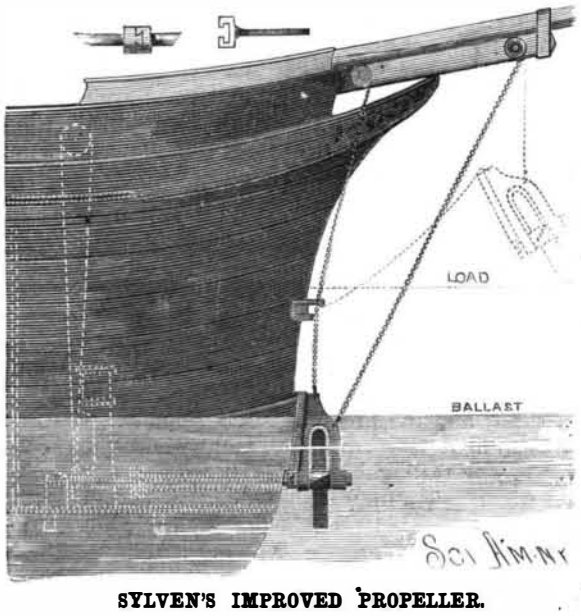
FLOUR CHEST AND SIFTER.

The accompanying engraving represents a flour chest and sifter invented by Mr. H. G. Filson, of New Cumberland, W. Va. Extending across the mouth of a conical hopper secured in the receptacle near the middle is a bar, which supports a central stud carrying a bevel gear wheel formed with two or more arms, and carrying upon its upper surface a sieve, which is near but not in contact with the mouth of the hopper. This gear wheel meshes with a horizontal shaft, one end of which extends through the side of the receptacle and is provided with a crank handle. In the bottom of the receptacle is a drawer, and on the top is fitted a cover. The receptacle is designed to contain a supply of flour. When flour is needed the crank is turned, thereby rotating the sieve and discharging a quantity into the drawer, from which it is taken for use. The cross bar not only serves as a support for the stud, but also as a stirrer for breaking up lumps of flour and causing it to be more rapidly sifted.



IMPROVED PROPELLER.

The propeller herewith illustrated can be attached to either wooden or iron vessels, and is designed as an aid for sailing vessels in a calm. The screw is mounted upon a short shaft, journaled in the lower part of the frame. The inner end of the shaft is formed with a clutch, which connects with a similar clutch on the outer end of a shaft journaled in a bearing in the keel and in a pillow block located within the vessel. At the perpendicular edge of the frame is a T-piece fitting in a flanged guide attached to the keel for holding the propeller in proper position. When not in use, the propeller is carried upon deck, and is raised and lowered by means of two chains arranged as shown in the engraving. A simple device is provided for guiding the T-piece of the frame, so that it will easily enter the guide, while a lip formed at the bottom of the socket prevents the propeller frame from dropping too far. The inner end of the main shaft is provided with a pulley, over which passes a belt leading over a pulley on deck. When the latter is revolved by any suitable hand or other power, the screw is turned to propel the vessel. A stop spring is adapted to spring over the upper end of the T-piece, and lock the propeller in the socket. This spring may be drawn out to release the propeller, by means of a cord reaching to the deck. It will be noticed that when the propeller and its frame are lifted on board, nothing is left in the water to make any resistance or cause fouling.



SYLVEN'S IMPROVED PROPELLER.

This invention has been patented by Mr. W. T. Sylven, whose address is care of Messrs. William Cramp & Sons, Beach and Norris Sts., Philadelphia, Pa.

REVOLVING TARGET.

The revolving target herewith illustrated is the invention of Mr. W. H. Adams, of Fort McIntosh, Laredo, Texas. Framed into the main post, which is mounted upon an upright metal spindle secured to the base of the target, are cross arms of equal length, and the ends of which are slotted to receive the upper and lower horizontal arms of the target frames, to which are secured the plates on which the bull's eye and rings of the target are painted. The revolving portion of the target is locked in place to hold one of the plates in position to receive the shot, by a spring secured upon the base, and provided with a rod by which it may be depressed to disengage the target by a foot bar extending to a shelter behind which the target tender stands. This target is easily constructed and durable, and the frames may be readily removed and replaced when the plates require renewal.

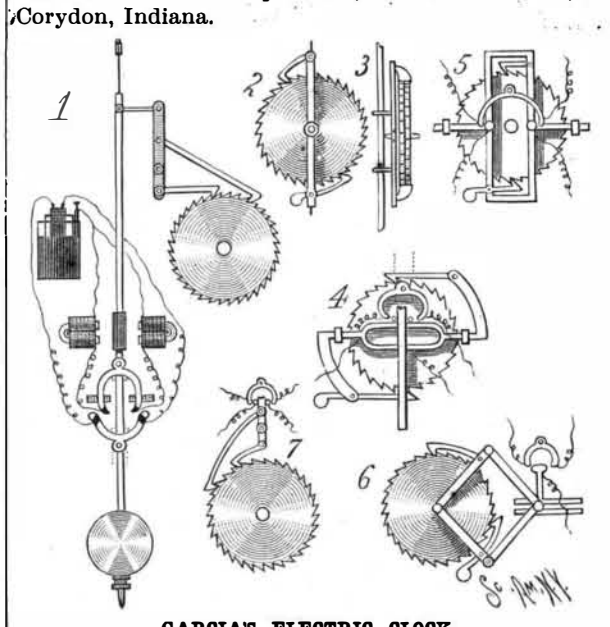
ELECTRIC CLOCK.

The clock herewith illustrated is constructed with two toothed wheels on the same shaft, one wheel having one or more teeth than the other, and both being operated by the same pawls, so that one is moved faster than the other; and by means of hands the relative positions of the wheels and the time are indicated. On the pendulum rod, Fig. 1, is an armature interposed between two electro-magnets connected by wires with one pole of a battery and with contact pieces on the ends of the shanks of a U-shaped anchor pivoted to swing on a suitable fixed support. These contact pieces are interposed between and arranged to be struck by contact plates near the free ends of an inverted anchor, also pivoted on a support, the plates being connected by wires with the other pole of the battery. In the shanks of the upper anchor are adjustable screws, which are alternately struck by the swinging pendulum rod.

With this construction, when the pendulum starts to swing to the left, it strikes the left-hand screw, and throws the corresponding contact piece on the upper anchor against the contact plate on the lower one, thereby closing the circuit through the left-hand magnet, which attracts the armature and gives the pendulum an impulse to the left, accelerating its motion slightly, until the contact piece slides off the plate and on to the non-conducting tip of the lower anchor. The circuit is thus broken and the pendulum allowed to swing by its own gravity to the right, when a similar impulse is imparted to it. The motion of the pendulum is thus maintained constant.

Attached to the upper part of the pendulum is a rod secured to a lever provided with two pawls connected one above and one below its pivot. The motion of the pendulum causes the pawls to engage alternately with the teeth of both wheels, which are thereby revolved. These pawls may be arranged in different ways, as shown in Figs. 2, 4, 5, 6, and 7, Fig. 3 being an edge view of Fig. 2. The pawls act alternately, and each one always acts upon both wheels, so that when one wheel is revolved the other is revolved with it; and as one has less teeth than the other, it is evident that when the larger wheel has completed one revolution, the smaller has made one revolution and a few teeth more. The numbers of the teeth are such that the relative movements of the wheels will take place in times corresponding to the subdivisions of time into hours, minutes, and seconds.

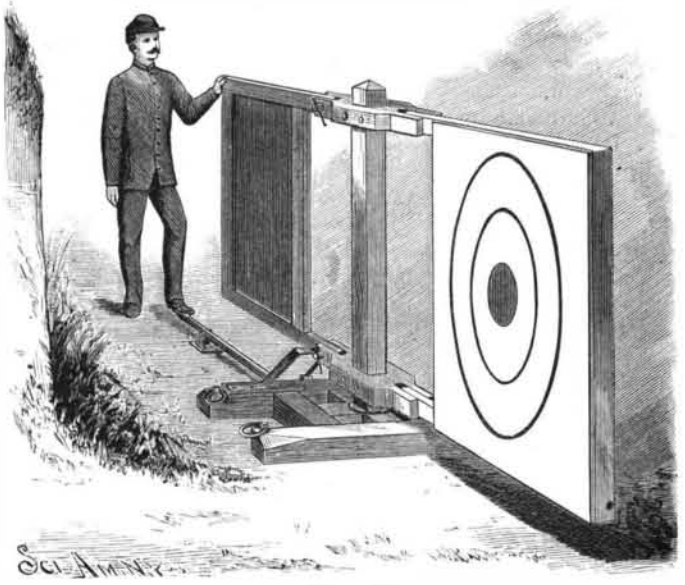
This invention has been patented by Mr. D. T. Garcia; particulars can be obtained from Mr. G. Castanos, of Guadalajara, Mexico.



GARCIA'S ELECTRIC CLOCK.

Dental Caries in Bakers.

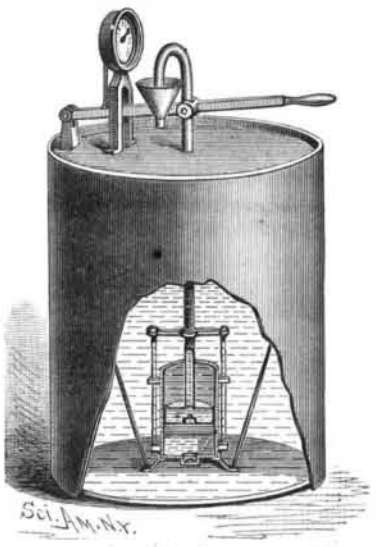
Professor Dr. Hesse, of Leipsic, in the *Deutsche Monatschrift*, points out the deplorable condition of the teeth of bakers, and says that he is often able to tell the profession of the patients by the condition of their teeth. The caries is soft and rapidly progressive. The principal parts attacked are the labial and buccal surfaces of the teeth, commencing at the cervix and rapidly extending to the grinding surface. The approximal surfaces do not seem to be attacked more than in other patients. He believes the disease to be due to the inhalation of flour dust, the caries being caused by the action of an acid which is formed in the presence of fermentable carbohydrates.



ADAMS' REVOLVING TARGET.

MEASURING PUMP.

The measuring pump herewith illustrated will pump one-half a gallon or any desired fraction of that amount at each stroke. The pump is secured at the bottom of the tank by braces, and is provided with a hollow piston head and tube which is connected to the operating lever placed on top of the tank. To this lever is connected, by a rod, a measuring device or register, so that the up and down movement of the lever will move the pointer in front of the graduated dial a distance bearing a certain ratio to the distance of movement of the lever. The dial is graduated in pints, quarts, and gallons, according to the capacity of the pump. The mechanism for operating the pointer is very simple in construction, and reliable. The upper, curved end of the pipe is attached to a funnel for directing the flow of liquid into any receptacle. To draw any desired quantity of liquid, the lever is raised until the pointer indicates the desired quantity on the dial, when the lever is simply forced down, which will cause the exact quantity to be thrown out by the pump.



Further particulars concerning this invention may be obtained from the patentee, Mr. W. B. F. Sims, of Corydon, Indiana.

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