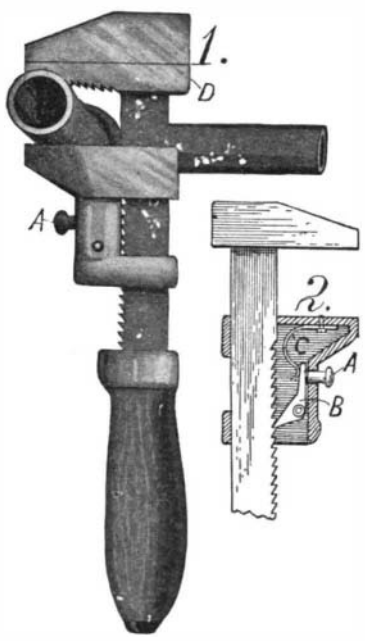
Patent Department

COMBINED PIPE WRENCH AND MONKEY WRENCH.

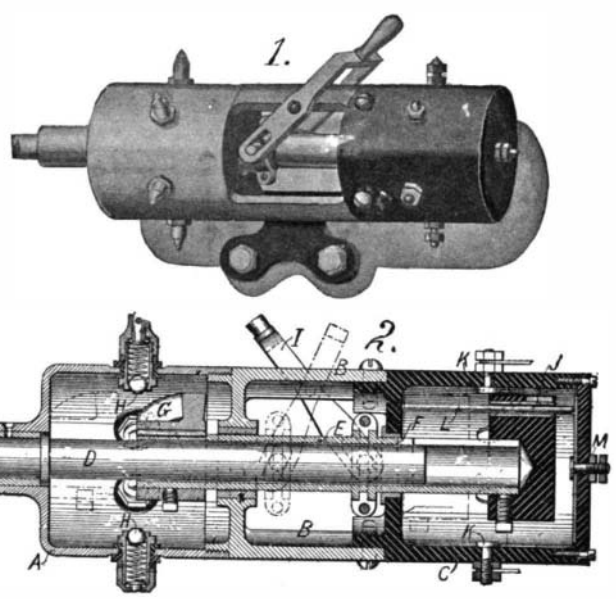
The wrench illustrated herewith differs materially from the ordinary in the fact that the usual screw mechanism is entirely dispensed with, and the jaws may be instantly opened or closed to any desired extent. The wrench is also provided with a removable jaw piece, which may be quickly applied to adapt it for use in gripping pipe or round work. Fig. 1 illustrates the wrench with the pipe-gripping attachment applied thereon, while Fig. 2 shows the wrench adapted for ordinary use. In this view the lower jaw is cut away to show the interior details. It will be observed that the ratchet mechanism with which this wrench is equipped in place of the screw mechanism is controlled by a button *A*, that projects from the forward face of the lower jaw. When the button *A* is depressed, the dog *B* is disengaged from the ratchet teeth, permitting the jaw to be moved downward on the shank of the wrench. A spring *C* serves to hold the dog in engagement with the ratchet teeth when the button *A* is released. It is not necessary to operate the button *A* when closing the jaws on a piece of work, but merely when it is desired to open them. The pipe-gripping device consists of a slotted member, which may be fitted over the shank of the tool, and is provided with inwardly-inclined teeth, as shown in the illustration. The inventor of this improved wrench is Mr. Charles Waller of Hamilton, Wash.



COMBINED PIPE WRENCH AND MONKEY WRENCH.

COMBINED TIMER AND DISTRIBUTER FOR INTERNAL-COMBUSTION ENGINES.

The speed of an internal-combustion engine is commonly regulated by varying the time of the spark with respect to the position of the piston. In the case of a multiple-cylinder engine, the casing of the timing device carries a number of terminals, which contact in succession with an inner rotatable member, and the casing is mounted to oscillate for a limited distance, in order to vary the time of the spark as above referred to. A disadvantage of this system is the fact that the casing cannot be held rigid, and the time of the spark cannot be accurately controlled when the engine is operated at high speed. Furthermore, the oscillation of the cylinder casing and the rattle and jar due to the fact that it is mounted on a single short bearing are apt in time to break away the connecting wires. In the timer here illustrated the casing is fixed and the timing is accomplished by a sliding sleeve mounted on a long bearing. As shown in the accompanying engraving the device comprises a casing formed of three separate sections. The section *A* contains the timing mechanism, the insulated section *C* a distributer, while section *B* serves to connect the other two sections and support the controlling lever. A shaft *D* runs through the two sections, and is geared to the engine shaft. Mounted on the shaft *D* is a sleeve *E*. A pin *F* in the shaft engages the slot in the sleeve *E*, which serves to couple the sleeve to the shaft *E* and yet permit the former to slide on the latter. Mounted on the sleeve *E* in the timer section is a drum which carries a spiral metal strip *G* adapted to come in contact with a series of spring-pressed balls mounted in, but insulated from, the casing. As the shaft *D* revolves, it will be observed that contact is successively made with the balls *H*, which control the primary winding of the coil, and that by sliding the contact strip *G* along the shaft *D*, the time of the contact with respect to the position of the pistons will be varied. The contact strip *G* may be moved along the shaft *D* by means of a lever *I*. The opposite end of the sleeve *E* carries an insulating block in which a spiral contact strip *J* of the same pitch as the strip *G* is fitted. The strip *J* is adapted to make contact with buttons *K*, which correspond in position with the terminals *H*, and are connected to the spark plugs. A metal sleeve is fitted in the insulating block in contact with the strip *J*, and this is adapted to receive a metal rod *L*, which bears against a plate connected with the terminal *M*. By this means electrical connection is always maintained between the strip *J* and terminal *M*, no matter what position the sleeve *E* may occupy along the shaft *D*. This arrangement is particularly adapted for use on low-speed marine engines where a single coil suffices for all cylinders. For high-speed automobile engines a separate coil is required for each cylinder and hence the distributer can be dispensed with. The inventor of the combined timer and distributer is Mr. G. T. Brown, of 225 West 80th Street, New York city.



COMBINED TIMER AND DISTRIBUTER FOR INTERNAL-COMBUSTION ENGINES.

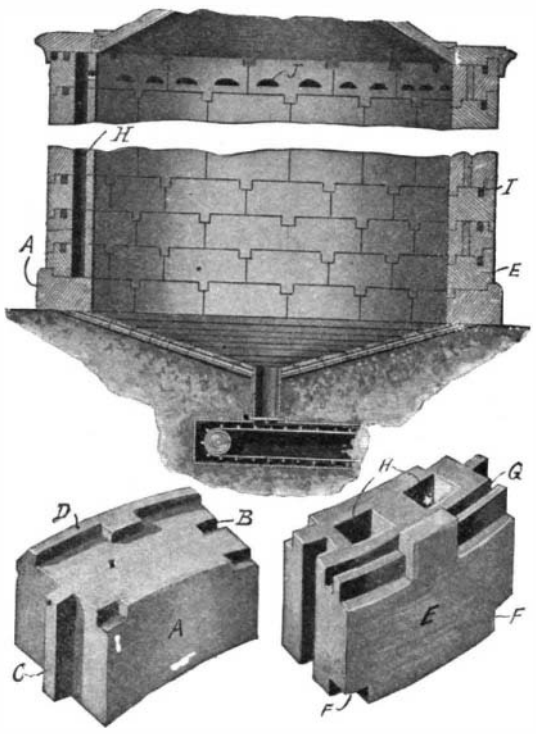
AN IMPROVED STEAM TRAP.

Pictured in the accompanying engraving is an improved steam trap, which is of simple and durable construction and arranged to discharge the water of condensation periodically as required. The apparatus comprises a closed vessel *A*, into the top of which the steam supply pipe *B* opens. Passing through the steam supply pipe, and reaching to within a short distance of the bottom of the vessel *A*, is the water discharge pipe *C*. The vessel *A* is adapted to slide vertically on the pipe *B*, and is provided with rollers that engage guide rails at opposite sides. The steam supply pipe *B* is connected with the apparatus on which the steam trap is to be used, so that the water of condensation accumulates in the vessel *A*. The water discharge pipe *C* is provided at *D* with a valve. A lever *E* presses against the valve stem at one end, while the opposite end engages a cross piece *F*, attached to the vessel *A*. The cross piece is in turn connected by a link to a lever *G*, which carries a weight *H* that may be adjusted along its length. The weight *H* may be adjusted to lift the arm *E*, so that it depresses the valve stem and keeps the valve *D* closed. As the water of condensation accumulates in the vessel *A*, it overbalances the weight *H*, drawing down the cross piece *F*, and with it the lever *E*, and thus releasing the valve stem, which springs up under tension of a small spiral spring. The steam pressure in the upper part of the vessel *A* then forces out the water of condensation through the discharge tube *C*. As soon as the water is discharged, the weight *H* lifts up the vessel *A* to its normal position. The weight is so adjusted that it will act before all the water in the vessel is discharged, and will leave enough water in the vessel to seal the bottom of the discharge tube *C*, and prevent steam from escaping therethrough. The inventor of this improved steam trap is Mr. M. J. Boyle, 315 49th Street, Brooklyn, N. Y.

AN IMPROVED STEAM TRAP.

A NEW GRAIN BIN CONSTRUCTION.

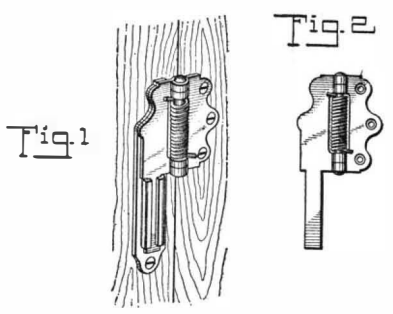
The grain bin illustrated in the accompanying engraving is designed to provide a dry and well-ventilated structure. While the construction is such that it may be easily and quickly built, it will withstand great pressure from within. The floor of the bin preferably slopes downward toward the center, leading to a chute that extends to a horizontal passage below, in which is mounted an endless belt carrier. The walls, floor, and roof of the bin are preferably constructed of blocks or tiles of fireproof construction. The first course of blocks of which the wall is formed are made as indicated at *A*. Each block is provided with a recess at one side and a tongue at the other, so that the blocks may be successively rabbeted together. It will be observed that the block *A* is provided at its outer upper edge with a flange *D*, which has a lug projecting inwardly therefrom. The next course of blocks, which are of the form indicated at *E*, are provided with recesses *F*, which fit over these lugs on the flanges *D*. It will be understood that each course of blocks breaks joints with the course below it. The blocks *E* are provided with grooves *G*, adapted to receive metallic bands, which are shown in section at *I*. Each block *E* is provided with a pair of vertical passages *H*, which are adapted to register with similar passages in the successive courses, so as to form continuous passages from top to bottom of the bin. The blocks in the intermediate courses of the wall are somewhat different in form from the ones shown at *E*, but it is sufficient to state that they are provided with projecting lugs that enter recesses on adjacent blocks, so as to form an interlocking construction. The uppermost course of blocks differs from the others in having apertures *J*, which provide communication between the interior of the bin and the vertical passages. These apertures are above the grain line, and afford ventilation of the walls. The inventor of this grain bin construction is Mr. Thomas Dougherty, 624 18th Avenue South, Minneapolis, Minn.



A NEW GRAIN BIN CONSTRUCTION.

ODDITIES IN INVENTION.

DETACHABLE HINGE.—One of the bugbears of the man who has to do his own odd jobs around the house, is the putting on and taking off of screen doors, particularly if provided with spring hinges. It is quite a difficult matter to apply the hinge without the help of an assistant holding the screen door. The invention illustrated herewith aims to overcome this difficulty by making the hinge detachable. A socket piece is permanently fastened to the door jamb, and the spring hinge may be fitted into this socket piece, or removed at a moment's notice.



DETACHABLE HINGE.

Universal Cement.—4 parts alabaster plaster and 1 part of finely-pulverized gum arabic mixed with a cold-saturated borax solution into a thick paste, make an unequaled all-around cement for stone, glass, bone, horn, porcelain, and wood, which becomes hard as marble and possesses the agreeable quality of not solidifying immediately after mixing, but only after 24 to 30 hours.