

AN IMPROVED FIRE ESCAPE.

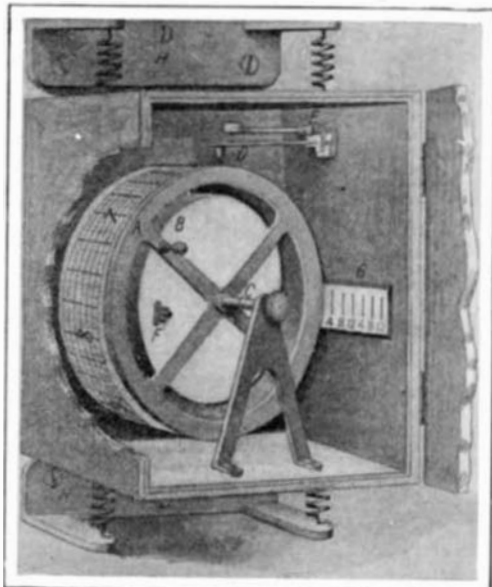
A convenient type of fire escape is illustrated in the accompanying engraving. The apparatus is very compact and simple, as will be seen from the following description of its construction. It comprises a casing provided with a fixed central shaft, on the lower end of which a reel drum is mounted to rotate. A rope is coiled on the drum, with its free end extending upward through a thimble at the top of the casing. The upper face of this drum is formed with an internal gear which, through a train of step-up gearing, serves

**A CONVENIENT FIRE ESCAPE.**

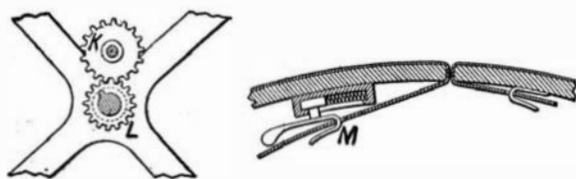
to rotate a governor, mounted on the upper end of the fixed shaft. Secured to the upper end of the governor is a friction disk, which is adapted to engage a similar disk on a fixed shaft, when it is desired to brake the rotation of the reel drum. The mechanism for pressing the two disks together is clearly shown in the fragmentary detail view. A crank handle *A*, at the upper end of the casing, is connected by a shaft with a cam *B*, which bears against the clutch-block *C*, pivoted to the casing. The block *C* is formed with a V-shaped notch adapted to engage the beveled faces of the disks *D*. By turning the crank, the swell of the cam is brought to bear on the clutch, locking it against the disks and pressing them together. In use, the free end of the rope is made fast to the window casing, or to any suitable fixture in the room. A strap is then passed through the ring eye on the bottom of the casing, and strapped about the hips and waist of the person about to use the fire escape. A reliable and safe descent can now be made, the rope slowly uncoiling as the drum rotates under control of the governor. If it be desired to stop the fire escape at any time, to rescue another person at a lower window, the brake may be easily applied by turning the crank handle. The rope may be recoiled on the drum by operating the crank at the bottom of the casing, which turns the drum through the medium of a pair of gear wheels. The train of gearing which connects the drum with the governor comprises, in addition to the gearing, a pawl and ratchet adapted to disconnect the governor when the reel drum is turned to recoil the rope. The inventors of this fire escape are Messrs. Bergvin Johnson, John W. Smith, and Barney Johnson, of Congress, Arizona, P. O. Box 81.

VEHICLE ATTACHMENT FOR KEEPING RECORD OF DRIVER'S WORK.

A clever invention, which we illustrate herewith, has recently been patented by Mr. Harry Hencken, 8 West 121st Street, New York. It consists of a small device, which may be attached to any vehicle to keep a record of the driver's work. The record shows just how long the vehicle was in motion, and also how long it was standing still. The mechanism of the device is contained in a casing supported by coiled springs, connected with brackets *H*, which are attached to the vehicle at any convenient point. Owing to this spring

**VEHICLE ATTACHMENT FOR KEEPING RECORD OF DRIVER'S WORK.**

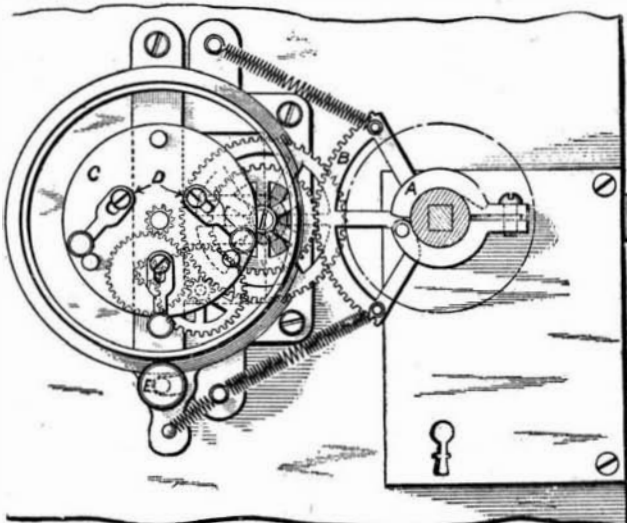
support, the device will respond to any vibration of the vehicle. Within the casing is a drum *A*, with an internally-threaded hub, which is mounted on a fixed shaft *C*. The latter is also threaded for a short length, to engage the internal thread of the hub. The outer face of this hub is formed with teeth, extending longitudinally along its entire length. As shown in one of our detailed views, this toothed hub *L* is engaged by a gear wheel *K* of a clock mechanism contained in the casing *B*. The clock mechanism slowly turns the drum *A* on its axis and, due to the threaded connection with the shaft *C*, the drum is also caused to move outward thereon. Carried on the face of the drum is a chart, the ends of which are passed through a slot therein, and fastened by means of hooks on the under side. One of these hooks *M*, as shown in the detailed view, is pressed backward by a spring, which serves to hold the chart taut on the drum. Secured to the casing above the drum is a leaf spring, which carries at its free end a marking point *D*, adapted to be vibrated against the chart by the jarring of the vehicle when in motion. A fixed bar extending above the spring carries a block *E*, formed with a slot through which the spring passes. By moving the block out to the end of the bar, the vibration of the point *D* will be prevented. In operation, this block having first been moved back, a series of dots will be marked on the chart while the vehicle is in motion. The clock-work, which may be wound up at *F*, causes the drum *A* to make one complete turn every four hours, and the chart thereon is divided by four heavy lines to indicate the hours. These spaces are subdivided to indicate the minutes, and thus the length of time the vehicle has been in motion is indicated by the length of the line drawn by the vibrating marker. But the record is not limited to a period of four hours, because the drum moves forward slowly along its axis while rotating, so that the marker engages a continuous spiral column on the chart as the drum turns. To as-

**DETAILS OF THE VEHICLE ATTACHMENT.**

sist in reading the record two scale plates are provided, one at each side of the casing, by which the outward movement of the drum may be measured.

AN AUTOMATIC DOOR ALARM.

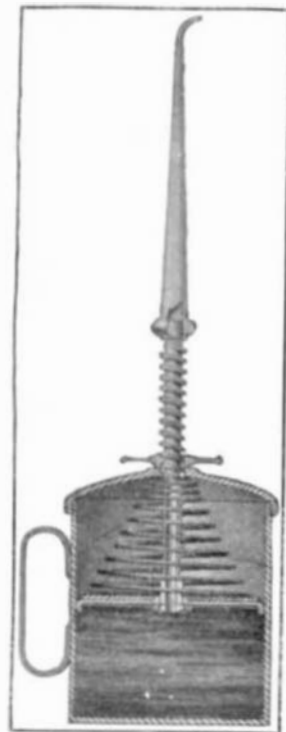
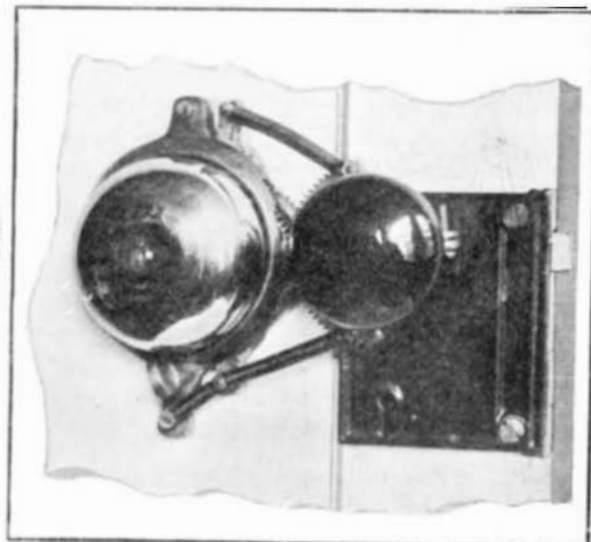
Door alarms are commonly worked by a spring or an electric battery, the action of which is controlled either by opening the door or by turning the door-knob. The objection to such alarms is that the spring must be frequently wound or the battery renewed, else the motive power may be exhausted at the time when it is most needed. But a new type of door alarm has recently been invented, in which neither spring nor battery is used as a motive power. Instead the alarm is operated directly by the turning of the door-knob. This door alarm is illustrated in the accompanying engravings. In the detail view the gong is removed to show the mechanism of the alarm. The alarm proper is secured to the door at a point adjacent to the door-lock. Clamped to the knob-spindle by means of split ring *A* is a toothed sector *B*. This is arranged to operate, through a train of step-up gearing, a disk *C*, which is mounted to turn on the central stud that carries the gong. The disk *C* carries a number of hammers *D*, that are pivoted thereto by means of screws which pass through slots in the shanks of the hammers. The movement of the hammers is limited by pins which project from the face of the disk. In operation, when the door-knob is turned, the sector *B* turns with it and, through the medium of the step-up gearing, rotates the disk *C* very rapidly, causing the hammers to fly outward by cen-

**DETAILS OF THE AUTOMATIC DOOR ALARM.**

trifugal action and strike against ribs formed on the inner face of the gong. In this way the gong is sounded, giving the alarm when any one attempts to open the door. In order to return the knob to its normal position, the ends of the sector are connected to the main frame by a pair of coil springs. The principal mechanism of the alarm is mounted in an auxiliary frame, which is pivoted to the main frame at its upper end. The lower end of this frame is connected by a spring with the main frame in such manner as to hold the gearing in mesh with the sector. When it is desired to place the alarm out of action, the auxiliary frame is swung away from the sector until the latter clears the train of gearing. In this position it is clamped by a thumb-screw *E*. Mr. Philip Bourne, of 1690 Lexington Avenue, New York city, N. Y., has recently secured a patent on this invention.

OIL CAN WITH MEANS FOR CONTROLLING DELIVERY OF OIL.

We illustrate herewith an improved oil can, which has recently been invented by Messrs. William Morris and Charles A. McClair, of Index, Wash. This can belongs to that type used in lubricating machinery, and is provided with means for positively controlling the delivery of the oil. The can is formed with a main or body section and a cap screwed thereon. Within the can is a piston formed of two supporting disks, between which is a packing disk with cupped edge that closely engages the wall of the can. The piston is provided with a hollow piston rod, which projects through the cover of the can and carries at its upper end a suitable nozzle, threaded thereto. The outer surface of the piston rod is formed with a helical thread, upon which is mounted a threaded adjusting wheel. A spring is interposed between the piston and the cover of the can, pressing the former down as far as permitted by the adjusting wheel, which bears against the upper face of the cover. It will be observed that the spring is of the helical type, that is, toward the base the coils increase in diameter, so that it will fold up into a very small space, permitting the piston to be raised to the top of the can. The can may be filled with oil by removing the cap and the piston; but a preferable method is to remove the nozzle, immerse the end of the hollow piston rod in oil, and draw the piston out so as to produce a vacuum in the oil chamber, which will immediately fill with oil, flowing in through the bore of the piston rod. The piston should then be held up by screwing down the adjustment wheel. In use, by turning the adjusting wheel so as to permit the piston head to feed downward, the oil will be forced up through the hollow piston rod, and out of the nozzle. To check the flow, the movement of the adjusting wheel may be reversed, relieving the pressure on the oil, or the same effect may be more quickly produced by pulling the nozzle outward against the force of the spring. With each oil can a number of nozzles may be provided, which could be especially adapted for difficult purposes.

**OIL CAN WITH MEANS FOR CONTROLLING DELIVERY OF OIL.****AUTOMATIC DOOR ALARM.**