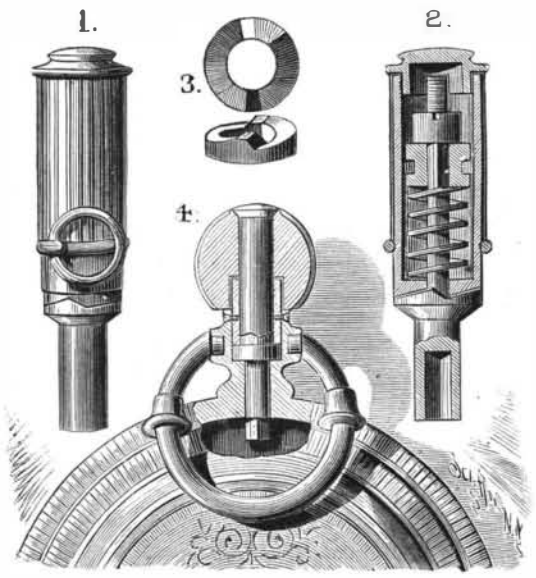
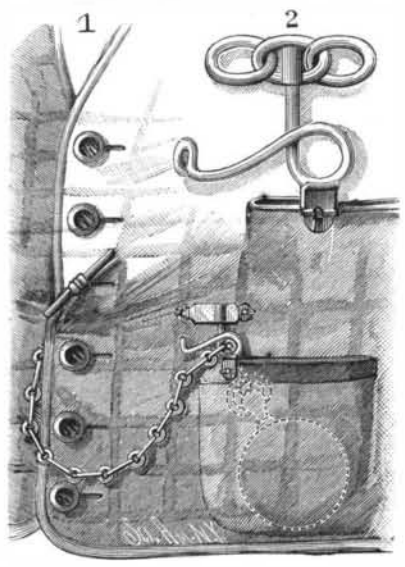
WATCH PENDANT KEY AND SAFETY ATTACHMENT FOR WATCHES.

The inventions herewith illustrated have been patented by Mr. Daniel Nettekoven, of Fort Shaw, Montana. The upper engraving represents the watch pendant key, while the second shows the safety attachment. The key is formed with a shank having a square aperture, in which fits the pin attached to the pinion connected with the movement in the usual manner. The shank is provided with a ratchet wheel, shown detached in Fig. 3, which meshes with a corresponding wheel formed on the bottom of a hollow stem formed with plain or fluted sides or with a spherical fluted knob. The two ratchet wheels form the clutch of the winding mechanism. Fitting over the end of the hollow stem is a cap which prevents the entrance of dust. A spring, the arrangement of which is clearly shown in Fig. 2, holds the ratchet wheels in contact with each other. The tension of the spring is



NETTEKOVEN'S WATCH PENDANT KEY.



NETTEKOVEN'S SAFETY ATTACHMENT FOR WATCHES.

regulated by a nut, and is sufficient to hold the wheels in contact while the watch is being wound; but as soon as the winding is accomplished, the shank remains stationary, the upper wheel gliding over the lower one, even if the operator continues to turn the stem. This prevents the possibility of the main spring or other parts being broken. Fig. 4 shows the construction of the parts when applied to stem-winding watches.

The safety attachment for watches consists of a loop secured at its upper end to a cross bar which may be made to resemble any emblem, and which is rigidly secured to the garment. The lower loop part of the hook is attached to a bar (Fig. 2) secured to the edge of the pocket containing the watch. The free end of the hook is bent inward, and is in close contact with the garment. By pressing the garment inward, the watch chain can be slipped into the loop of the hook. It will be seen that a pull on the chain will not dislodge the watch, as the watch ring will strike against the hook and be held thereby.

The wearer can, however, at any time withdraw the watch by taking hold of it and pulling it out, as the chain has a free movement in the loop; or by taking hold of the chain with the fore and middle fingers and placing the thumb on the free end of the hook, for raising it so as to allow the chain to pass through.

SAFETY STIRRUP.

In the stirrup herewith illustrated, which is the invention of Mr. A. R. Parkison, of Monongahela City, Pa., the parts are so arranged that, should the rider be thrown, his foot will be released, while the pressure of the foot upon the side of the stirrup will cause the disconnection of the stirrup from its strap. The tread is made integral with one side bow, while to its opposite end is hinged a movable bow, whose upper end carries a pin that passes through an extension formed upon the arm of the head as represented in Fig. 3. Within the head is loosely mounted a shaft carrying a rectangular rack provided with pins on its upper arm. The stirrup strap passes through a slot formed in the head, and around the rack, as shown in Figs. 1 and 2. After the leather has been thus secured, the rack is held from turning by the pin upon the upper end of the movable bow. The strap may be permanently attached to the saddle and its length regulated at the stirrup. Should the rider be thrown, the pressure of his foot will throw out the movable bow to the position indicated by the dotted lines in Fig. 1, when the rack, should it be subjected to any pull, will be free to rotate and release the strap, and thereby disconnect the stirrup.

HOTEL REGISTER.

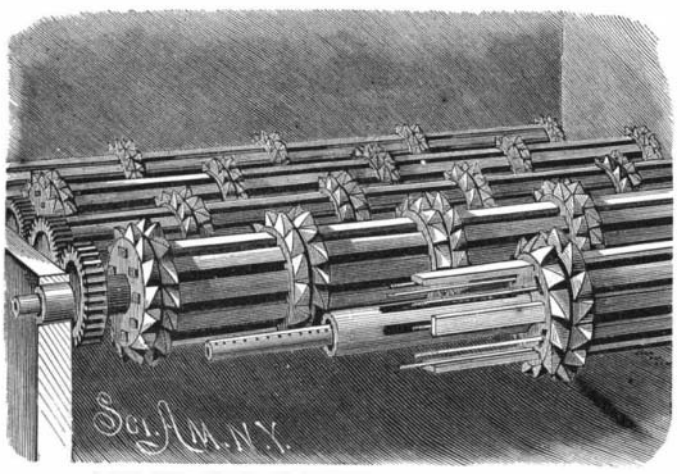
Within the case, directly behind two transverse openings in its upper face, are arranged two shafts, mounted in bearings in the sides, and each having at one end a crank handle. Passing through the openings and around the rollers is a strip of paper, the construction being such that when the upper shaft is turned the strip will be wound thereon and unwound from the lower roller. The rollers carried by the shafts are held in place by shields placed at either end of each roller. The strip of paper is divided into four parallel columns, the idea being to provide a separate column for the name of the guest, for his residence, for the time of his arrival, and for the number of the room to which he is assigned. Projecting diagonally from the upper end of the case is an ornamented panel, to receive the name of the hotel and other appropriate matter. Below the panel is a recess for holding pens and openings for ink wells. The case is pivoted upon a metal standard, so that it can be freely turned.

This invention has been patented by Mr. James W. Leasure, lock box 1420, Bradford, Pa.

IMPROVED FURNACE GRATE.

The sections are formed of toothed end pieces, with which are cast bars. The opposite ends of the bars are received in mortises in the sides of the next toothed wheels. Each section of the grate bar is thus made up of two wheels, from one of which the bars project and enter mortises in the other. The grate bar is formed of a series of such sections placed on a hollow slotted shaft and secured together by bolts passing through all the sections. The teeth on one wheel of a section point in a direction opposite to those on the other wheel, so that the work is the same, no matter in what direction the bars are revolved. The bars are revolved by suitably arranged cog wheels on the ends of the shafts. Inserted in the hollow shaft is a pipe which extends through the entire series of sections of the grate bar, and is apertured to permit the escape of water therefrom to the interior of the bar, to keep it cool and to furnish a certain amount of steam to the fire to improve the combustion and economize fuel. The wheels of adjacent bars alternate with each other, leaving spaces for the escape of ashes and clinkers, which are ground up and removed by the rotation of the wheels and bars.

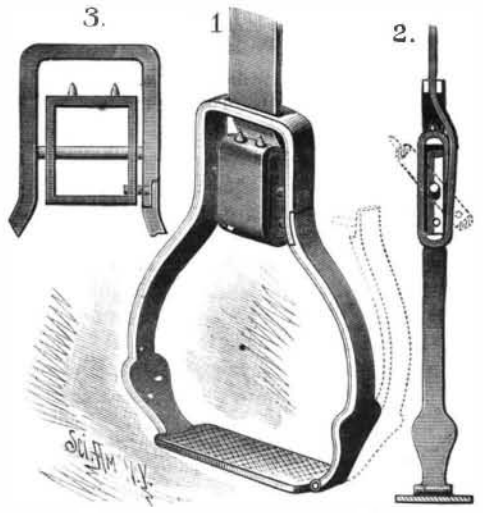
This invention has been patented by Mr. S. H. Huntington, of West Pittston, Pa.



HUNTINGTON'S IMPROVED FURNACE GRATE.

Silotvaar, a New Explosive.—Is it a Russian "Keely Motor"?

M. Rucktchell, a Russian engineer, has invented a new explosive, which he calls "silotvaar," with which experiments have been recently carried out at the camp of Krasnoie Selo, near St. Petersburg. As compared with ordinary gunpowder, the penetrative power of the new explosive, when used for cartridges, is stated to be ten times greater. The compound of which the explosive consists is still the secret of the inventor. The explosive, an exchange says, emits no smoke or heat, and the discharge is unaccompanied by any report. Since these experiments, the Russian war and naval authorities have had the new explosive examined and tested by experts, who, it is stated, have pronounced favorably upon it. It is further stated that a motive force may be generated with the explosive by means of an engine constructed by the inventor, for which he claims superiority over steam and gas engines. The inventor has patented both the explosive and the engine in several countries. If patented, the composition cannot be a "secret." On the whole, this reads, the *Mining Journal* thinks, like our own American Keely motor.



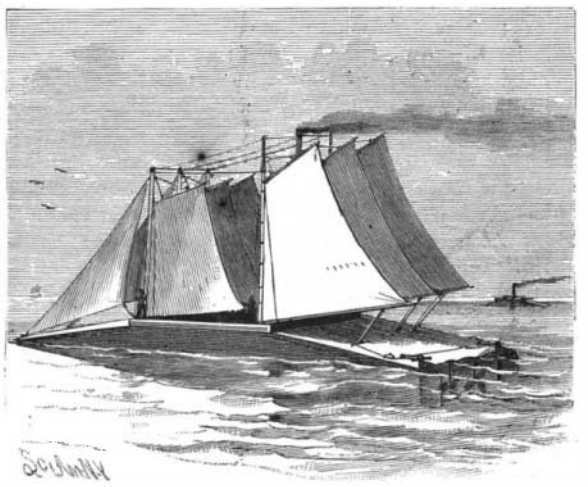
PARKISON'S SAFETY STIRRUP.

A NOVEL FORM OF VESSEL.

This vessel is rectangular in plan and cross section and double convex in longitudinal section and side elevation. The measurements in the following description may be regarded as suggested proportional dimensions. The hull is 180 feet long, with flat vertical sides, 12 feet high at their middle parts and tapering to a point at the water line. It is 60 feet wide, the bottom being flat in cross section, but curving gradually upward from the middle part to the ends. The middle third of the deck is flat, while the end thirds curve downward to meet the ends of the bottom. The vessel is provided with two or more stationary weighted keels, as may be required, but in all cases a keel is placed beneath the lower edge of each vertical side. Two or more rudders are used, controlled by chains in the usual way, and two or more masts may be employed, or the vessel may be driven by steam power. The interior of the vessel is divided into a number of water-tight compartments, and, if used for war purposes, the side compartments could be made shot proof by jute fiber, which would float even if full of holes. Drawing very little water, the vessel could enter any harbor. Oil or grain could be carried in bulk, thereby economizing in labor and cost of cans, barrels, or bags. It is evident that such a vessel would have great breadth of beam in connection with a very fine "entrance" or "run," and, as a war vessel, would produce a most formidable ram and have great steadiness as a gun platform.

This invention has been patented by Mr. W. L. D. O'Grady, of 98 Maiden Lane, New York City.

LEASURE'S HOTEL REGISTER.



O'GRADY'S NOVEL FORM OF VESSEL.