(No Model.)

E. G. KIMMELL.

VALVE.

No. 563,183. Patented June 30, 1896.

Fig. 2.

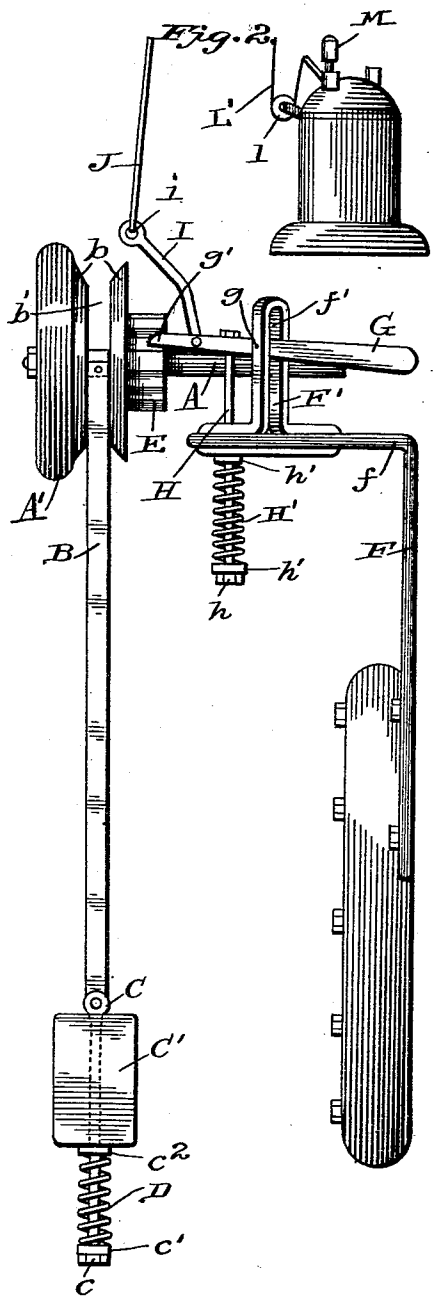


Fig. 1.

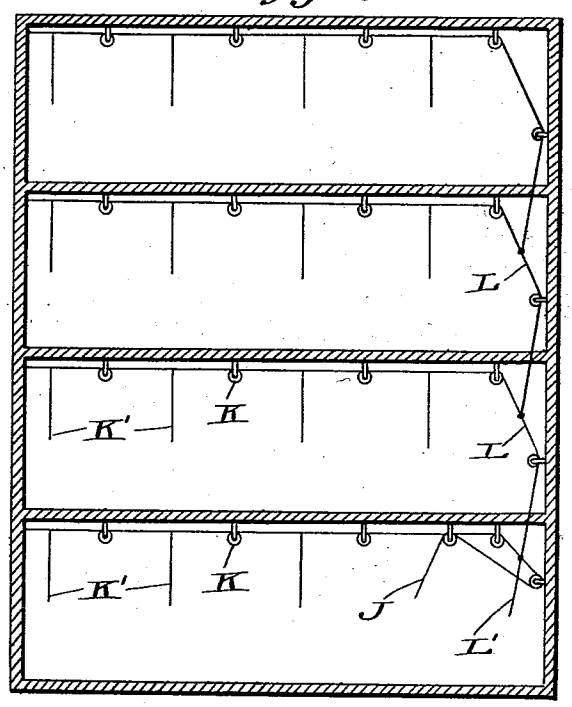
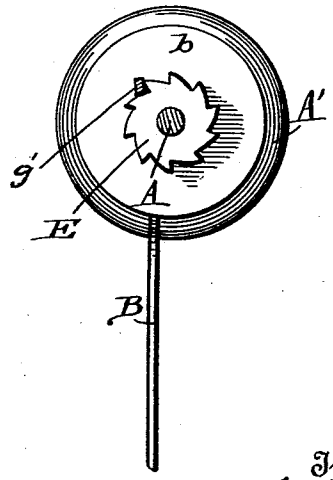


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD G. KIMMELL, OF KEYSER, WEST VIRGINIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 563,183, dated June 30, 1896.

Application filed March 10, 1896. Serial No. 582,651. (No model.)

To all whom it may concern:

Be it known that I, EDWARD G. KIMMELL, of Keyser, in the county of Mineral and State of West Virginia, have invented certain new and useful Improvements in Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in means for operating a valve or valves; and it has for its object, among others, to provide a simple and cheap mechanism and connections whereby the valve may be operated to shut off the steam and stop the engine from any point throughout the building, thus avoiding the necessity of going to the engine-room or of notifying the engineer.

It often happens that in factories and other places some accident will happen to the machinery, or a person will get their clothes or hand or some portion of their body caught in the machinery or in the belting, and loss of life often results simply for the reason that so much time is lost in shutting off the steam and stopping the engine and machinery. By my invention this delay is avoided, as the valve can be operated to shut off the steam and stop the machinery at an instant's notice, provision being made for the accomplishment of this purpose at any point throughout the building.

I provide on the valve-stem a ratchet engaged by a pawl, and on the said valve-stem I mount a pulley, to which is connected one end of a band, the other end of which carries a weight which is normally wound and held against unwinding by the pawl engaging the ratchet. When a cord in any part of the building is pulled upon, it disengages this pawl from the ratchet, when the weight immediately actuates the valve-stem and causes the valve to shut off the steam, and at the same time an alarm, such as a whistle, is sounded. The pawl which engages said ratchet is mounted upon or connected with the lever by which the valve is operated by the engineer.

The invention is capable of embodiment in various forms, that herein illustrated being what I at present consider the preferable one.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is an elevation showing the application of my improvement. Fig. 2 is a view showing the arrangement of the cord in the various rooms. Fig. 3 is a cross-section through the valve-stem, looking toward the ratchet.

Like letters of reference indicate like parts in the several views.

Referring now to the details of the drawings by letter, A designates the valve-stem, adapted to be connected with and operate the throttle-valve of an engine of usual construction.

A′ is the handle by which the valve-stem may be turned. Fast on this stem is a pulley comprising the heads or flanges *b*, between which is the space *b′*, while a cord, band, or analogous device B has one end attached to the hub of said pulley, as shown in Fig. 1, said cord or band being adapted to be wound thereupon between the flanges.

To the lower end of the cord or band is connected in any suitable manner one end of a bolt or rod C, which passes loosely through a weight C′ and receives upon its lower end a nut *c′*, while between said nut or a collar *c′*, bearing thereagainst, and the lower end of the weight or a collar C^2, slidingly mounted on said rod, is a coiled spring D, the object of which is to cushion the downward movement of the weight and prevent sudden jar, which would tend to break or injure the valve or its stem or the connection between the same and the other end of the cord.

The collar C^2 may be provided with a flange, if necessary, into which the end of the spring may be received, so as to prevent undue lateral movement thereof.

E is a ratchet-wheel mounted for movement with the pulley and valve-stem.

F is an upright or a bracket or other support adapted to be secured in any suitable position, as upon the cylinder-head, and its upper end is extended horizontally, as seen at *f*, and mounted thereon is the vertical arm or

support F′, which is slotted, as seen at f', and in this slot works the lever G, pivotally mounted, as at g, and its other end shaped to constitute a pawl g', arranged to engage the ratchet-wheel.

Connected with the lever G, between its pivot and its pawl, is a rod H, which passes through an opening in the horizontal portion f of the bracket or support, and its lower end provided with a nut h, between which and the under side of said lateral portion is a coiled spring H′, which may be, if desired, held between collars h', mounted to slide upon said rod, so that the ends of the spring may be prevented from undue lateral movement.

To the lever, between the connection of the rod H therewith and the pawl, is an arm I, secured in any suitable manner and having at its end a loop or opening i, with which is connected one end of a rope or cord J, the other end of which extends, as seen in Fig. 2, passing over suitable pulleys and guides K, and having connected therewith branch cords L, which extend into the various rooms and upon the various floors, all passing over suitable guide-pulleys or analogous means and provided at intervals with straps or depending parts K′ within convenient reach of a person on the floor. With this cord J is connected a branch cord L, which passes over suitable guide-pulleys l and connected with and adapted to actuate a whistle M or other suitable signal or alarm.

With the parts constructed and arranged substantially as hereinbefore set forth, the operation will be apparent. The weight is wound up by turning the handle A′, and retrograde movement of the valve-stem is prevented by the ratchet and pawl. When it is desired to shut off the steam, it may be done by the engineer by simply moving the lever G on its pivot, so as to disengage the pawl from the ratchet, when the weight, moving downward, turns the valve-stem so as to actuate the valve to shut off the steam in case of an accident, or for other purposes or reasons, pulling upon any one of the cords or the depending straps K′ in any part of the building, or in any room, will raise the pawl out of its engagement with the ratchet and the weight moving downward turns the valve-stem and actuates the valve.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

Where it is necessary to give the engine more power of steam, it would be advisable to have the boxing through which the weight may pass so that it might extend through the floor or into the ground to give more space.

Having thus described the invention, what is claimed as new is—

1. The combination with the valve-stem, of a ratchet-wheel thereon, a pawl engaging the ratchet, a weight connected with the stem and means for actuating the pawl from any desired point to permit it to disengage the ratchet and thereby rotate the stem, and means for cushioning said weight, substantially as described.

2. The combination with the valve-stem, a weight carried by a cord wound thereupon, a ratchet-wheel mounted to move with said stem, a lever carrying a pawl engaging said ratchet, a spring for holding said pawl in engagement with the ratchet and connections whereby the pawl may be actuated from any desired point, substantially as described.

3. The combination with the valve-stem, a weight carried by a cord wound thereupon, a ratchet-wheel mounted to move in said stem, a lever carrying a pawl engaging said ratchet, a spring for holding said pawl in engagement with the ratchet and connections whereby the pawl may be actuated from any desired point, and an audible alarm operatively connected with said connections, substantially as described.

4. The combination with the valve-stem, its handle and pulley and ratchet, of a weight carried by a cord wound upon said pulley, a pivoted lever carrying a pawl to engage said ratchet, an arm connected with said lever and a cord connected with said arm and with an audible alarm, and branch cords connected with said cords and extended to different parts of the building, substantially as described.

5. The combination with the valve-stem, its handle and pulley and ratchet, of a weight carried by a cord wound upon said pulley, a pivoted lever carrying a pawl to engage said ratchet, an arm connected with said lever and a cord connected with said arm and with an audible alarm, and branch cords connected with said cords and extended to different parts of the building, and a spring for normally holding said pawl in engagement with the ratchet, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDWARD G. KIMMELL.

Witnesses:
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L. O. DAVIS.