

H. ALSTERBERG.
ENGINE STOPPING DEVICE.
APPLICATION FILED OCT. 7, 1911.

1,029,657.

Patented June 18, 1912.

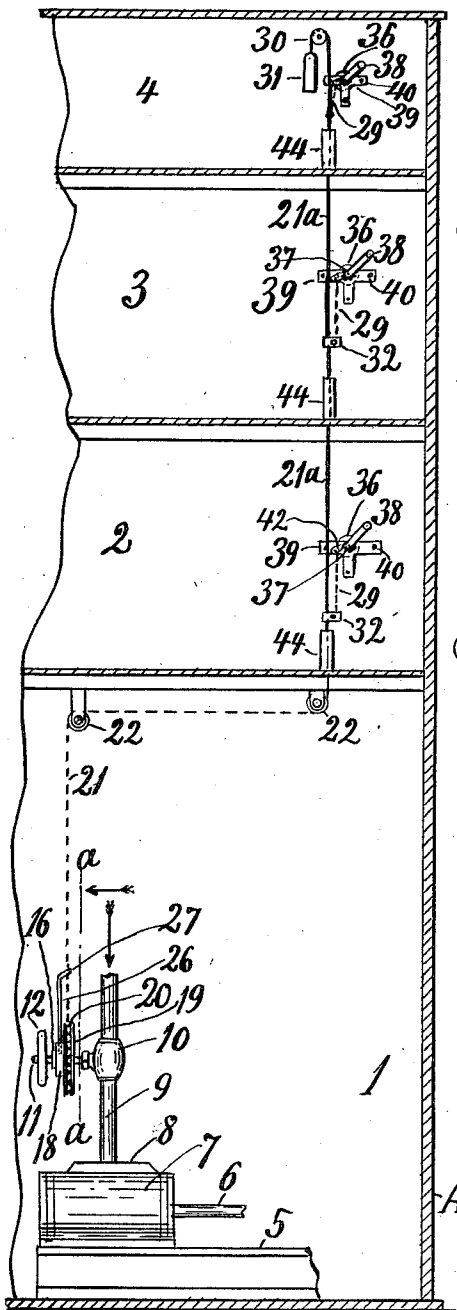


FIG. 1.

WITNESSES:

D. E. Carlsen
E. C. Carlson.

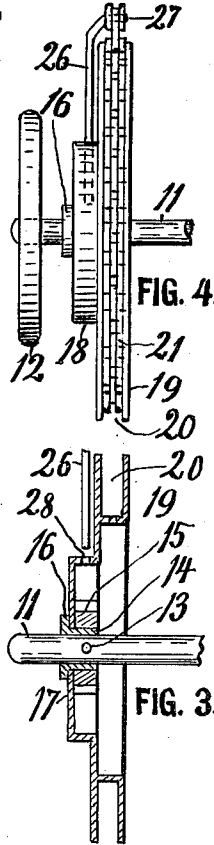


FIG. 3.

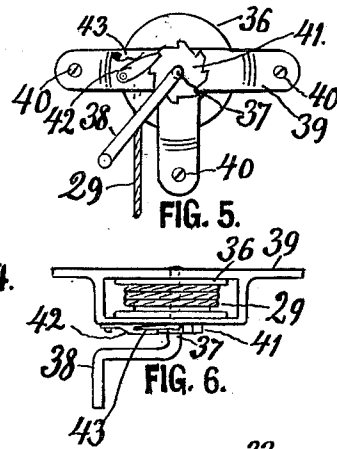


FIG. 4.

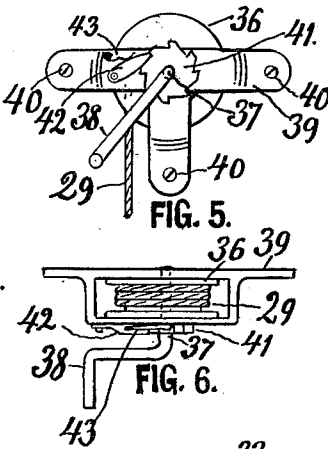


FIG. 5.

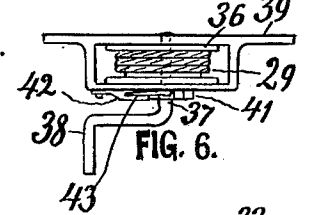


FIG. 6.

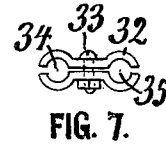


FIG. 7.

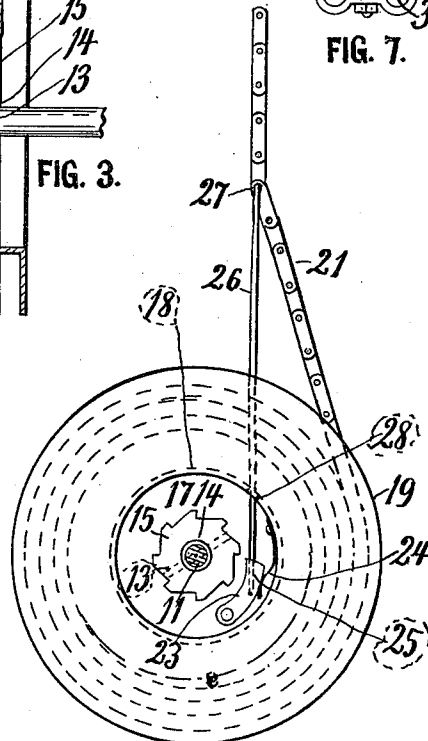


FIG. 2.

INVENTOR:

Henning Alsterberg,
BY HIS ATTORNEY:
A. M. Carlsen.

UNITED STATES PATENT OFFICE.

HENNING ALSTERBERG, OF ST. PAUL, MINNESOTA, ASSIGNOR OF ONE-HALF TO
CHARLES JOHNSON, OF ST. PAUL, MINNESOTA.

ENGINE-STOPPING DEVICE.

1,029,657.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed October 7, 1911. Serial No. 653,427.

To all whom it may concern:

Be it known that I, HENNING ALSTERBERG, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Engine-Stopping Device, of which the following is a specification.

My invention relates to safety devices in factories and other buildings where machinery on several floors is run by an engine located in the basement or other lower story of the building.

The object of the invention is to provide means whereby an engine thus located may be stopped by a person on any of the upper floors, so as to thereby minimize the injury or damage which often results when either a fire breaks out in an upper story and the flames are fanned by actual fans or by other machinery acting as a fan; or by machinery breaking or getting out of order, or by catching the operator and dragging him into pulleys, gears, rollers or other dangerous parts. In which emergencies the engine should be stopped quickly and not after the regular engineer is found and instructed to stop the engine.

In the accompanying drawing, Figure 1 is a vertical section of a portion of a building several stories high and equipped with my invention for stopping an engine of which a portion is shown in the lowest story. Fig. 2 is an enlarged sectional view on the line *a-a* in Fig. 1. Fig. 3 is a diametrical vertical section of the main drum and ratchet wheel shown in Fig. 2, with the valve-stem intact and all other parts omitted except the tripping rod 26, which is shown in tripped position. Fig. 4 is a side elevation of the parts shown in Fig. 2. Fig. 5 is an enlarged front elevation of one of the windlasses 39 shown in Fig. 1. Fig. 6 is a top view of the device shown in Fig. 5. Fig. 7 is a detail top view of one of the clamps 32 shown in Fig. 1.

Referring to the drawing by reference numerals, and letters, A designates a building in whose lower story, 1, is an engine driving machinery (not shown) on several floors, 1, 2, 3, and 4 of the building. Said engine needs not to be fully shown in my drawing, but 5 designates its bed-plate, 6 the piston rod, 7 the cylinder, 8 the steam-chest and 9 the steam supply pipe thereof; the latter having a throttle valve 10, whose

stem 11 is turned by a hand-wheel 12 when the engineer is to start or stop the engine. In order to leave said valve stem free to be turned by the engineer, and still enable any person on floors higher up to turn it and thereby shut off the steam from the engine in case of an emergency, I provide the following means: On the valve stem 11 I secure by a pin 13 a short sleeve 14 and a ratchet wheel 15, the latter fitting snugly upon the inner end of the sleeve, and the other end of the sleeve having a collar 16. The sleeve enables one to place the device more readily on the stems of valves already in use, and which may be too short for a collar 16 wide enough to have a set-screw holding it; but where the stem is long enough for such collar it is obvious that the collar and the ratchet wheel may each be secured directly on the shaft without any sleeve. Between said ratchet wheel and collar is mounted to rotate the bottom 17 of a dished wheel 18, whose edges are projected outward to form a drum 19 with a peripheric groove 20. In said groove is secured and wound a chain 21, which by means of pulleys 22 may be guided to any part of the building, and is there operated by means presently to be fully described. In the dished portion of the drum is pivoted a pawl 23, which by a spring 24 is thrown into engagement with the ratchet wheel 15 whenever it is set free to be actuated by the spring; but the pawl is normally held away from the ratchet wheel by the lower end of a trip rod 26, which is normally inserted through an aperture 28 in the drum and into a pocket 25 in the pawl. The upper end of said trip-rod is attached at 27 to the chain 21; so that whenever the chain is pulled upward by a person on any of the upper floors the rod 26 is thereby pulled out of the pocket in the dog and also out of the aperture 28 in the drum, thereby setting the dog free to engage the ratchet and the drum free to turn; further pulling on the chain then rotates the drum and the valve-stem until the valve shuts off the steam and stops the engine.

What I have so far called the chain 21, may of course be a wire rope or other flexible element, even a soft wire 21^a will answer the purpose, and if the distance is long a stiff rod may be used as a part of the element. Also the branch-chains 29 may be wires or

hemp-ropes. The upper end of the main chain or cable is passed over a sheave 30 in the top story and provided with a weight 31, which serves to keep the cable at all times stretched both when it is idle and when in motion. At each floor the cable has a branch 29, which may be secured to it by a clamp like 32 in Fig. 7, or other suitable means. When said clamp is employed the turning of the screw 33 will draw the members of the clamp together and thereby hold firmly the main chain in the space 34 and the branch chain in the space 35. Each small drum 36 fixed on a shaft 37, which is journaled in a frame 39 and provided with a crank 38; said frame is secured by screws 40 to any wall or post of the building.

As best shown in Fig. 5, on each crank-shaft 37 is fixed a ratchet wheel 41, the latter engaged by a pawl 42 pressed by a spring 43.

44 is a tubular guide and guard upon each floor, to protect the cable 21, 21^a from injury and obstruction by things stored or placed on the floor.

In the operation of the device, whenever anything happens on any of the upper floors which makes it desirable to stop the engine on the lower floor quickly, a person on such upper floor takes hold of the crank 38 and turns it in the only direction the pawl will permit, and as he thereby winds the branch chain 29 onto the drum of the windlass he

is operating, the main chain, or cable, is thereby pulled upward and the valve of the engine closed, in the manner already above described.

What I claim is:

The combination with the stem of the throttle valve of an engine, of a hand-wheel and a ratchet wheel fixed on the stem, a drum rotatably mounted on the stem adjacent the ratchet wheel, and having an aperture a spring-pressed pawl carried by the drum in position to engage the ratchet wheel, and having a pocket a chain or similar means wound on the drum and extending remote from the engine, a trip rod carried by the chain and extending through the aperture in the drum and into the pocket to hold the pawl normally disengaged from the ratchet wheel, and means connected with the remote portion of the chain for pulling the same and thereby cause it to disengage the trip rod from the pawl and from the aperture in the drum, so that the pawl may engage the ratchet wheel, and the chain may rotate the drum and valve stem so as to close the valve.

In testimony whereof I affix my signature, in presence of two witnesses.

HENNING ALSTERBERG.

Witnesses:

A. M. CARLSEN,
CHAS. JOHNSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."