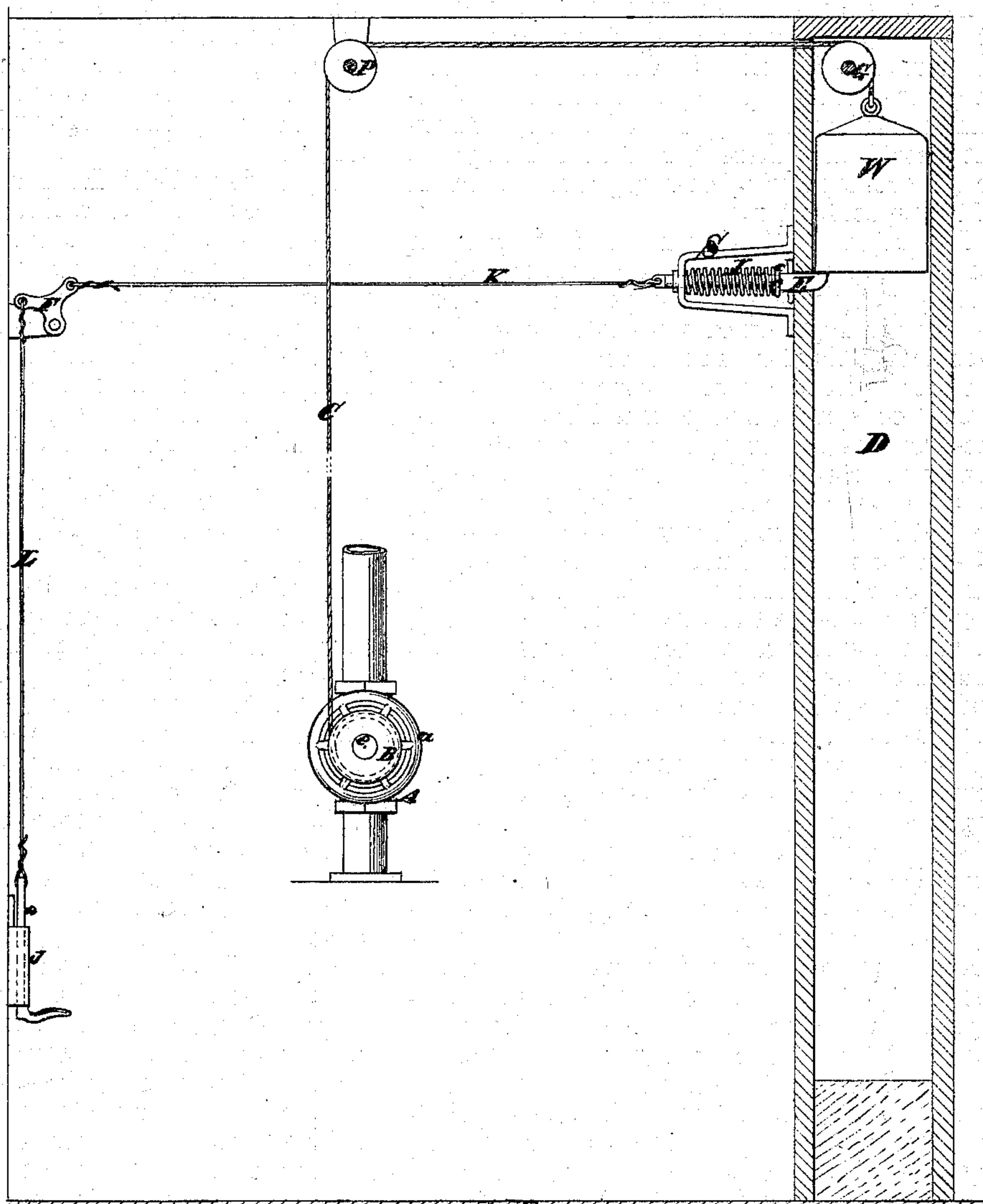


WILLIAM H. DARLING.

Improvement in Safety-Stops for Steam-Engines.

No. 127,315.

Patented May 28, 1872.



Witnesses:

Fred Haynes
R. W. Halsey

William H. Darling

UNITED STATES PATENT OFFICE.

WILLIAM H. DARLING, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND
JAMES B. SHARP, OF SAME PLACE.

IMPROVEMENT IN SAFETY-STOPS FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. 127,315, dated May 28, 1872.

To all whom it may concern:

Be it known that I, WILLIAM H. DARLING, of the city, county, and State of New York, have invented a new and Improved Safety-Stop for Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing forming a part of this specification.

The object of this invention is to provide for the stopping of a steam-engine in case of necessity, by a person at some distance therefrom, or in any part of the building in which it is used. To this end it consists in the combination, with the throttle or stop-valve, of a weight or spring, a stop, and a liberating device, the weight or spring being so applied that when free it will close the valve, the stop being arranged to hold the weight or spring so that it will leave the valve open, and the liberating device communicating by cords or wires with all parts of the building or with any place whence the valve is to be operated, in such manner as to provide for the withdrawal of the stop and the liberation of the weight or spring to permit the latter to effect the closing of the valve.

The accompanying drawing represents a throttle or stop valve of a steam-engine having my improved stop applied.

A is the throttle or stop valve, which has provided on its stem or spindle besides its hand-wheel *a*, a drum or pulley, B. This pulley has secured to it one end of a cord, C, a portion of which is wound several times around the said pulley. This cord passes over pulleys P and G, and has suspended from it a weight, W, which is arranged for protection and guidance within a vertical case, D, in which it is free to rise and fall unobstructedly. The winding of the cord around the pulley B is in such direction that the descent of the weight W would unwind it, and so turn the pulley and valve-stem in a direction to close the valve. E is a bolt which works through a hole in one side of the case D, in such position that its forward end, which projects within the case, will support the weight W when it has been drawn up to its highest position by opening the valve, and thereby winding up the cord G on the pulley B. This bolt,

which constitutes the stop, works in a guide, S, attached to the case, and it has a collar, *c*, formed on it, outside the case, between which and the guide S a coiled spring, I, is arranged around it to force it forward into a position to detain or stop the weight when the latter is above it.

The under side of the inner end of the said bolt is beveled like a latch that it may be pressed back by the weight to allow the latter to pass it when being drawn up in the act of opening the valve. The outer end of the bolt has a cord or wire attached to it which is secured at its other end to one arm of a bell-crank, F, arranged at the side of the room, or on any other suitable support. The other arm of the bell-crank has secured to it another wire, L, which extends to the other rooms, or to other parts of the building, and which is secured to a device, J, similar to an ordinary bell-pull. The wires, bell-crank, and bell-pull constitute the liberating device.

The cord having been wound on the pulley B, and the weight W raised by the act of opening the valve, it is only necessary, to stop the engine, that the weight should be liberated from the stop E. This is done by simply pulling at J, which, by means of the bell-crank, withdraws the stop E from under the weight W, which instantly drops, and thereby unwinds that portion of the cord which is wound on the pulley or drum B and closes the valve.

The liberating device by which the stop is withdrawn from the weight may be variously constructed, and may be arranged with branches to various parts of the building or other places, whence it is desired to stop the engine; but the device shown serves as well as any other to illustrate my invention. Instead of the liberation being effected by a direct pull of the device the stop may be operated by the opening and closing of an electro-magnetic circuit by keys suitably arranged in different parts of the building, or in any suitable position whence it is desirable to stop the engine.

It is obvious that the weight may be attached direct to the shaft or stem of the throttle-valve by a cord, and held by a ratchet and pawl—the liberating cord in such case being connected to the pawl in such a manner as to release it from the ratchet, and thereby let the

weight turn or shut the valve. It is also obvious that instead of a weight a spring may be used to close the valve, a detent being used to hold the valve open, and the liberating cord being arranged to operate the detent and release the valve, so that it will be closed by the action of the spring, thus producing the same result.

In all cases the weight or spring should be arranged to move the valve just the distance required to close the valve.

The advantages of an arrangement of this kind, whereby the operatives in any and all parts of the building, no matter how remote from the engine, are enabled to stop it instantly, are too obvious to require enumeration, especially in large factories, for which it is more especially intended.

Having thus fully described my invention, what I claim is—

The combination, with the supply-valve of a steam-engine, of a weight or its equivalent, and a stop for releasing the same, said stop being connected by any suitable means with various parts of the building, and all arranged to operate substantially as described, whereby the operatives in the various portions of the building may stop the engine at will, as set forth.

WILLIAM H. DARLING.

Witnesses:

FRED. HAYNES,
R. E. RABEAU.