

(No Model.)

2 Sheets—Sheet 1.

J. NESBITT.
ENGINE OR MACHINERY STOP.

No. 469,213.

Patented Feb. 16, 1892.

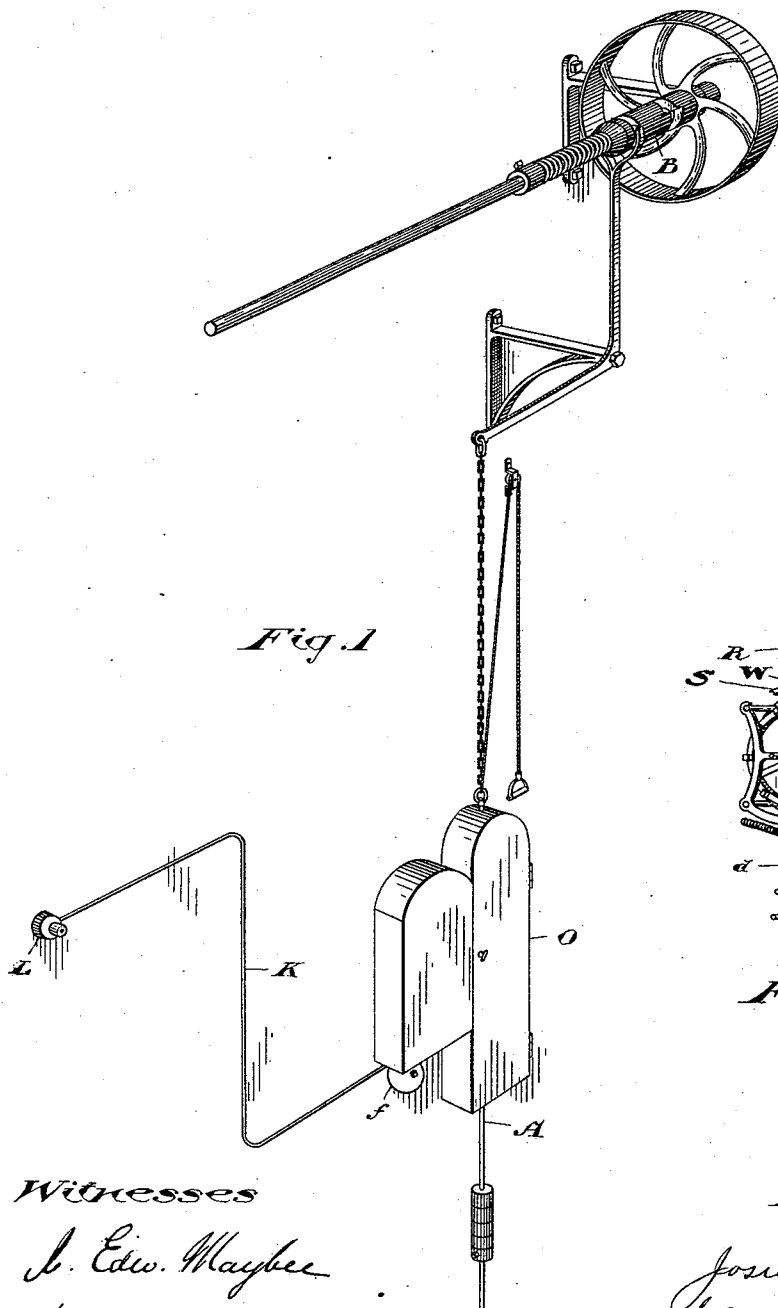


Fig. 1

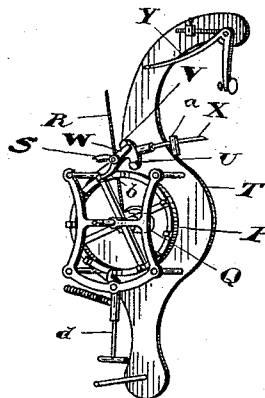


Fig. 3

Witnesses

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H. G. Mcmillan.

Inventor

Josiah Nesbitt
by Donald C. Ridout
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2 Sheets—Sheet 2.

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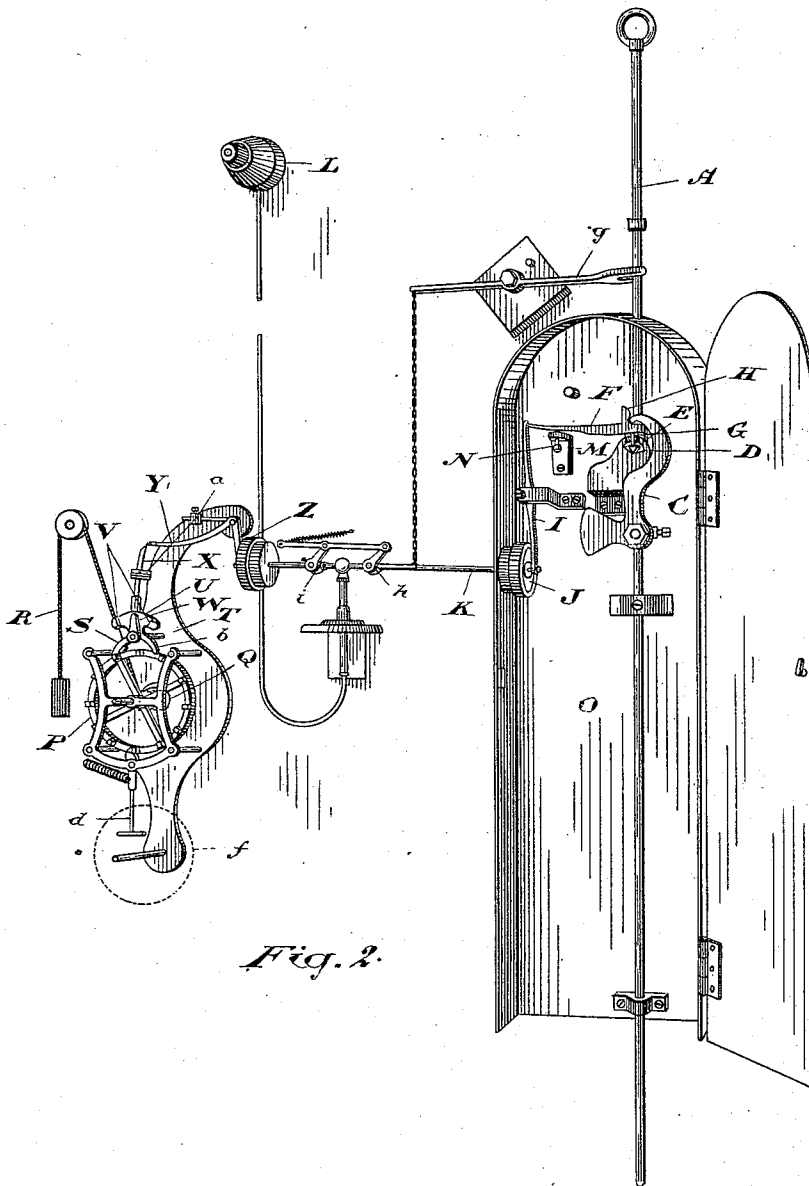


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSIAH NESBITT, OF TORONTO, CANADA, ASSIGNOR OF ONE-HALF TO JOHN J. COULTER, OF SAME PLACE.

ENGINE OR MACHINERY STOP.

SPECIFICATION forming part of Letters Patent No. 469,213, dated February 16, 1892.

Application filed May 15, 1891. Serial No. 392,921. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH NESBITT, machinist, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented a certain new and Improved Engine or Machinery Stop, of which the following is a specification.

The object of the invention is to devise a simply-contrived and sensitive operating mechanical device by which an engine or other machine may be instantaneously stopped; and it consists, essentially, of a simply-contrived and sensitive operating mechanism arranged in connection with a pneumatic tube or similar device by which the said mechanical device may be put into instantaneous motion and thereby arrest the machinery with which it is connected, substantially as hereinafter more particularly explained and then definitely claimed.

Figure 1 is a perspective view showing the general arrangement of my improved engine and machinery stop. Fig. 2 is an enlarged view of the mechanism connected with my invention. Fig. 3 is a detail of the gong mechanism.

In the drawings, A is a vertical bar connected in any suitable way to the driving mechanism the motion of which it may at the time be necessary to stop. In Fig. 1 I show it connected to a clutch B on the driving-shaft. As I claim nothing for the means of connecting the vertical bar to the machinery it is intended to stop, it will not be necessary to enter into a description in detail of the said mechanism, Fig. 1 being sufficient to indicate the connection between my invention and the machinery it is intended to be applied to.

C is a dog pivoted on the vertical bar A and shaped and weighted as shown, so that its normal position will be vertical, as indicated.

D is a stationary bracket recessed to receive a knife-edged projection E, formed on the lever F. This lever is entirely supported by the knife-edged projection E, and is prevented from falling out of position by the pin G, which projects through a slot made in the bracket D. A horn H is made on the end of the lever F and shaped to receive the end of

the dog C, as indicated in Fig. 2. The point of the dog C, which rests in the horn H, is almost immediately over the center of the projection E, so that the weight of the bar A, which is suspended by the dog C on the lever F, shall be borne by the knife-edged projection E, requiring but very slight power to hold the lever F in the horizontal position in which it is indicated in Fig. 2.

I is the pivoted latch by which the lever F is held in the desired position. The other end of the latch I is connected to a diaphragm J. This diaphragm is connected to the pneumatic pipe K, which extends to the point or points from which it may be desired to arrest the movement of a driving-power, the usual button L being used for that purpose. When it is desired to arrest the motion of the driving-motor, the button L is pressed upon in the usual way, which pressure causes the diaphragm J to move outwardly, thus rocking the latch I on its pivot and moving it clear of the end of the lever F, which lever will immediately tilt on its knife-edged projection E in such a way as to permit the dog C to drop clear of it, when the vertical bar A will fall and instantaneously throw the clutch B out of gear or whatever other mechanism it may be connected with. It will be observed that the bracket D has a curved end extending beyond the end of the lever F. This curved end on the bracket tilts the dog C when the bar A is raised to be reset and directs its end into the horn H, formed on the end of the said lever F. A fixed bracket M, provided with an adjusting-screw N, forms a support for one end of the lever F, the adjusting-screw being provided for the purpose of moving it to accommodate the pivoted latch I.

I have shown the mechanism arranged in a box O, as I consider it best to have the mechanism inclosed, so that it cannot be tampered with.

The stop mechanism described can easily be set by simply raising the bar A.

As it is advisable to have a gong arranged in connection with my mechanism, I arrange such a gong constructed and operated as follows: A toothed wheel P is fixed to the shaft

of a drum Q, on which a cord R, supporting a weight, is wound. A dog S is pivoted on the frame T and is designed to engage with one of the teeth formed on the wheel P. U is a bracket loosely pivoted on the spindle of the dog S and having lugs V formed on its face, between which lugs the tail W of the dog S is placed. An arm X extends from the bracket U and is shaped to engage with one end of the pivoted bell-crank Y. The other end of this bell-crank is connected to a diaphragm Z. An adjustable weight *a* is placed on the arm X for the purpose of causing the said arm, with its bracket U, to fall toward the bell-crank Y. When the bell-crank Y is tilted so as to be clear of the arm X, the said arm will fall past it, and one of the lugs V, striking the tail W of the dog S, tilts the said dog on its pivot, so as to carry it clear of the teeth with which it is engaged. The weight on the cord R will then cause the wheel P to revolve until one of the teeth in the wheel P strikes a projection *b*, formed on the bracket U, thus tilting the said bracket back. One of its lugs V strikes the back of the tail W and forces the dog S back into position to engage with the next tooth. Simultaneously with this the arm X is brought back into position to engage with the arm of the bell-crank Y. While thus moving the bell-hammer *d* is acted upon by one of the teeth in the wheel P, so as to rock it on its pivot and cause it to strike the gong *f*.

On reference to Fig. 2 it will be seen that the bell-crank Y is operated by the movement of the diaphragm Z, which is caused to move in the following manner: When the bar A drops, a collar formed on it is caused to strike the pivoted lever *g*, which is connected to the valve *h* in the pneumatic pipe K, which valve when the stop mechanism is set is open; but when the lever *g* is struck by the falling bar A the movement of the said lever closes the valve *h*, and as this valve is connected to the valve *i* in the pneumatic pipe K, leading to the diaphragm Z, the said valve *i* is immediately opened upon the closing of the valve *h*. In this way any movement of the button L will then act upon the diaphragm Z and put the gong mechanism into operation.

What I claim as my invention is—

1. A vertical bar A, suitably connected to the driving mechanism to be stopped, a dog C, pivoted upon it, the bracket D, and the lever F, having a knife-edged projection E, the said bracket D supporting said lever F, in combination with the pivoted latch I, arranged to engage with and hold the lever F, and means, as the pneumatic diaphragm J, for operating said lever, substantially as and for the purpose specified.

2. A lever F, having a knife-edged projection E, resting in a suitable support, the pivoted dog C, engaging therewith, the bracket M, and an adjusting-screw N, projecting from the same, in combination with the pivoted latch I and pneumatically-operated diaphragm J, substantially as and for the purpose specified.

3. The pneumatic pipe K, provided with an operating-button L, and the diaphragm J, connected thereto, in combination with the valve *h*, the pivoted lever *g*, suitably connected thereto, and the vertical bar A, arranged to operate said lever *g* by its downward movement, substantially as and for the purpose specified.

4. The diaphragms J and Z, and pneumatic pipe K, connected to said diaphragm J, and the valves *h* and *i*, located in the said pneumatic pipe and connected together, in combination with the lever *g*, suitably connected to the said valves, and the bar A, arranged to operate said lever *g* by its downward movement, substantially as and for the purpose specified.

5. The toothed wheel P, a suitable device for operating the same, the dog S for holding the wheel stationary, having the tail W, the pivoted bracket U, provided with projections *b* and having lugs V set on opposite sides of the tail W, the bell-hammer *d*, and gong *f*, in combination with the weighted arm X, connected to the pivoted bracket U and provided with a weight *a*, substantially as and for the purpose specified.

Toronto, May 7, 1891.

JOSIAH NESBITT.

In presence of—

CHARLES C. BALDWIN,
JOHN E. CAMERON.