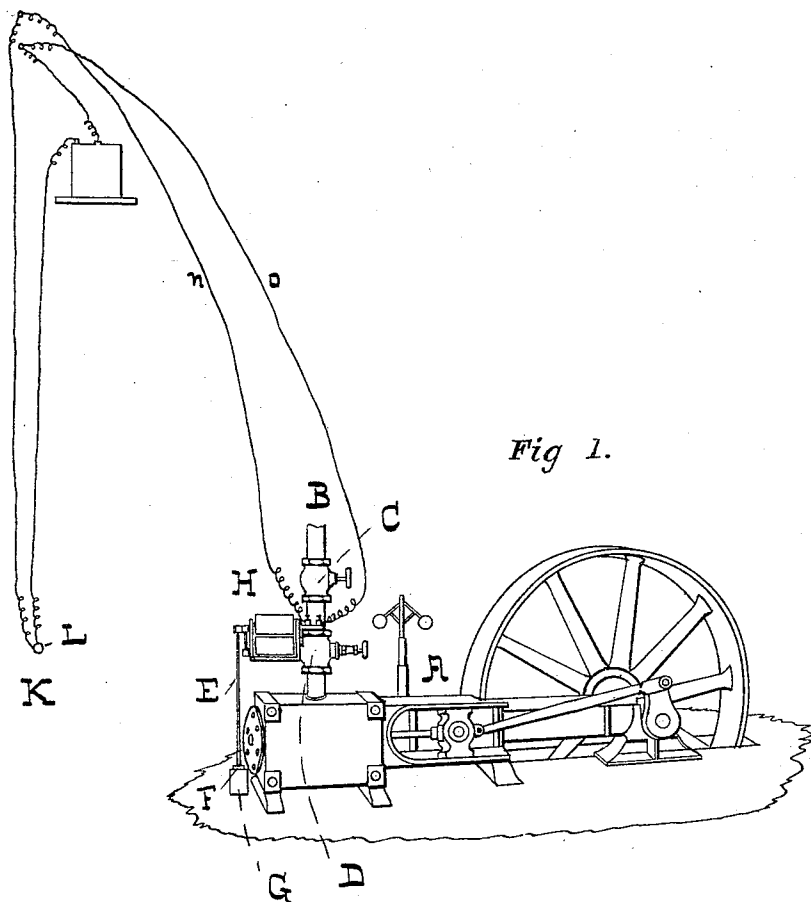


4 Sheets—Sheet 1.

No. 529,297.

Patented Nov. 13, 1894.



- WITNESSES -

Don't Fisher
George Hensley

-INVENTOR-

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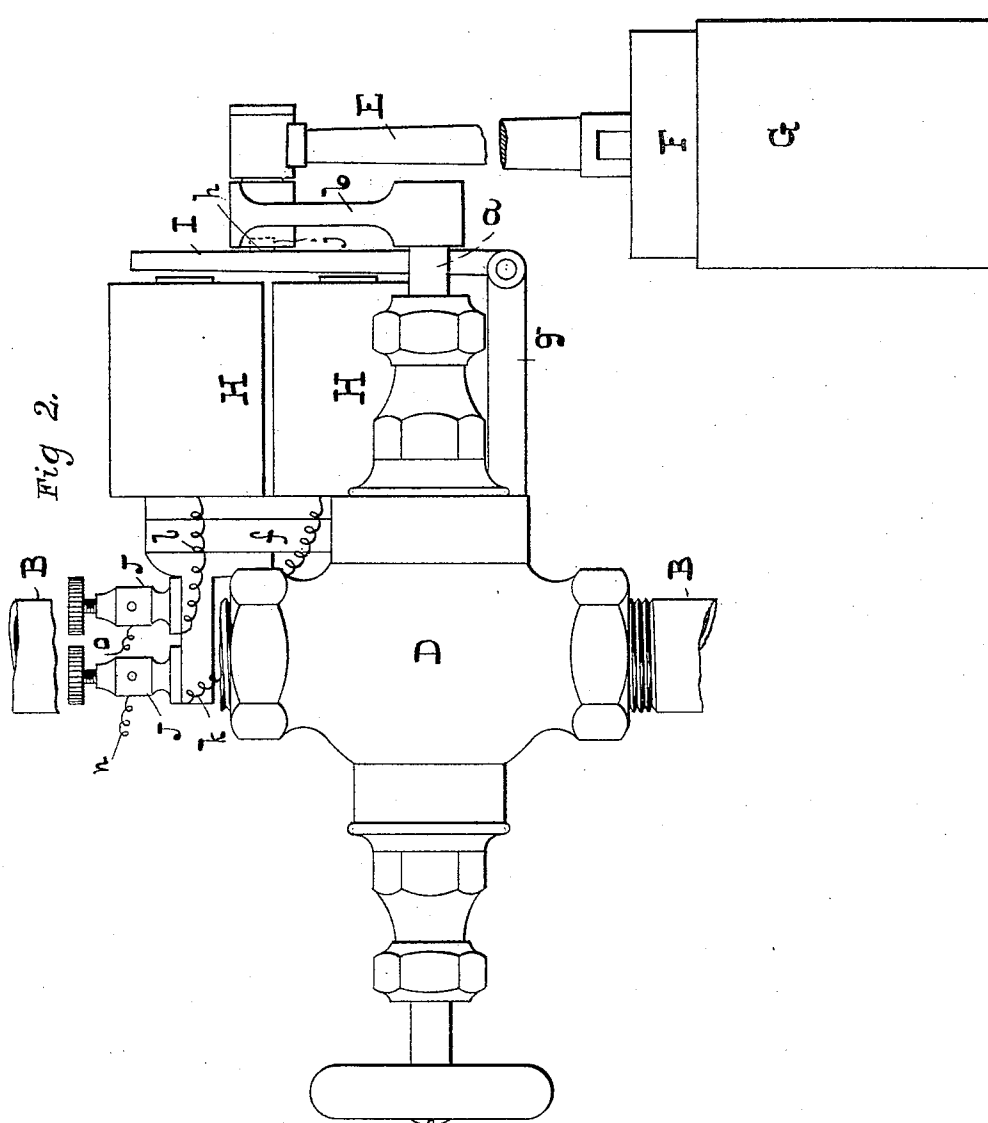
(No Model.)

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N. E. NASH.
STOPPING APPARATUS FOR ENGINES.

No. 529,297.

Patented Nov. 13, 1894.



-WITNESSES-

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(No Model.)

4 Sheets—Sheet 3.

N. E. NASH.
STOPPING APPARATUS FOR ENGINES.

No. 529,297.

Patented Nov. 13, 1894.

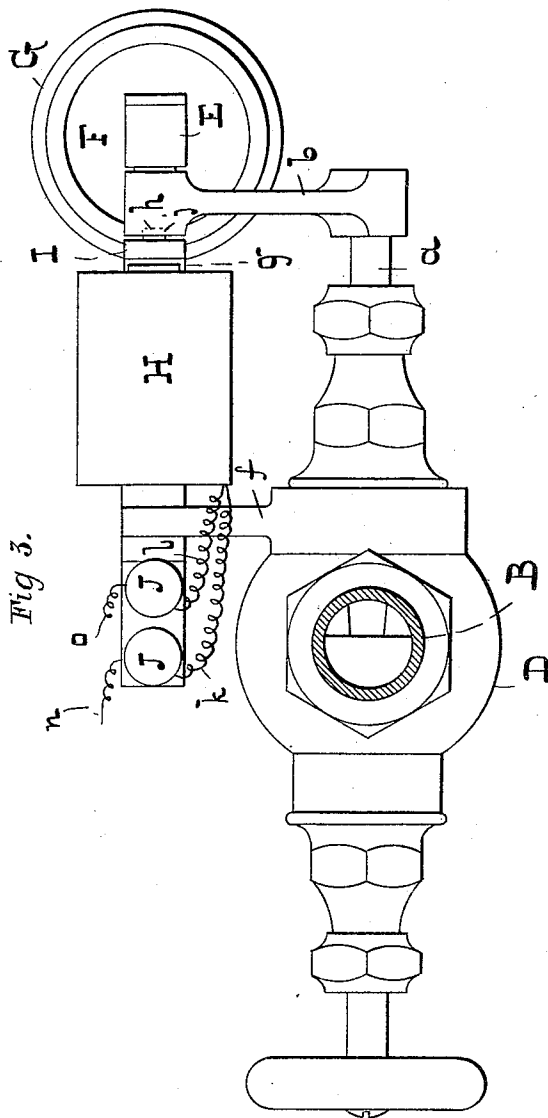


Fig. 3.

-WITNESSES-

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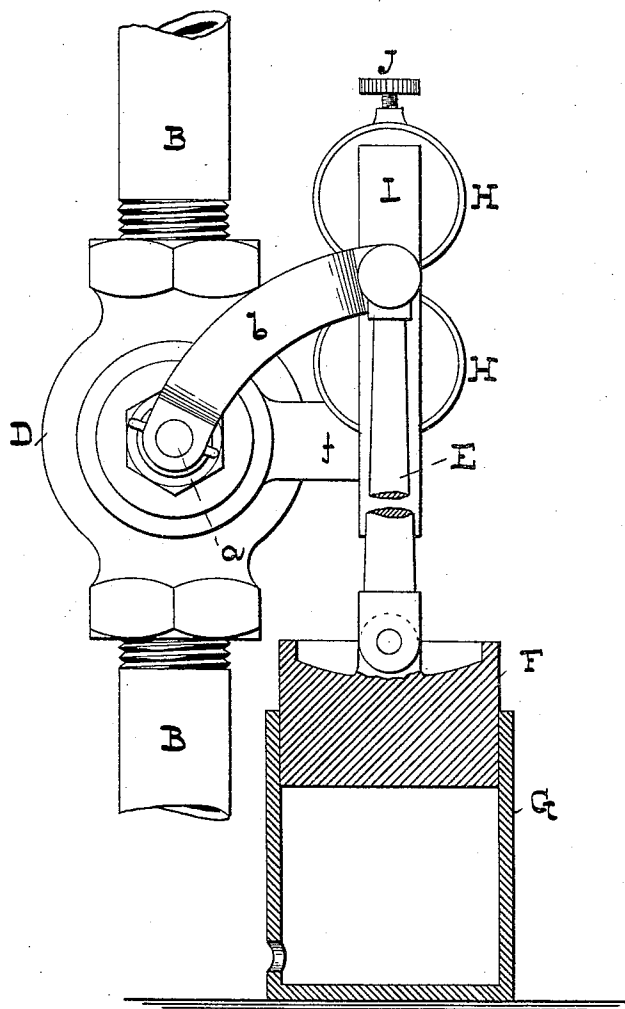
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N. E. NASH.
STOPPING APPARATUS FOR ENGINES.

No. 529,297.

Patented Nov. 13, 1894.

Fig 4.



-WITNESSES

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UNITED STATES PATENT OFFICE.

NATHAN E. NASH, OF WESTERLY, RHODE ISLAND, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE NASH-EDDY COMPANY, OF OHIO.

STOPPING APPARATUS FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 529,297, dated November 13, 1894.

Application filed April 25, 1894. Serial No. 509,014. (No model.)

To all whom it may concern:

Be it known that I, NATHAN E. NASH, of Westerly, in the county of Washington and State of Rhode Island, have invented certain

5 Improvements in Safety-Stopping Apparatus for Steam-Engines and Water-Motors, of which the following is a specification.

The object of this invention in common with others of its class is to provide means

10 whereby the driving steam engine or hydraulic motor, in a factory or shop, may be stopped from any one of a number of stations situated in different parts of the building, in case of accident to persons engaged in the est-

15 tablishment, or to the machinery. In the description of the said invention which follows, reference is made to the accompanying drawings forming a part hereof, and in which—

20 Figure 1 is a view of the principal part of a steam engine provided with my safety appliances, illustrating one of the many ways in which they may be employed or arranged. Fig. 2 is a side view of the valve, magnets,

25 armature, weighted arm, and a portion of the electric circuit wires on an enlarged scale. Fig. 3 is a top view of Fig. 2. Fig. 4 is an end view of Fig. 2 showing certain parts thereof in section.

30 Referring now to Fig. 1 of the drawings, A represents an ordinary steam engine, and B the pipe whereby steam is admitted to the engine. In the steam pipe B, is an ordinary throttle valve C whereby the engine is started

35 and stopped under ordinary or usual circumstances. D is a valve placed in the steam pipe below the throttle valve C. This valve may be of any suitable construction, provided it is susceptible of operation without undue friction. I preferably use a combined throttle valve and cock as shown in my application, Serial No. 506,259, or that illustrated in application, Serial No. 506,260, to which reference should

40 be made. Referring now to Figs. 2, 3, and 4, the stem whereby the valve or cock is operated to suddenly stop the engine, is denoted by *a* and the arm on the end of the stem, by *b*. The

50 outer end of the arm is jointed in any suitable

manner to a rod E hinged at its lower end to a weight F. This rod is preferably of such length as to allow the weight to fall to the floor when the cock is closed. The weight F is placed and adapted to slide in a receiving box G to prevent its becoming displaced

55 and also to guide it in its upward and downward movements. H represents a pair of electro magnets supported from the shell of the valve D by means of a bracket *f*, and I the armature pivoted to a stud *g*. The armature I is provided with a pin *h*, and the arm *b* with a hole *j* slightly larger than the pin, into which the pin may be inserted to retain the arm in an elevated

60 position. In the drawings the arm is shown in an elevated position, and the valve D consequently open. J J are ordinary binding posts whereby the wires *k* and *l* are connected to the circuit

70 wires *n* and *o*. Referring now to Fig. 1, K is one of a number of stations at which is placed a switch or circuit closer L.

Supposing the engine to be in operation, 75 and an accident occurs in the vicinity of the station K, requiring the immediate stoppage of the machinery, any workman or attendant by touching the push button of the circuit closer may stop the engine.

80 I claim as my invention—

In a safety stopping apparatus for steam engines, the combination with the steam pipe of an engine, of a rotary valve in the said pipe having an operating stem, an arm secured to the stem, a rod attached by means of a pin to the end of the said arm, a weight hinged to the lower end of the rod, a receiving box for the weight, a pair of electro magnets in an open electric circuit, a circuit

85 closer in the said circuit, and a hinged armature carrying a pin adapted to enter a recess or hole in the arm and thereby sustain the same until the circuit is closed, substantially as, and for the purpose specified.

NATHAN E. NASH.

Witnesses:

WM. T. HOWARD,
DANL. FISHER.