

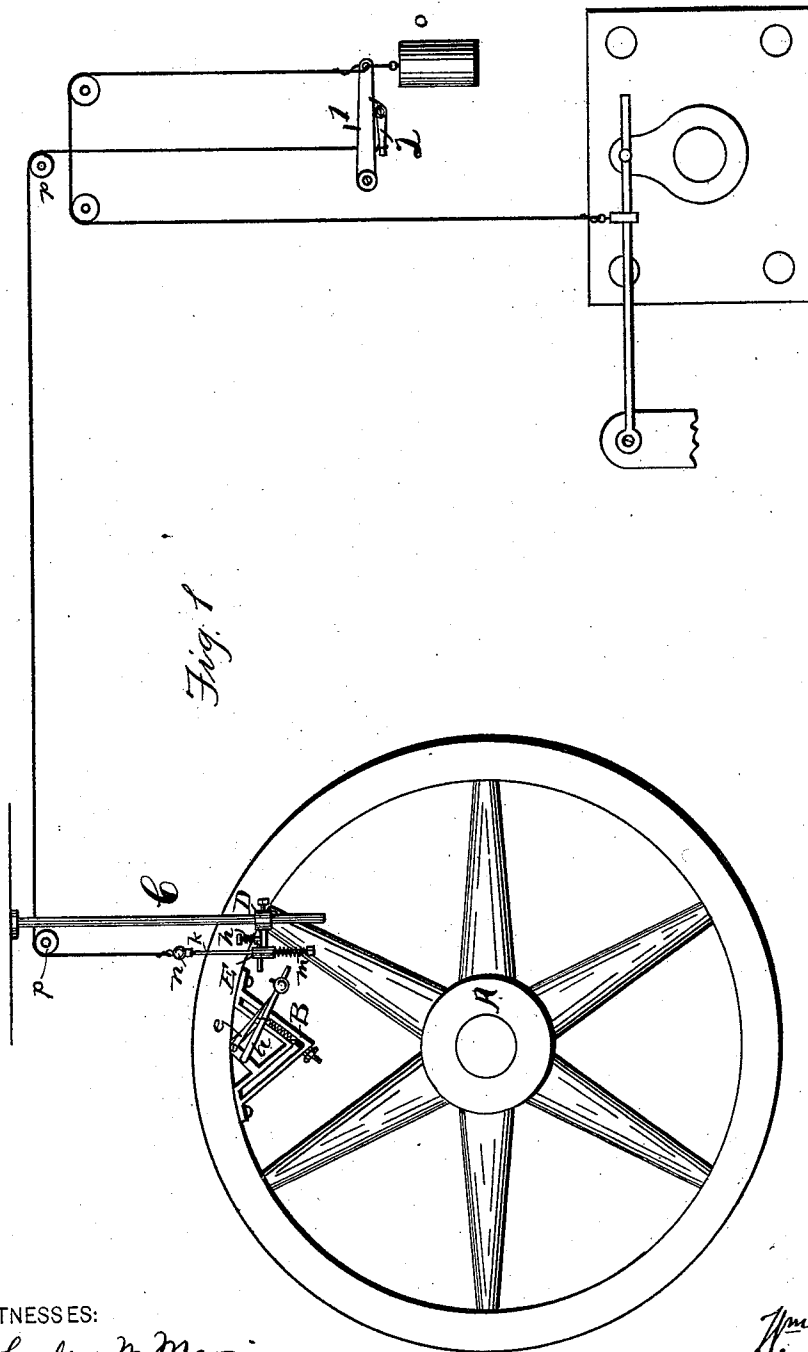
(No Model.)

2 Sheets—Sheet 1.

W. M. WOOD.
SAFETY DEVICE FOR ENGINES.

No. 529,672.

Patented Nov. 20, 1894.



WITNESSES:

Charles R. Marvin.
W. M. Bost.

INVENTOR

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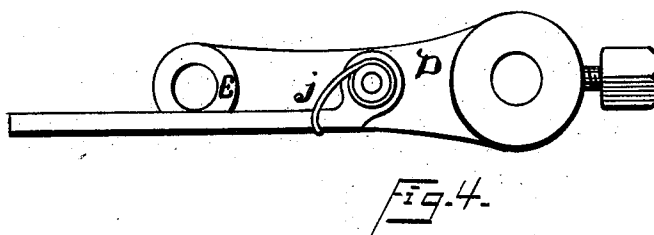
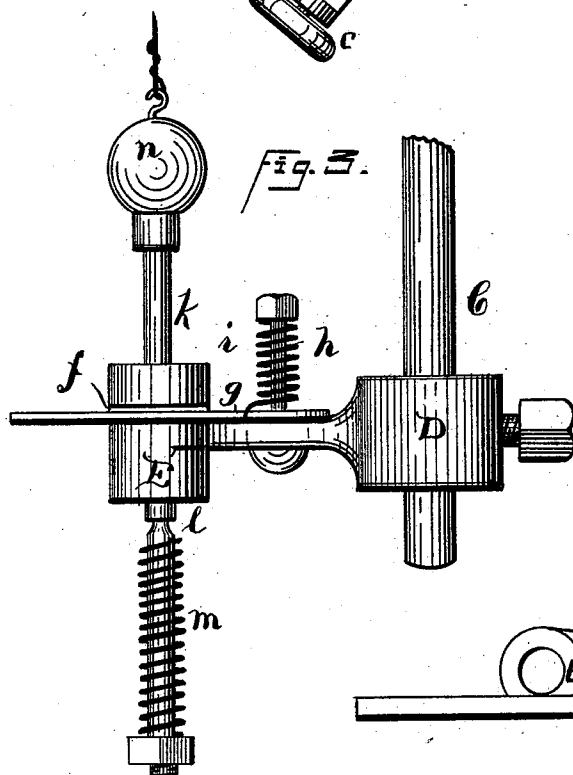
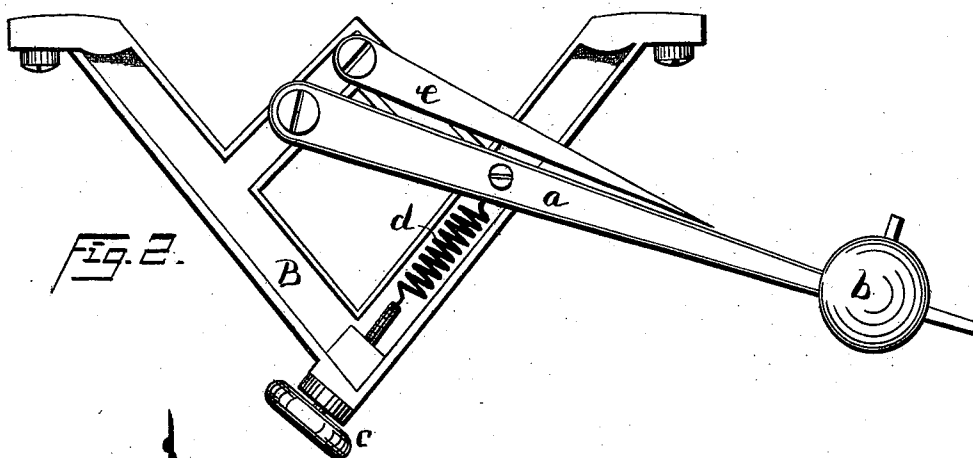
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SAFETY DEVICE FOR ENGINES.

No. 529,672.

Patented Nov. 20, 1894.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM M. WOOD, OF ELMIRA, NEW YORK.

SAFETY DEVICE FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 529,672, dated November 20, 1894.

Application filed January 25, 1894. Serial No. 498,037. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. WOOD, of Elmira, in the county of Chemung, in the State of New York, have invented new and useful
5 Improvements in Safety Devices for Engines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to safety devices for
10 controlling the speed of an engine, being more particularly adapted to stationary engines.

My object is to produce a device for stopping what may be termed runaway engines, so as to prevent the damage which results from
15 their too rapid operation, said device being adapted to be attached to the fly-wheel and which will operate by means of intermediate cords and levers to release a trip which, in turn, will either shut off the steam or other-
20 wise stop the engine.

To that end my invention consists in the several new and novel features and combination of parts hereinafter described and which are specifically set forth in the claims here-
25 unto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1, shows the view of a fly-wheel of
30 an engine to which my device is attached, showing the trip, intermediate cords and levers adapted to shut off the steam or otherwise stop the engine. Fig. 2, is an enlarged view of the bracket upon which is mounted the de-
35 vice which releases the trip, when the fly-wheel rotates at a dangerous speed. Fig. 3, is an enlarged detail of the trip mechanism, showing a part of the rod upon which it is mounted. Fig. 4, is a top plan view of the
40 trip mechanism, detached.

A— is a fly-wheel of a stationary engine, constructed and adapted to operate in the ordinary way.

B— is a bracket, of any ordinary construction, adapted to be secured to the inner edge
45 of the fly-wheel, as shown. Upon the bracket is pivoted an arm —a— adapted to carry upon its free end a weight —b— which may be provided with means for securing it at any
50 point desired thereon, and —c— is a thumb-screw entering the bracket at its apex or inner side, and provided with a coiled spring,

—d—, or any other elastic material having its opposite end secured to the arm —a—.

The object of the thumb-screw is for the 55 purpose of varying the tension upon the spring —d—, and —e— is an indicating hand, and secured at any convenient place upon said bracket, having its free end adapted to engage with, or lay alongside of, the outer 60 edge of the arm —a— so as to mark the greatest outward movement of the arm —a—, or the exact position of the weight on the end of said arm.

C— is a rod, or shaft, extending from the 65 ceiling down to the side of the fly-wheel, as shown in Fig. 1; and —D— is a bracket constructed substantially as shown, adapted to be slidably secured by a thumb-screw, or in any other manner desired, upon the shaft —c—, 70 the opposite end of said bracket being provided with a cylinder —E— having a transverse slot-way —f— therein, as shown; and —g— is a latch, or arm, pivoted upon the upper face of the bracket and concentric there- 75 with is secured a post —h— upon which is mounted a coiled spring —i— having means at its upper end for limiting its upward travel, and its lower end —j— extending over and in engagement with the outer edge of the arm 80 —g— so as to produce a tension to keep said arm in engagement with the transverse slot-way —f—.

—k— is a rod having a notch —l— therein adapted to freely pass through the opening 85 in the cylinder —E—, and —m— is a coiled spring mounted upon the lower end of said rod —k— and provided with means at its lower end for limiting its travel, and having its upper end adapted to engage with the 90 lower face of the cylinder —E— so as to limit its upward travel so as to produce a tension when the rod —k— is drawn up until the arm —g— engages with the groove or notch —l—, to force it downward when it becomes disen- 95 gaged; and to assist in forcing the rod —k— downward I may also use a weight —n— upon the upper end of the rod —k—.

—1— is an arm pivoted at one end and having its opposite end provided with an eye to 100 which a weight o is attached, and —2— is a catch adapted to hold the arm —1— up, as shown in Fig. 1, until the catch —2— is raised so as to release it. The catch —2— is con-

connected by a cord leading over a series of pulleys, or idlers *p*, if desired, to the rod —*k*— as shown, and the free end of the arm —1— is connected to any device desired to shut off the steam, or other means for stopping the engine. This not being a part of my invention, I will not further describe it, as it will be evident that various means may be used for producing this result.

10 My invention is operated as follows: When the engine is started, the rotation of the fly-wheel causes the arm —*a*— with the weight —*b*— upon its outer end to begin to move outwardly, caused by centrifugal force, it being limited to a certain extent by the spring —*d*—. When the fly-wheel begins to rotate at a dangerous speed, the centrifugal force throws the arm still farther up, and said arm, the weight, or a lug upon the weight, operates 20 to throw the arm —*g*— out of the slot-way —*f*— and out of engagement with the notch or groove —1— in the rod —*k*—. The tension then produced by the spring —*m*— forces said rod —*k*— downwardly, and this in turn, 25 by means of its intermediate cord, releases the catch —2— which, in turn, trips the arm —1— and allows the weight to drop or to release a spring for the purpose of turning off the steam or otherwise stopping the engine.

30 In the drawings I have shown means for stopping the engine by releasing a weight. I do not limit myself to this method, as it will be very evident that many other devices may be used for producing the same result, my

invention consisting merely in producing the means for releasing or setting in operation devices of any construction to stop the engine when it gets to running too fast.

Having described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A safety device for an engine comprising a bracket adapted to be secured to the fly-wheel and having an arm pivoted thereto, means for yieldingly limiting its outward travel, and an index arm adapted to engage with the outer face of said arm.

2. A trip mechanism comprising a cylinder having a transverse slot-way therein, a rod having a groove adapted to pass through said cylinder, an arm adapted to engage yieldingly with said groove, and means for mounting said cylinder and arm.

3. A trip mechanism comprising a cylinder having a transverse slot-way therein, a rod having a notch or groove therein, an arm adapted to yieldingly engage with said slot-way and groove, and means for forcing said rod downwardly through said cylinder, when the arm is out of engagement with said notch, and means for mounting said cylinder and arm.

In witness whereof I have hereunto set my hand this 3d day of November, 1893.

WM. M. WOOD.

In presence of—

C. W. SMITH,
HOWARD P. DENISON.