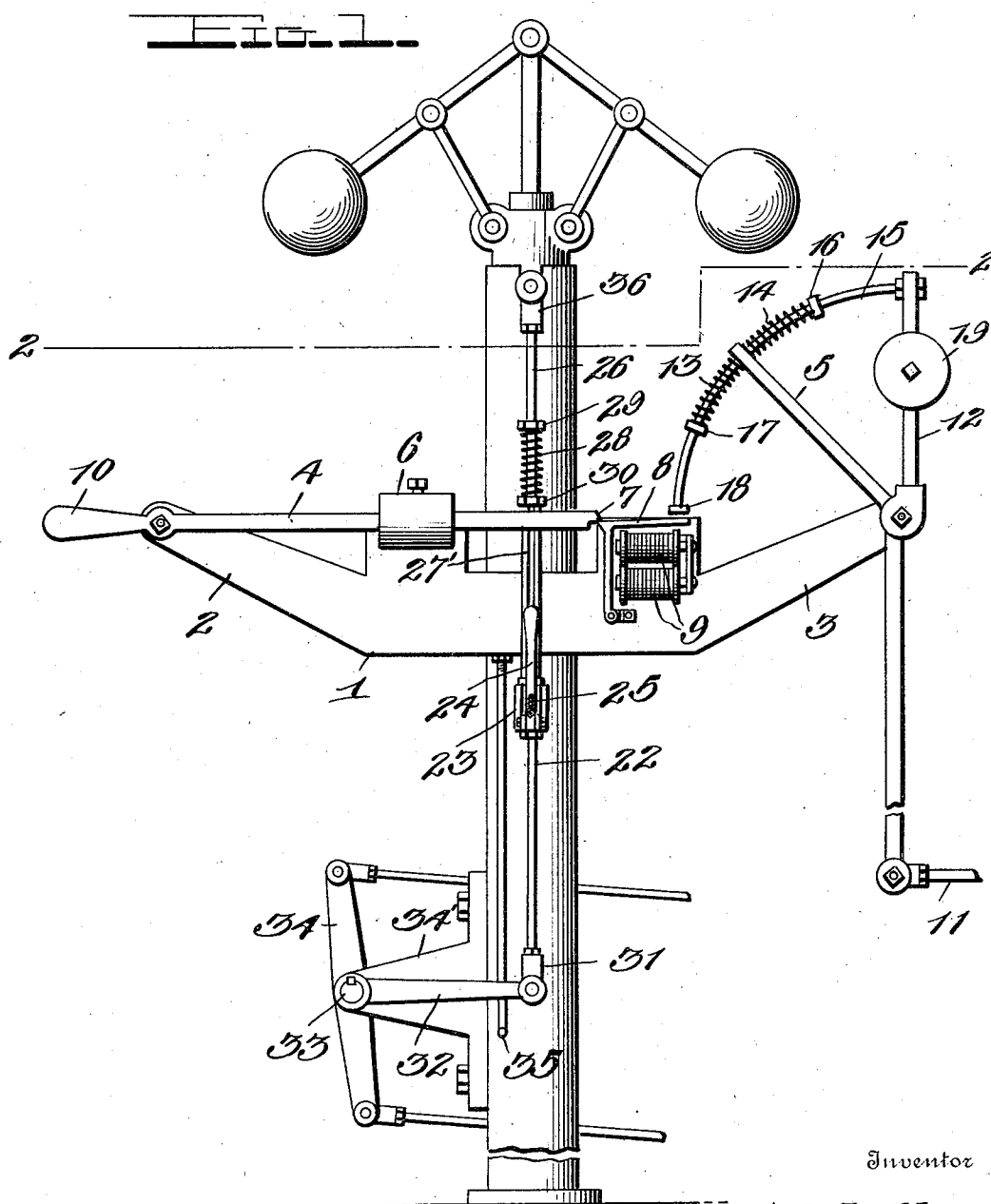


W. A. MUELLER.
ENGINE STOP AND SPEED LIMIT.
APPLICATION FILED AUG. 4, 1911.

1,029,023.

Patented June 11, 1912.

2 SHEETS-SHEET 1.



Inventor

William A. Mueller,

Witnesses

Chas. L. Griesbauer.

A. B. Norton.

By

Watson E. Coleman,

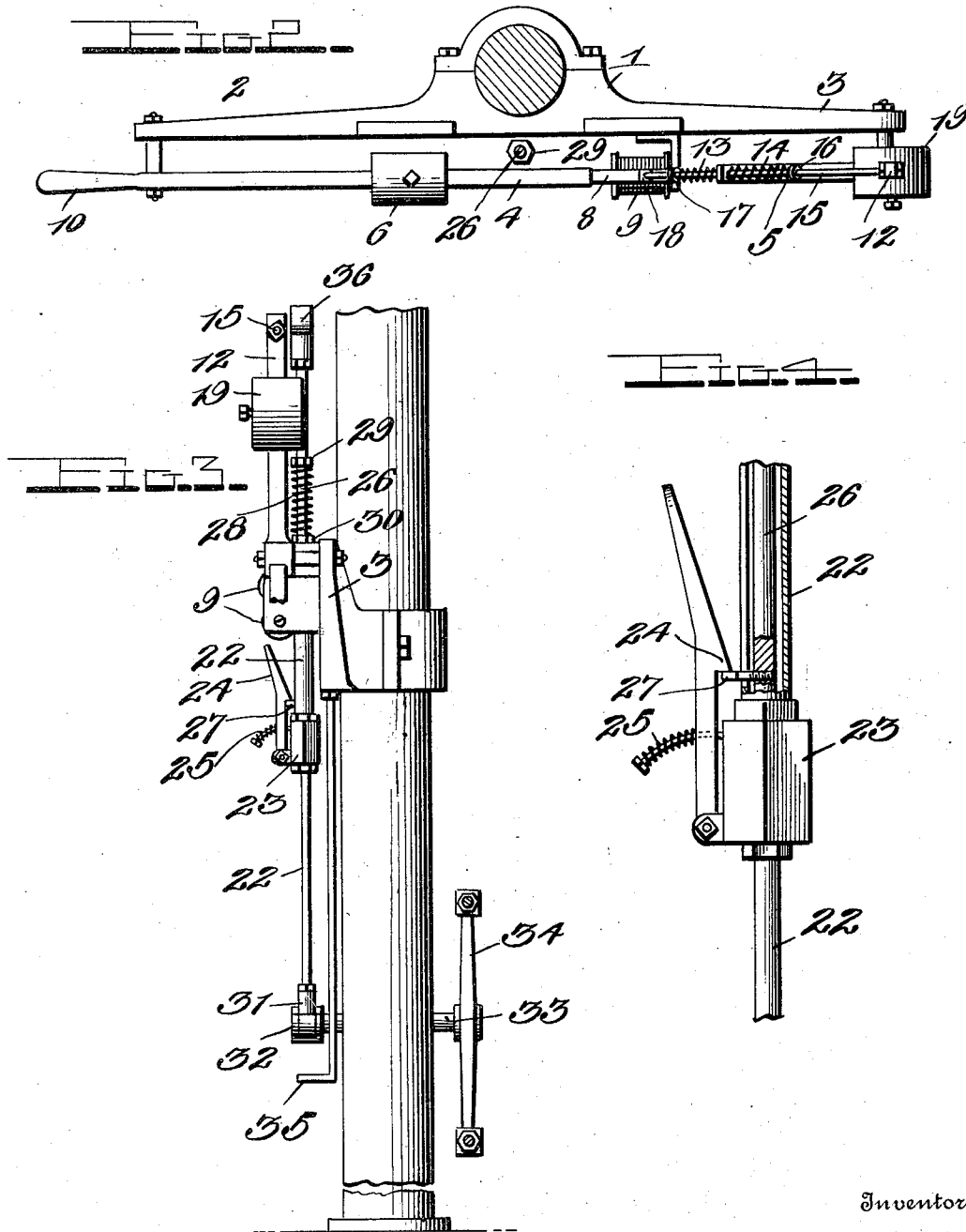
Attorney

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Chas. L. Greckauer.
A. B. Norton.

By

Watson E. Coleman.
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM ANTON MUELLER, OF BATH, SOUTH DAKOTA, ASSIGNOR OF ONE-HALF TO
JOHN L. SULLIVAN, OF DECATUR, ILLINOIS.

ENGINE-STOP AND SPEED LIMIT.

1,029,023.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed August 4, 1911. Serial No. 642,281.

To all whom it may concern:

Be it known that I, WILLIAM A. MUELLER, a citizen of the United States, residing at Bath, in the county of Brown and State of South Dakota, have invented certain new and useful Improvements in Engine-Stops and Speed Limits, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to engine stops and speed limit systems for engines and has for its object to provide a simple and efficient device for this invention which may be used with the ordinary type governor.

Another object of this invention is to provide means whereby the engine will be automatically stopped, should the governor fail for any reason.

Another object of this invention is to have it arranged so that it will automatically stop the engine should the speed become excessive.

A further object of this invention is to provide means whereby the stop will be of such a character and construction that it can be readily operated from any convenient location in the building.

A still further object of this invention is to have the apparatus of such a nature that it can be readily and cheaply manufactured, and quickly installed in position.

Other objects of this invention will become apparent as it is more fully set forth.

Referring more particularly to the drawings which illustrate an embodiment of this invention: Figure 1 represents a view in elevation of an engine stop and speed limit embodying this invention; Fig. 2 is a detail plan view of this device; Fig. 3 is an end elevation of Fig. 1, and Fig. 4 is a detail of a trip mechanism used in this invention.

Similar reference characters refer to similar parts throughout the drawing.

In the construction shown in the drawing, 1 represents a supporting member that is arranged to be mounted on a governor column of a Corliss engine, and which has arms 2 and 3 arranged to receive the means that pivotally secure the lever 4 and bell crank 5, and an arm 12 thereto.

A weight 6 is mounted on the lever 4, and arranged to be adjustably secured thereto, so as to adapt the latter to the conditions arising. The inner portion 7, of the lever 4, is notched in order to suitably en-

gage it with a projection or toe of an L-shaped lever 8, which is secured to the member 1 in front of an electromagnet 9; that is adapted to attract and pull the same over when current is sent therethrough. The outer end of the lever is provided with the handle 10 for raising the same when the notched portion 7, is to be engaged with the armature 8.

The link 11, connects the lower arm of the bell crank 5 with the eccentric rod of the engine, so that the speed of the same will affect the bell crank and cause the upper arm thereof to actuate the arm 12 pivotally secured to the arm 3 and to the springs 13 and 14, and rod 15, and the intervening collars 16 and 17. The collars 16 and 17 are provided with screws or other means so that they can be adjusted on the rod 15 and give the desired tension to the springs 13 and 14.

A cap 18 is mounted on the end of the rod 15 so that a removable surface will be provided therefor, that is, on the portion of the rod 18 where engagement is made with the armature 8 when the speed of the engine causes the same to extend over sufficiently to engage with it.

The numeral 22 represents a reciprocating rod. A lower portion of the rod 22 adjacent to the lever 4 in its normal position, has a nut 23 provided thereon for holding a suitable latch or catch 24, which engages with a toe 27 that is mounted on a rod 26, the latch and the toe being provided to keep the rods together in the position shown in Fig. 1. As best illustrated in Fig. 4, the upper portion of the rod 22 is tubular so as to permit the rod 26 to telescope therein. The spring 25 is provided for actuating the latch 24. The rod 26 has its upper end disposed in a coupling 36 that holds it securely in position. The rod 26, has its toe 27 arranged to slip in a slot 27' provided in the last mentioned rod when a spring 28, acting on the collars 29 and 30 connected, respectively, to the rods 26 and 22, forces the rod 22 downward, when the latch 24 is tripped. When the rod 22 is forced down, it actuates the valve mechanism of the engine through a coupling 31, a lever 32, a shaft 33, and a rocker bar 34, secured thereto.

34' is a suitable means to support the shaft and 35 is a suitable stop for control-

ling the downward movement of the lever 32 when it falls, after the armature 8 is tripped.

In operation the eccentric rod causes the bell crank 5 to oscillate as the former reciprocates, and to in turn compress the springs 13 and 14 and oscillate the rod 15, together with the arm 12 and the weight 19. This action brings the cap 18 in proximity to the armature 8, but should not cause the cap to engage with the latter until the rate of reciprocation of the eccentric is sufficiently great to cause the momentum of the arm 12 with its weight 19, to compress the springs 13 and 14 enough to extend the rod 15 over to the armature 8. When the cap engages with the armature 8, it causes the same to move on its pivot and to disengage with the notched portion 7 of the lever 4, which thereby permits the latter to fall. The lever in its fall strikes the latch 24, and causes the same to move outwardly against the action of its spring 25, and which in turn disengages from the projection or toe 27, and thereby permits the rod 22 to fall under the combined action of its own weight and the spring 28. The downward movement of the rod 22 causes the lever 32, shaft 33, and rocker bar 34 to actuate the valve mechanism of the engine to a closed position so that no steam will enter the cylinder thereby causing the engine to stop. The armature 8 can be actuated in a like manner, independent of the mechanism just referred to, by attaching its electromagnet 9 to an electric circuit and suitably disposing the wires thereof throughout the buildings and attaching push buttons thereto, in the usual manner so that current will flow through the same when the circuit is closed thereby. The armature is also arranged so that it can be tripped by any one in the vicinity of the device, should it be necessary for them to do so.

Obviously although there is shown but one form of this invention in the drawings it is not desired to limit the same to that particular construction or in any way otherwise than necessitated by prior art as many modifications in the construction of this invention may be made without departing from the principles thereof.

Having thus described this invention it is claimed:

1. In an engine, the combination with valve controlling means, including a governor and a sectional rod operatively connected to the governor, means tending to move one section of the rod into extended relation to the other section, a latch adapted to hold said sections together as against said extension, and means controlled by the eccentric of the engine independent of the governor for automatically releasing the latch at a predetermined speed of the engine.

2. In an engine, the combination with valve controlling means, including a governor and a sectional rod operatively connected to said governor, of means tending to move one section of the rod into extended relation to the other section, a latch adapted to hold said sections together as against the extending movement, a lever adapted to move the latch to released position, a trip for holding the lever in an inoperative position and a speed controlled oscillating arm designed to engage said trip to move it out of engagement with the lever.

3. In an engine stop of the character described, the combination of a governor, controlling means for said governor including a trip member, an oscillating member having a bent upper portion, means for connecting the lower portion of said lever with the moving part of the engine, a weighted arm pivotally connected to said lever and extending upwardly therefrom, a curved arm from the upper end of said weighted arm and loosely engaging the upper end of said oscillating lever, collars carried by said curved arm and positioned on opposite sides of said oscillating lever, springs positioned between said collars, and adjacent portions of said oscillating lever, the free end of said curved arm constituting an actuating portion for engaging the trip member when the speed of the engine becomes abnormal.

4. In an engine of the character described, the combination with a governor column, a governor mounted therein, a movable valve actuating member carried by the governor column, a transverse supporting member rigidly secured to the governor column, an extendible connection between the governor and the movable valve controlling member, a latch for normally preventing expansion of said extendible member, a supporting member rigidly secured to the governor column, a weighted lever carried by said supporting member and adapted to engage said latch to actuate the same to permit expansion of said extendible member, a trip member carried by said support and adapted to normally engage said lever to hold the same in an elevated position, a lever fulcrumed to said support and adapted to be connected to a movable part of the engine and means carried by said lever for actuating said trip member.

5. In combination with a Corliss valve controlling mechanism having a telescopic rod for actuating the valve mechanism thereof, of a mechanical and electrical device for actuating said rod, so that the same will cause the valve mechanism to stop the engine, the mechanical and electrical arrangements of said device being arranged to actuate the common trip for permitting a weighted lever to fall and cause said rod to actuate.

6. In combination with a Corliss valve
controlling mechanism having a telescopic
rod for actuating the valve mechanism
thereof, of a mechanical and electrical de-
5 vice for actuating said rod, so that the
same will cause the valve mechanism to
stop the engine, the mechanical and elec-
trical arrangements of said device being ar-
ranged to actuate a common trip for per-
10 mitting a weighted lever to fall and cause
said rod to actuate, said mechanical means
being connected to the moving parts of the
engine and arranged to actuate independ-
15 ently of the Corliss valve controlling mech-
anism.

7. In an engine, the combination with
valve controlling means, including a gov-
ernor and an expansible rod operatively
connected to said governor, of means tend-
20 ing to extend the rod, a latch arranged to
hold the rod against expansion, a lever mov-
able into engagement with the latch to re-
lease the same, a trip adapted to hold said
lever in an inoperative position, a bell crank
25 arranged to oscillate and adapted to be con-
trolled by the speed of the engine, and an

oscillating arm having a yielding connec-
tion with said bell crank and movable there-
with and adapted to release the trip from
the lever.

8. In an engine, the combination with
valve controlling means, including a gov-
ernor and an expansible rod operatively
connected with the governor, of means tend-
30 ing to extend the rod, a latch adapted to
hold the rod against the extending move-
ment, a lever adapted to move into engage-
ment with the latch to release the same, a
trip adapted to hold the lever in an in-
operative position, a weighted pivoted arm,
40 a rod carried thereby and adapted to be
moved by said arm into engagement with
the trip to release the same from the lever,
springs mounted on said rod, and an eccen-
tric controlled bell crank mounted on said
45 rod between said springs.

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

WM. ANTON MUELLER.

Witnesses:

W. H. ENLOA,
JEROME SPRATT.

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