

(No Model.)

A. J. BATES.
AUTOMATIC SAFETY STOP FOR ENGINES.

No. 508,671.

Patented Nov. 14, 1893.

Fig.1.

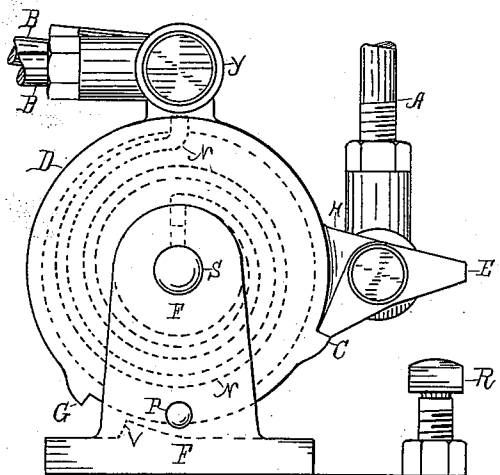


Fig.2.

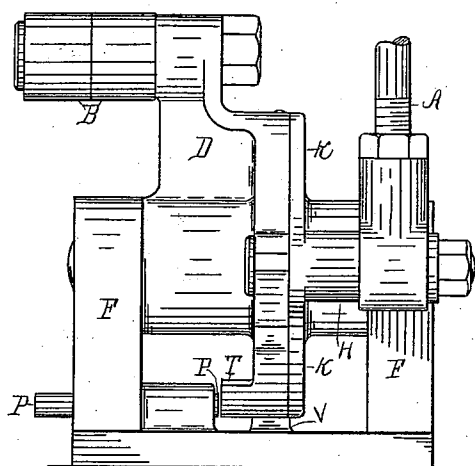


Fig.3.

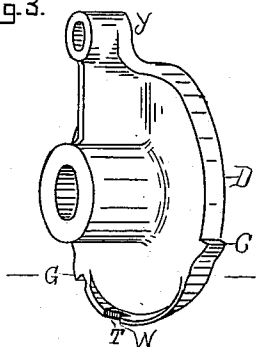


Fig.4.

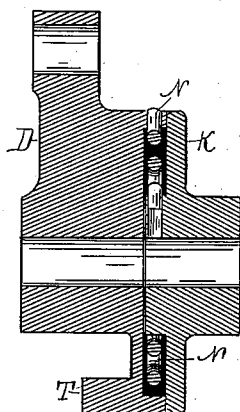


Fig.5.

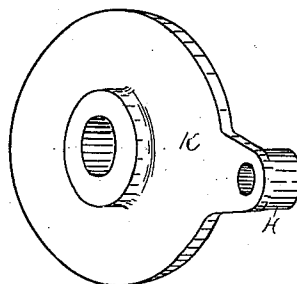
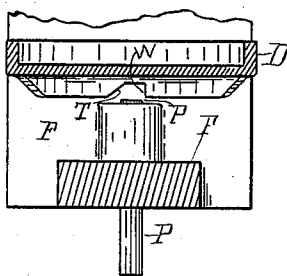


Fig.6.



Witnesses:

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UNITED STATES PATENT OFFICE.

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AUTOMATIC SAFETY-STOP FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 508,671, dated November 14, 1893.

Application filed May 12, 1893. Serial No. 474,016. (No model.)

To all whom it may concern:

Be it known that I, ALBERT J. BATES, a citizen of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Automatic Safety-Stops for Steam-Engines, of which the following is a specification, reference being had therein to the accompanying drawings and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is an end elevation. Fig. 3 is a perspective view of the disk designed to be connected with the inlet valves of an engine through the medium of rods pivoted to said disk. Fig. 4 is a central vertical section through the two disks and through a coil spring connecting them. Fig. 5 is a perspective view of the disk designed to be connected with the governor of an engine, and Fig. 6 is a horizontal section of the disk intended to be connected with the tripping device of the engine showing a laterally extending flange having a cam and tooth and showing a sliding pin for engaging said cam and tooth.

This invention relates to certain improvements in an "automatic safety stop" for steam engines, and designed to be located between the governor and the tripping device of a four valve cylinder, and connected in such manner that the governor will operate to cut off steam to the cylinder entirely, in case of accident.

Referring to the drawings, D and K, are a pair of disks journaled on shaft S, supported in the frame F. The two disks are connected with each other by means of a coil spring N located in an annular recess in disk D, the outer end of said spring being connected to disk D, near its periphery, and its inner end being connected to the hub of disk K. The disk K is intended to be connected with a governor through the medium of rod A, pivotally connected to said disk at H, and disk D is intended to be connected with the tripping device of a four valve cylinder by means of the rods B.

E is a pawl pivotally connected to disk K, at its point of pivot with rod A, at H, and is

intended to engage a tooth C on the periphery of disk D to oscillate said disk when the rod A descends and be disengaged therefrom by means of its outwardly projecting end engaging a stop R, beneath it, when rod A descends far enough. The disk D is provided with tooth G for engaging a stop V on frame F, for limiting the oscillation of said disk. Said disk D is also provided on its lower outer side with a laterally extending tooth W, and a cam T, shown in Figs. 3 and 6, said tooth being for the purpose of engaging the inner end of the sliding pin P to prevent pawl E from coming in contact with stop R, when the governor is at rest. When the engine is started and the governor rod A descends, the disk D will rotate and by means of the cam T force pin P, out, so that the mechanism is free to act in case of accident.

When the device is in operation and the engine is in motion the parts are in the position shown in Fig. 1 as stated, the pawl E engaging tooth C on disk D. In case the governor should stop on account of any accident to the belt or otherwise, the rod A, will descend bring the projecting arm of pawl E against the stop R, and thereby cause said pawl to be disengaged from tooth C on disk D, which allows disk D to be rotated by means of the coil spring N to such point as will restore rods B, to the position of the earliest point of cut off, or will prevent the valves from opening, thereby stopping the engine. When stopping the engine, the engineer pushes in pin P, which comes in contact with tooth W on disk D, and prevents such a rotation as would cause tripping. When the engine is started again the disk D rotates and by means of cam T, forces pin P out so that the mechanism is free to act in case of accident.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. In an automatic stop for steam engines the combination of disk D, having the teeth C, G, W, and cam T, disk K, pawl E, pivotally connected to disk K, coil spring N, interposed between and connecting said disks, frame F, shaft S, sliding pin P, stops R and V and means for respectively connecting said disks

with the tripping device and governor of a steam engine all arranged to operate substantially as and for the purpose set forth.

2. In an automatic stop for steam engines,
5 the combination of a disk carrying a pawl and connected with the governor of the engine, a disk connected with the tripping device of the engine, a coil spring between said

disks and connected thereto, and the means for detachably connecting said disks and for 10 controlling their oscillation substantially as and for the purpose set forth.

ALBERT J. BATES.

Witnesses:

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