

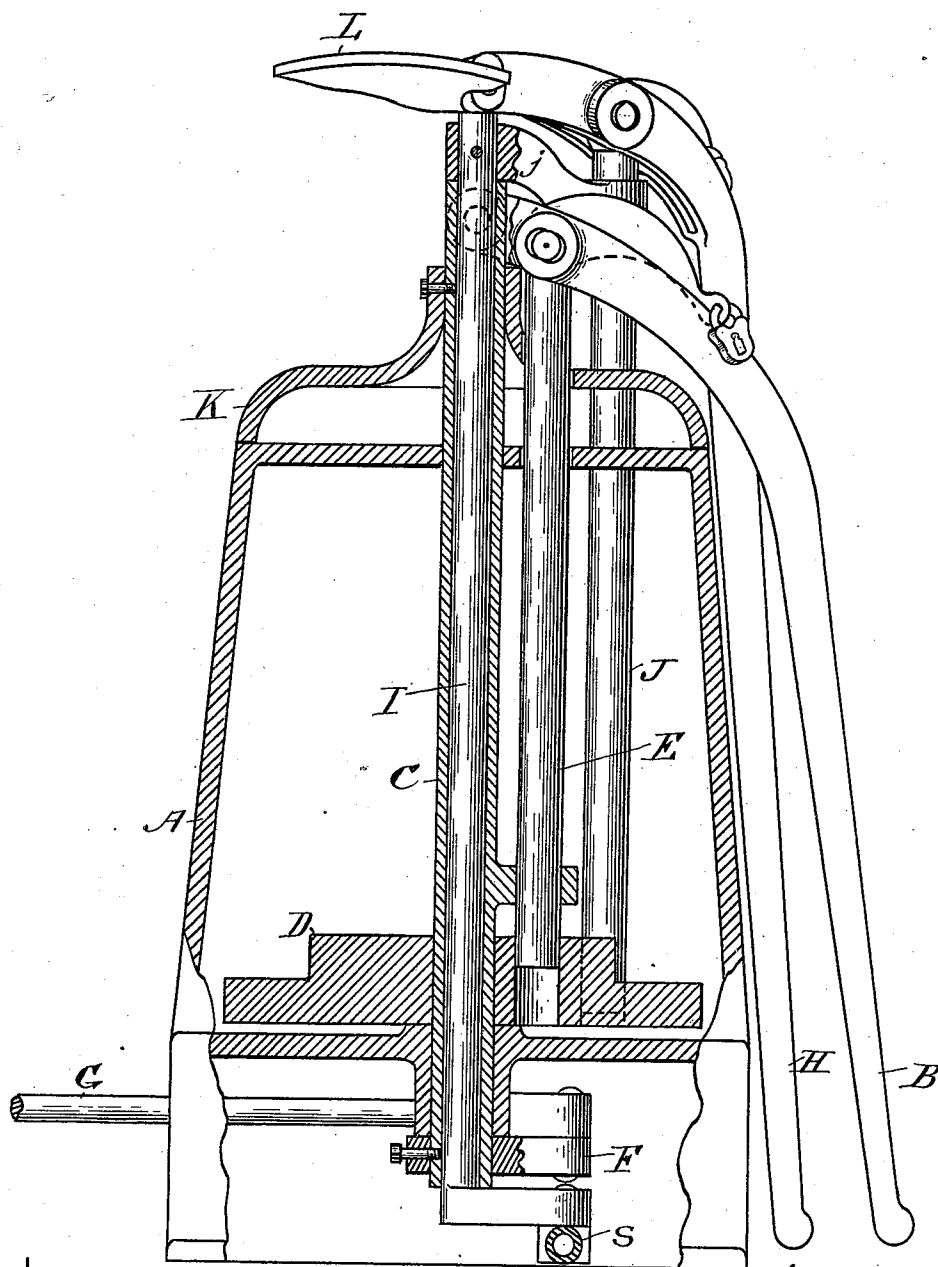
(No Model.)

3 Sheets—Sheet 1.

B. C. ROWELL.
SAFETY DEVICE FOR RAILROADS.

No. 548,224.

Patented Oct. 22, 1895.



WITNESSES

Mathew C. Coker
John R. Snow

FIG. 1.

INVENTOR.

Benton C. Rowell
by his attorney,
J. E. Maynard

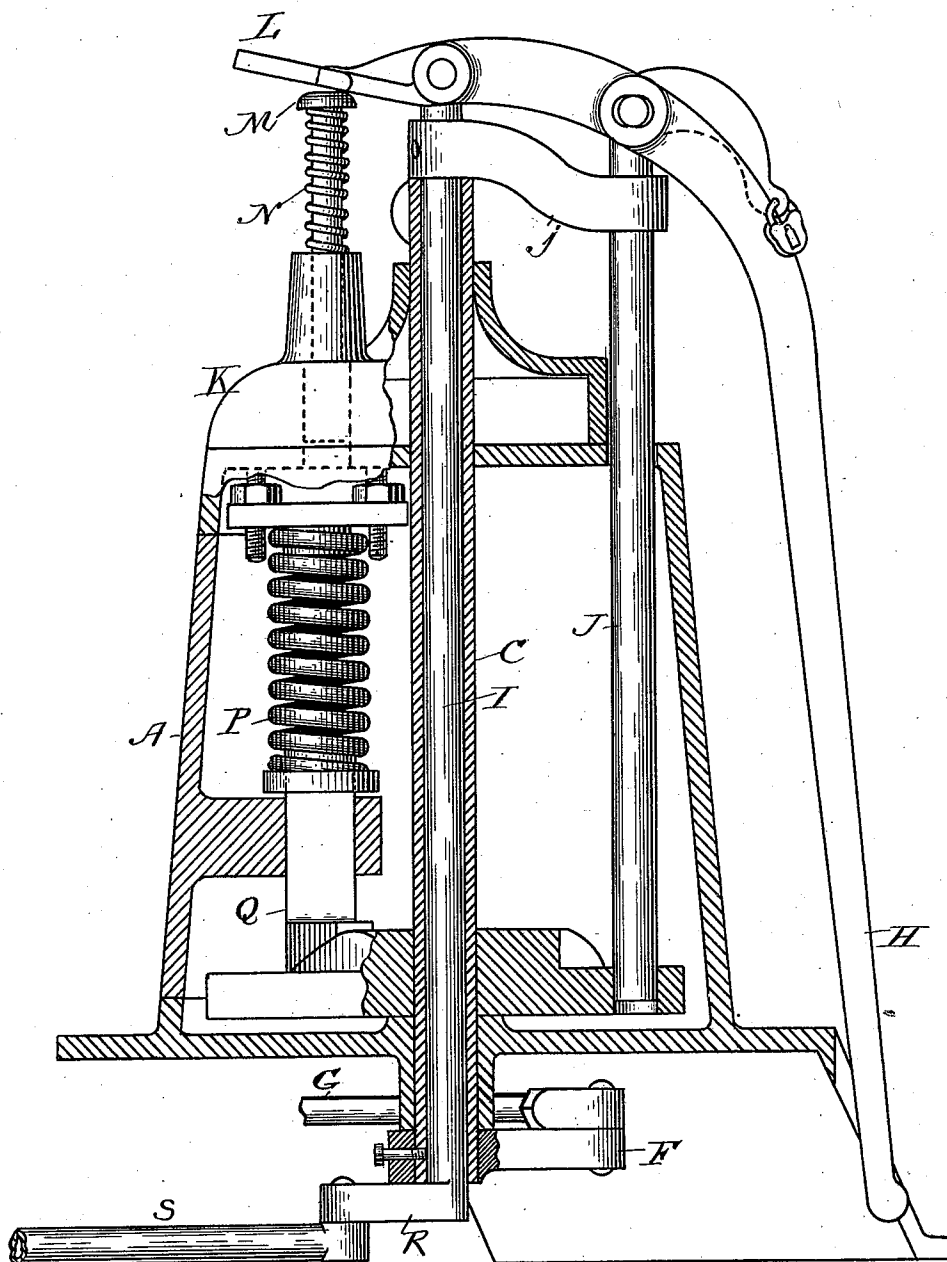
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WITNESSES

John A. Rowell
Matthew C. Cullen

FIG. 2.

INVENTOR
Benton C. Rowell,
by his attorney,
J. E. H. H. H. H. H.

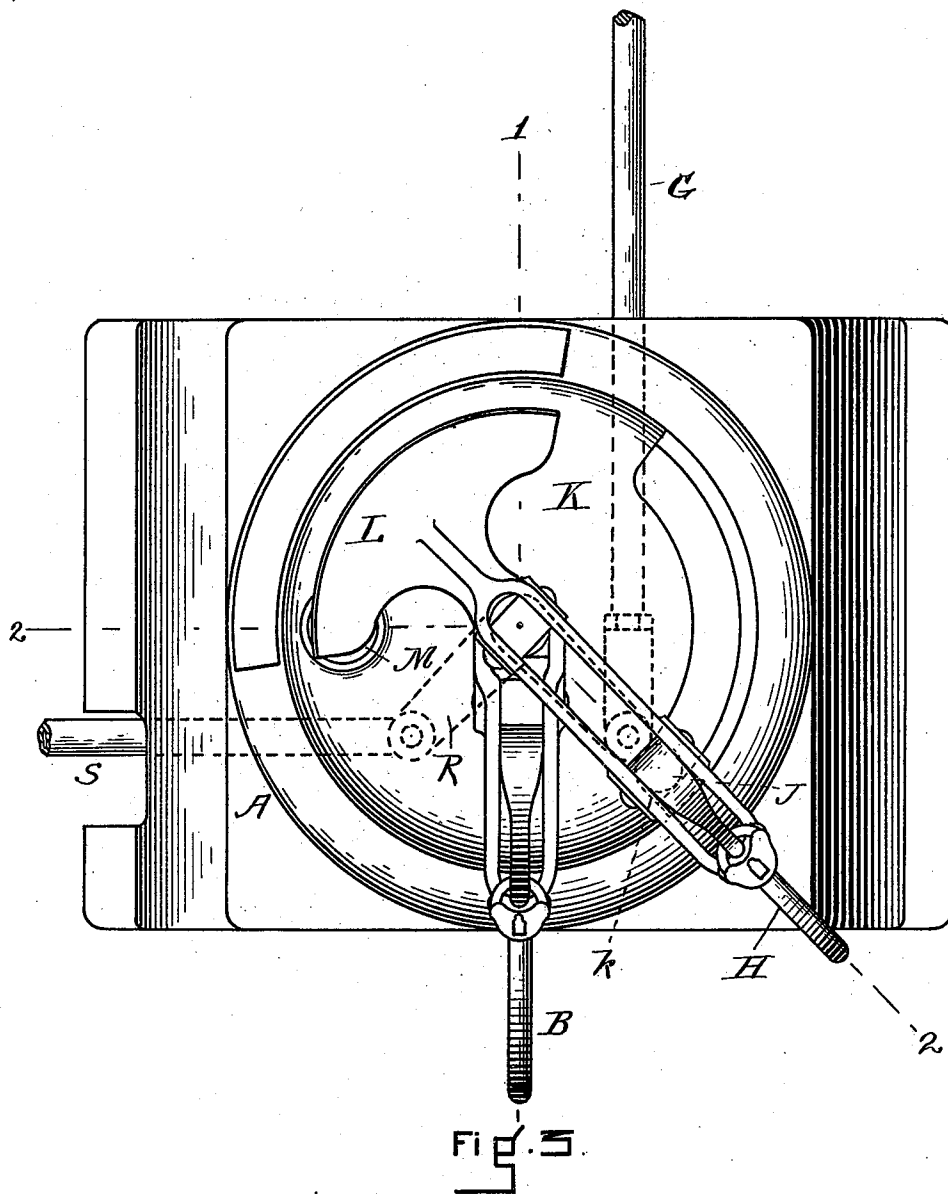
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SAFETY DEVICE FOR RAILROADS.

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Patented Oct. 22, 1895.



WITNESSES.

James C. Cady
John R. Snow

INVENTOR.

Benton C. Rowell
J. E. Maynard

UNITED STATES PATENT OFFICE.

BENTON C. ROWELL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE
ROWELL-POTTER SAFETY STOP COMPANY, OF PORTLAND, MAINE.

SAFETY DEVICE FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 548,224, dated October 22, 1895.

Application filed December 8, 1893. Serial No. 493,180. (No model.)

To all whom it may concern:

Be it known that I, BENTON C. ROWELL, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and
5 useful Safety Device for Railroads, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figures 1 and 2 are sectional elevations on lines 1 1 and 2 2 of Fig. 3, which is a plan of
10 one form of apparatus embodying my invention.

My invention is the combination of apparatus for setting a switch or otherwise altering the line of rails with a safety apparatus
15 for setting a signal or the like and stops which prevent the operation of the switch apparatus to open the line except when the safety apparatus indicates "danger," so that whenever the line is opened or deflected by operating
20 the switch apparatus the safety apparatus must be set to indicate "danger."

By switch apparatus I mean to include not only ordinary switches but also drawbridges and, generally, devices by whose operation the
25 line is temporarily either opened or deflected, and by safety apparatus all devices for setting signals, either visible or audible, or of that character known as "safety-stops," wherein a part near the track and a corresponding
30 part on the train act to open a valve of an air-brake or otherwise stop the train or make a signal. Such devices are too well known to require description, and I have therefore shown in the drawings that embodiment of
35 my invention which consists in applying it to a well-known form of switch-stand, which is fully described in Patent, No. 490,576, dated January 24, 1893.

As an example of the best form of my invention, the rod G when moved endwise in one direction throws a switch, opening the main line and leading to a branch or siding, and when the main line is open it is necessary that those in charge of an approaching train
45 should know it, as by means of an audible or visible signal, or, better still, that the train should be brought to a stop by a safety-stop device, (such, for example, as that shown in Patent No. 217,144, dated July 1, 1879,) and
50 the rod S when moved endwise in one direc-

tion sets a signal or a safety-stop, or both, to indicate "danger."

The main feature of my invention is that the rod G cannot be moved endwise to open the line while the rod S is in position to indicate
55 "safety," nor can the rod S be moved from "danger" to "safety" until the rod G has been moved to close the line, because stops or abutments are used which prevent the motion of the rod G to open the line so long as the rod
60 S is in its "safety" position, and also prevent the motion of rod S from its position of "danger" to its position of "safety" until after rod G has been moved to close the line.

In the drawings, A is a case.

C is a hollow shaft mounted in case A, so that it can be turned on its axis.

B is a lever forked at its inner end to receive the upper end of shaft C, the fulcrum of lever B being trunnions fast to shaft C, so
70 that lever B may be moved about its fulcrum and also used to move shaft C about its axis, in order to move switch-operating rod G by means of crank F, which is fast on shaft C, but in order that shaft C may be thus moved on its
75 axis by lever B the outer end of that lever must be raised far enough to withdraw bolt E from cam D, the upper end of bolt E being pinned to lever B, as clearly shown in Fig. 1.

Cam D is locked by bolt Q and its spring
80 P, all substantially as in Patent No. 364,722, dated June 14, 1887, and all the parts above described are in substance the same as in that patent and will be understood by all skilled in the art without further description here.
85 An arm extending from bolt E and secured by a padlock to lever B serves to prevent the switch from being tampered with as long as the padlock is locked, as will be clear. Were these all the parts the operation would be as
90 usual with this class of switch-stands—that is, the switchman would unlock the padlock by which lever B is locked to the arm on bolt E, then lift the lower end of lever B until bolt E was clear of cam D, and then turn shaft C on
95 its axis and set the switch, when he would lower the outer end of lever B, thereby causing bolt E to enter another hole in cam D, and would also lock lever B to the arm of bolt E; but in a safety switch-stand embodying my
100

invention the switchman must also unlock the padlock which secures lever H to the arm on bolt J and lift lever H until bolt J is clear of cam D and then turn-shaft I on its axis, and thereby through crank R and rod S set the signal and safety-stop, either or both. The simplest device for securing this result is the cover K, fast to the switch-actuating shaft C, recessed, as shown in Fig. 3, so that the cover K cannot be moved to set the switch until bolt J, which is mounted in arm j, fast to the safety-shaft I, has been carried to the other end of the recess in cover K, and to do this requires the lever H to be lifted and moved to turn safety-shaft I on its axis and set the signal or safety-stop, or both. In this example the shoulder k, which bounds one end of the recess in cover K, acts with one side of bolt J as a pair of stops, which prevent motion of cover K, and consequently of shaft C, fast to cover K, so long as bolt J is not moved. Therefore, the motion of bolt J is a necessary preliminary to setting the switch controlled by rod G. Moreover, as an additional precaution the lifting of safety-lever H acts through plate L to depress bolt M and lock cover K to a stand A, so that switch-shaft C cannot be turned on its axis as long as safety-lever H is in use; but when safety-lever H has been lifted and carried around far enough to turn safety-shaft I and set the signal or safety-stop and then lowered bolt M is moved back by its spring N, and switch-lever B may then be lifted and carried around far enough to turn switch-shaft C and set the switch, and this will carry cover K with it, and shoulder k of the recess

in cover K will be set in such relation to bolt J that the safety-shaft I cannot be moved to alter the signal or reset the safety-stop until after switch-shaft C has been returned, carrying with it cover K and resetting the switch accordingly.

What I claim as my invention is—

1. In combination a lever; a hollow shaft controlled by that lever and controlling a switch or signal; a slotted plate fast to the hollow shaft; a second lever; a locking bolt working in the slotted plate; and a shaft, within the hollow shaft, controlled by the second lever and controlling a signal or switch, the ends of the slot in the plate co-operating with the locking bolt to prevent the switch being opened except while the signal is at danger, substantially as described.

2. In combination frame A; hollow shaft C; cover K fast to shaft C; shaft I and means for revolving the shafts, all substantially as shown and described.

3. In combination lever B, hollow shaft C, slotted plate K fast to the hollow shaft, lever H, fulcrumed near one end upon shaft I and carrying upon its short end plate L, the plate L, the shaft I, locking bolt J, cam D, bolt M and spring N, all organized and operating to prevent the switch or signal from being moved until the signal or switch has been completely thrown.

BENTON C. ROWELL.

Witnesses:

GEORGE H. BLISS,
JOHN P. LUXMORE.