C. A. EIB.

TRACK DEVICE FOR AUTOMATIC TRAIN STOPS.

APPLICATION FILED AUG. 3, 1914.

1,136,945.

Patented Apr. 27, 1915.

Fig. 1.

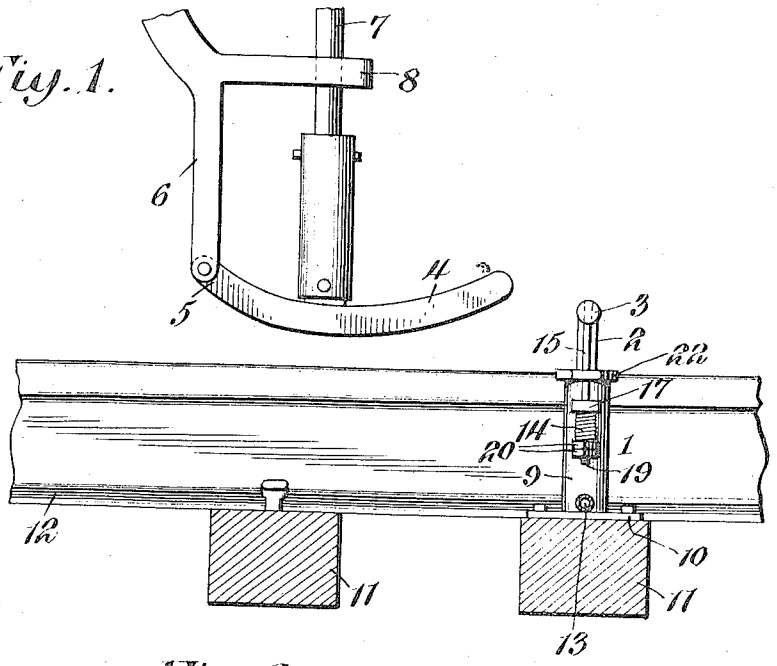


Fig. 2.

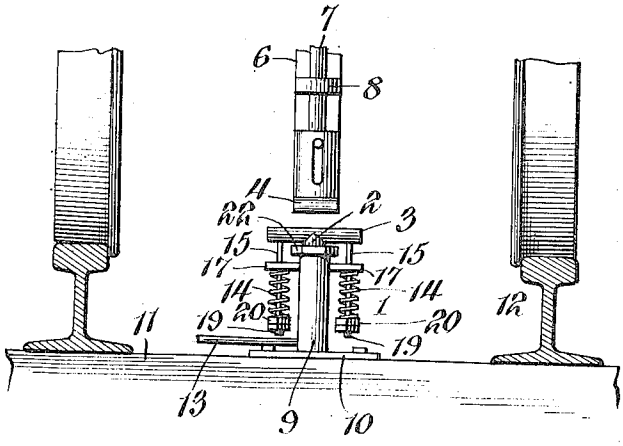
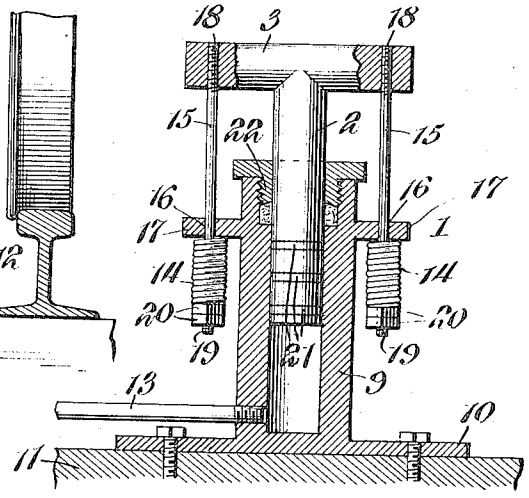


Fig. 3.



WITNESSES

Jas. E. McCathran

T. H. T. Riley

Charles A. Eib, INVENTOR

BY E. G. Siggers

ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES A. EIB, OF NEW BRUNSWICK, NEW JERSEY.

TRACK DEVICE FOR AUTOMATIC TRAIN-STOPS.

1,136,945. Specification of Letters Patent. Patented Apr. 27, 1915.

Original application filed October 8, 1913, Serial No. 794,107. Divided and this application filed August 3, 1914. Serial No. 854,753.

To all whom it may concern:

Be it known that I, CHARLES A. EIB, a citizen of the United States, residing at New Brunswick, in the county of Middlesex and State of New Jersey, have invented a new and useful Track Device for Automatic Train-Stops, of which the following is a specification.

The invention relates to improvements in track devices for automatic train stops, and the present application is a division of an application filed by me October 8, 1913, Serial No. 794,107.

The object of the present invention is to improve the construction of track devices for automatic train stops and to provide a simple, practical, and efficient track device, of strong and durable construction, capable of effectually preventing unauthorized persons from surreptitiously moving it to its engaging position to actuate the automatic train stop mechanism of a train for stopping the latter.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is a side elevation of a track device constructed in accordance with this invention and shown in position on a track, the cross ties being in section. Fig. 2 is a sectional view taken transversely of the track, the track device being shown in front elevation. Fig. 3 is an enlarged transverse sectional view of the track device.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

In the accompanying drawing, in which is illustrated the preferred embodiment of the invention, 1 designates a track device comprising a vertically movable plunger 2 provided at its upper end with a rounded transversely disposed head 3 projecting laterally at opposite sides of the plunger and movable into and out of the path of a shoe 4 of train mechanism of an automatic train stop. The shoe 4, which is pivotally connected at its rear end 5 to a supporting bracket 6, is connected with and adapted to actuate a vertically movable rod or stem 7, guided in an arm 8 of the supporting bracket and designed to be connected by means shown and described in the aforesaid application with devices for cutting off the steam from the cylinders of a locomotive and for applying the brakes of a train. While the track device of the present invention is designed primarily for use in connection with the automatic train stop of the aforesaid application, it may, of course, be used for actuating a movable shoe or analogous element of any other similar automatic train stop.

The plunger 2 operates in a vertical fluid pressure cylinder 9 provided at its lower end with an attaching portion or base 10, which is bolted or otherwise secured to a cross tie 11. The track device is preferably arranged at the center of a track 12, as illustrated in Fig. 2 of the drawing, but the track device may be mounted in any other desired manner and may also be located at either side of a track, so that a separate set of signals and track devices may be arranged at each side of a single track for controlling trains traveling thereon in opposite directions. The vertical cylinder 9 is connected at the bottom by a pipe 13 with a suitable source of air supply or other fluid pressure, preferably the pipe lines for operating a semaphore or other signal, and when pressure is introduced into the lower end of the said cylinder 9, the plunger 2 is forced upwardly to its elevated or engaging position into the path of the shoe 4. When the air is exhausted, the plunger descends by gravity, assisted by a pair of coiled springs 14, mounted on the lower portion of spaced vertical rods 15 secured at their upper ends to the transverse head 3 of the plunger and extending downwardly therefrom through openings 16 in horizontal guiding arms 17, preferably formed integral with and extending from opposite sides of the cylinder 9 at the upper portion thereof. The upper ends 18 of the slidable rods 15 are preferably threaded into perforations of the cross head of the plunger, and the lower terminal portions 19 of the said rods are threaded for the reception of nuts 20 arranged in

pairs and adjustably supporting the coiled springs 14, which are interposed between said nuts and the fixed horizontal guiding arms 17. The plunger is provided at its lower portion with suitable packing rings 21, and in practice, suction will effectually prevent the plunger from being surreptitiously lifted by unauthorized persons when the air is cut off, so that it will be impossible for such persons to stop a train by moving the track device from its lower position to its elevated or engaging position. The pairs of nuts, which are arranged on the threaded lower ends of the rods, provide for an adjustment of the springs to regulate the tension thereof, and the arrangement of the nuts in pairs serves to lock them in their adjustment. The cylinder is equipped at its top with a suitable stuffing box 22. When the train mechanism, shown and described in the aforesaid application engages and is operated by the track device, the brakes are applied and steam is cut off from the cylinders of the engine, as explained in the said application.

What is claimed is:

1. A track device of the class described comprising a fluid pressure cylinder, a plunger operating in the cylinder and movable upwardly and downwardly, a spring arranged exteriorly of the cylinder, and means also arranged exteriorly of the cylinder for connecting the spring with the plunger for moving the same downwardly.

2. A track device of the class described comprising a fluid pressure cylinder, a plunger operating in the cylinder and movable upwardly and downwardly, said plunger being provided with a cross head, rods located at opposite sides of the plunger and connected with the cross head, and springs mounted on the rods and arranged to urge the plunger downwardly.

3. A track device of the class described comprising a fluid pressure cylinder provided with projecting guiding arms, a plunger operating in the cylinder and movable upwardly and downwardly, rods connected with the plunger and guided by the said arms, and springs mounted on the rods and arranged to be compressed against the guiding arms in the upward movement of the plunger, said springs operating to urge the plunger downwardly.

4. A track device of the class described including a fluid pressure cylinder provided with projecting guiding arms, a plunger operating in the cylinder and provided with a cross head located above the said arms, vertically movable rods secured at their upper ends to the cross head and guided by the said arms, and springs disposed on the lower portions of the rods below the guiding arms and arranged to be compressed in the upward movement of the plunger.

5. A track device of the class described including a vertical fluid pressure cylinder provided at the upper portion with horizontal projecting arms having openings, a plunger operating in the cylinder and provided at the upper end with a laterally projecting cross head, vertical rods secured at their upper ends to the projecting portions of the cross head, and guided in the openings of the said arms, said rods having lower threaded portions, nuts arranged on the lower threaded portions of the rods, and coiled springs disposed on the rods and interposed between the nuts and the arms and adapted to urge the plunger downwardly.

6. A track device of the class described comprising a fluid pressure cylinder, a plunger operating in the cylinder and movable upwardly and downwardly, an exteriorly arranged spring, and means for connecting the spring with the plunger and for adjusting the tension of the spring, said spring operating to urge the plunger downwardly.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES A. EIB.

Witnesses:
LOUIS JULIASZ,
FRANK SMITH.