

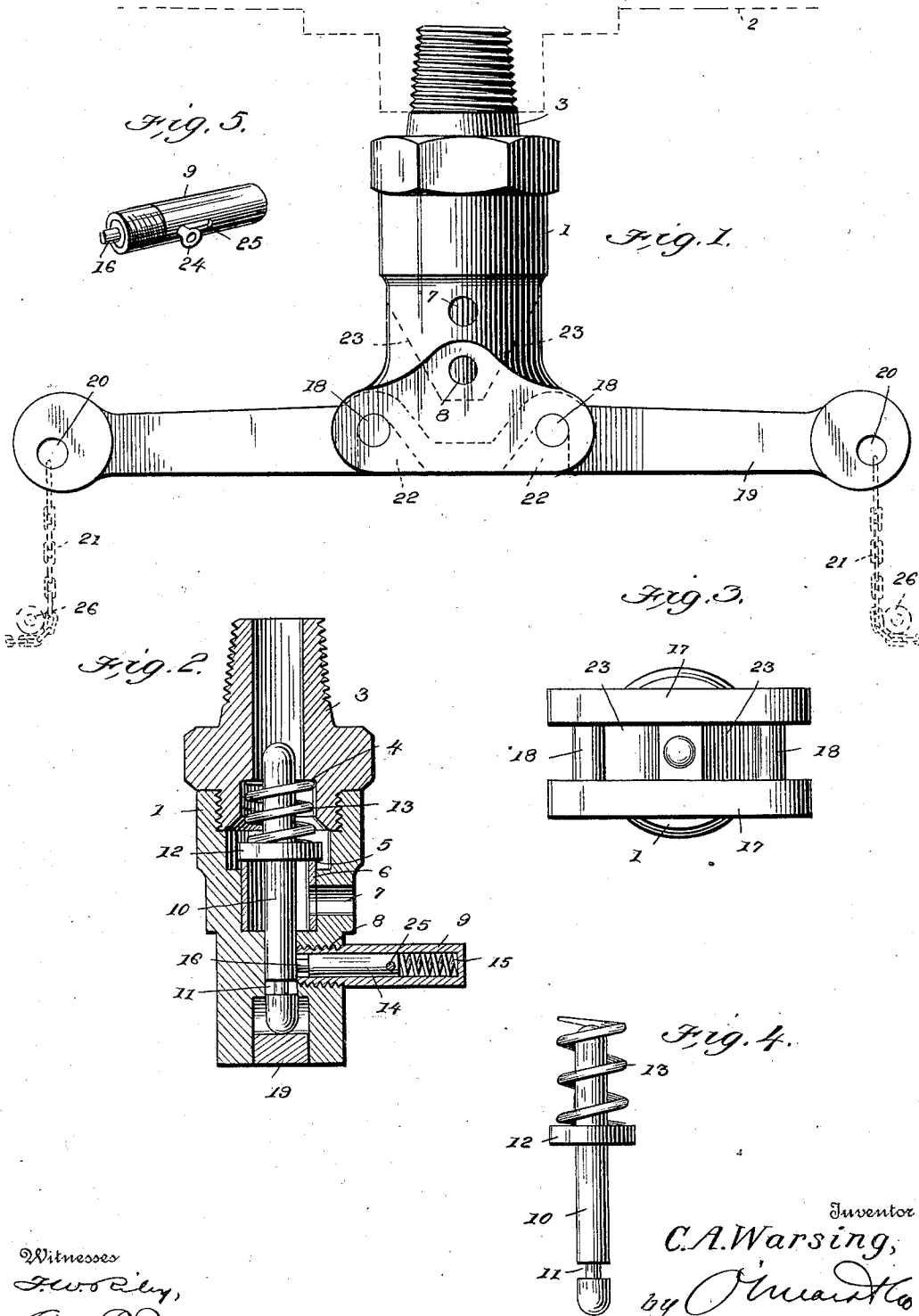
No. 663,947.

Patented Dec. 18, 1900.

C. A. WARSING.
SAFETY VALVE FOR TRUCKS.

(Application filed Mar. 17, 1900.)

(No Model.)



Witnesses

F. W. Riley,

Charles Brock

Inventor
C. A. Warsing,
by *O. M. Ward*
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES A. WARSING, OF ALTOONA, PENNSYLVANIA.

SAFETY-VALVE FOR TRUCKS.

SPECIFICATION forming part of Letters Patent No. 663,947, dated December 18, 1900.

Application filed March 17, 1900. Serial No. 9,100. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. WARSING, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented a new and useful Safety-Valve for Trucks, of which the following is a specification.

My invention relates to safety-valves for automatic brake system; and it has for its object to produce a device which can be connected with any brake system in such manner and position as to be automatically operated whenever a truck falls below its normal position—as, for instance, if one of the wheels should break or if the truck should leave the track.

With this object in view it consists in the improved construction and novel combination of parts of a safety-valve which will automatically set the brakes upon a train, as will be hereinafter more fully set forth.

In the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views in which they occur, Figure 1 is a side elevation of my improved safety-valve in position for use, a portion of the train-pipe and of the chains leading to the truck being shown in dotted lines. Fig. 2 is a vertical sectional view of my valve. Fig. 3 is a bottom plan view of the casing, and Figs 4 and 5 are detail views.

Referring more particularly to the drawings, 1 indicates the main casing, which is secured to the train-pipe 2 (shown in dotted lines in Fig. 1) by means of a nipple 3, each end of which is screw-threaded, and the intermediate portion is formed angular for the reception of a wrench in screwing it into position. The bore of the nipple is of two diameters, the lower portion being larger than the upper portion and forms the shoulder 4 near the lower end. The bore of the main casing is preferably formed of four diameters, the upper one of which is interiorly screw-threaded and fits upon the lower screw-threaded portion of the nipple, as shown in Fig. 2. A valve-seat 5 is formed in the next larger diameter by causing a short cylinder 6, which is seated in the next succeeding diameter, to project slightly above the bottom of the second largest diameter. An air-outlet 7 is formed by perforating the wall of the casing, and the

cylinder is shown in Fig. 2. A second perforation 8 is formed in the lower portion of the casing and extends into the portion of the bore of the cylinder having the smallest diameter and is screw-threaded for the reception of an open-ended casing 9, which is adapted to be screw-threaded therein.

Seated within the registering bores of the casing and of the nipple is the longitudinal movable valve-stem 10, the upper portion of which projects above the shoulder 4, and the lower portion fits snugly within the smaller diameter of the casing and is provided with an annular groove 11. The intermediate portion of the stem is provided with a circular valve 12, which is rigidly secured thereto. A coiled spring 13 fits upon the upper portion of the valve-stem and has one end bearing against the shoulder 4 and its opposite end against the top of the valve 12, whereby the valve is normally held upon its seat, as shown in Fig. 2. In this position the groove 11 is below the open end of the casing 9, and the end of a pin or key 14 in the casing 9 is forced against the stem by means of a spring 15 in the outer end of the casing. The inner end of the pin is preferably reduced, as shown at 16, so as to enter the groove 11 and lock the valve-stem in its elevated position as soon as the stem has been moved up and cause the groove to register with the end of the pin.

The lower end of the casing is provided with parallel arms 17, which extend laterally upon opposite sides of the casing, the opposite ends of which are provided with two pins 18. A lever 19 is pivotally mounted upon the pins and has its opposite ends extended to a suitable distance beyond said pivotal points and provided with perforations 20 for the reception of chains 21 (shown only in dotted lines in Fig. 1) or any other suitable means for connecting them with the trucks of the car. The lower edge of the lever is provided with notches or recesses 22, (shown in dotted lines in Fig. 1,) which fit upon the pins 18 and permit of either end of the lever being raised when the opposite end is drawn down by the movement of the truck below its normal position. The central portion of the lever extends directly under the lower end of the valve-stem 10 in such a position that whenever the lever is rocked upon either of its

pivotal points the opposite end will be moved up into the recessed portion 22 of the casing and the portion directly under the valve-stem will force the valve-stem upward until the 5 groove 11 registers with the pin 14, when the coiled spring 15 will force the pin forward and lock the valve-stem in its elevated position. When it is desired to release the valve, the pin 14 is withdrawn from its engagement 10 with the valve-stem by means of a stud or pin 24, which projects through a slot 25 in the side of the casing 9, when the pressure of the spring 13 will instantly seat the valve upon the top of the cylinder 6.

15 In operation I provide the train-pipe with two valves, one for each truck, and connect the ends of the lever of each valve with the opposite corners of its respective truck by means of the chains which are passed over 20 pulleys 26, as shown in dotted lines in Fig. 1. In this manner it is evident that if any portion of the truck falls below its normal level—as, for instance, by jumping the track or by the breaking of either of the wheels—the lever 25 would be instantly drawn down at one end and to such an extent as to cause the central portion to move the valve-stem upward and unseat its valve. As soon as the valve is raised from its seat the air will rush from the 30 train-pipe through the outlet 7, and thereby automatically set the brakes and stop the train before any serious danger could be done. After the truck has been restored to its normal position the lock-pin can be withdrawn 35 from the valve-stem, which will permit of the valve being seated, which would close the passage between the train-pipe and the air-outlet and cause the brake system to operate

in the same manner as though it were not provided with my safety attachment. 40

Although I have shown a very convenient means for operating my improved safety-valve, yet I reserve to myself the right to make such changes and alterations therein as will come within the scope of my invention. 45

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

1. In a safety-valve for train-pipes, the combination, with a casing provided with an 50 air-outlet and a valve-seat, of a spring-actuated valve, the stem of which is provided with an annular groove, a slotted casing projecting from the first-mentioned casing, a spring-actuated pin in the slotted casing in position 55 for its inner end to enter said groove when the valve has been raised from its seat, and a stud secured to the pin and projecting through the slot in the casing for moving the valve-stem, substantially as described. 60

2. In a safety-valve for train-pipes, the combination, with a casing provided with an 65 air-outlet and a valve-seat, of a spring-actuated valve, the stem of which is provided with an annular groove, a casing entering said first-mentioned casing near the lower end of 65 the stem, a pin in said second-mentioned casing, the inner end of which is adapted to enter the groove in the valve-stem and hold it in an elevated position, a spring for forcing said 70 pin inward and means for moving the valve-stem upward, substantially as described.

CHAS. A. WARSING.

Witnesses:

P. A. WARSING,
W. H. STEPHENS.