

No. 793,375.

PATENTED JUNE 27, 1905.

C. M. HURST.  
RAILWAY TRIP SHOE.  
APPLICATION FILED JAN. 8, 1904.

3 SHEETS—SHEET 1.

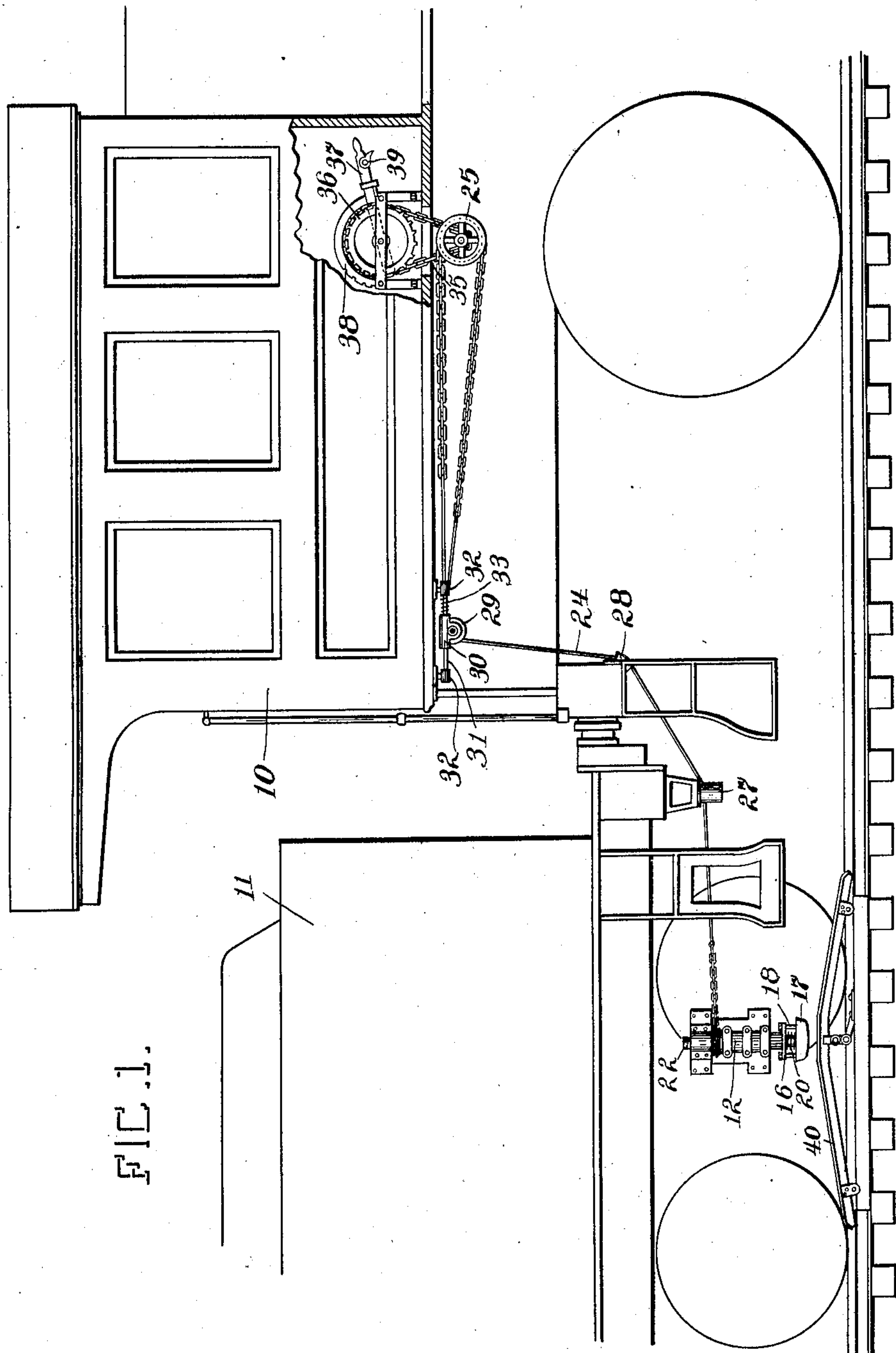


FIG. 1.

Witnesses  
Geo. E. Maldo.  
E. W. Blatcher

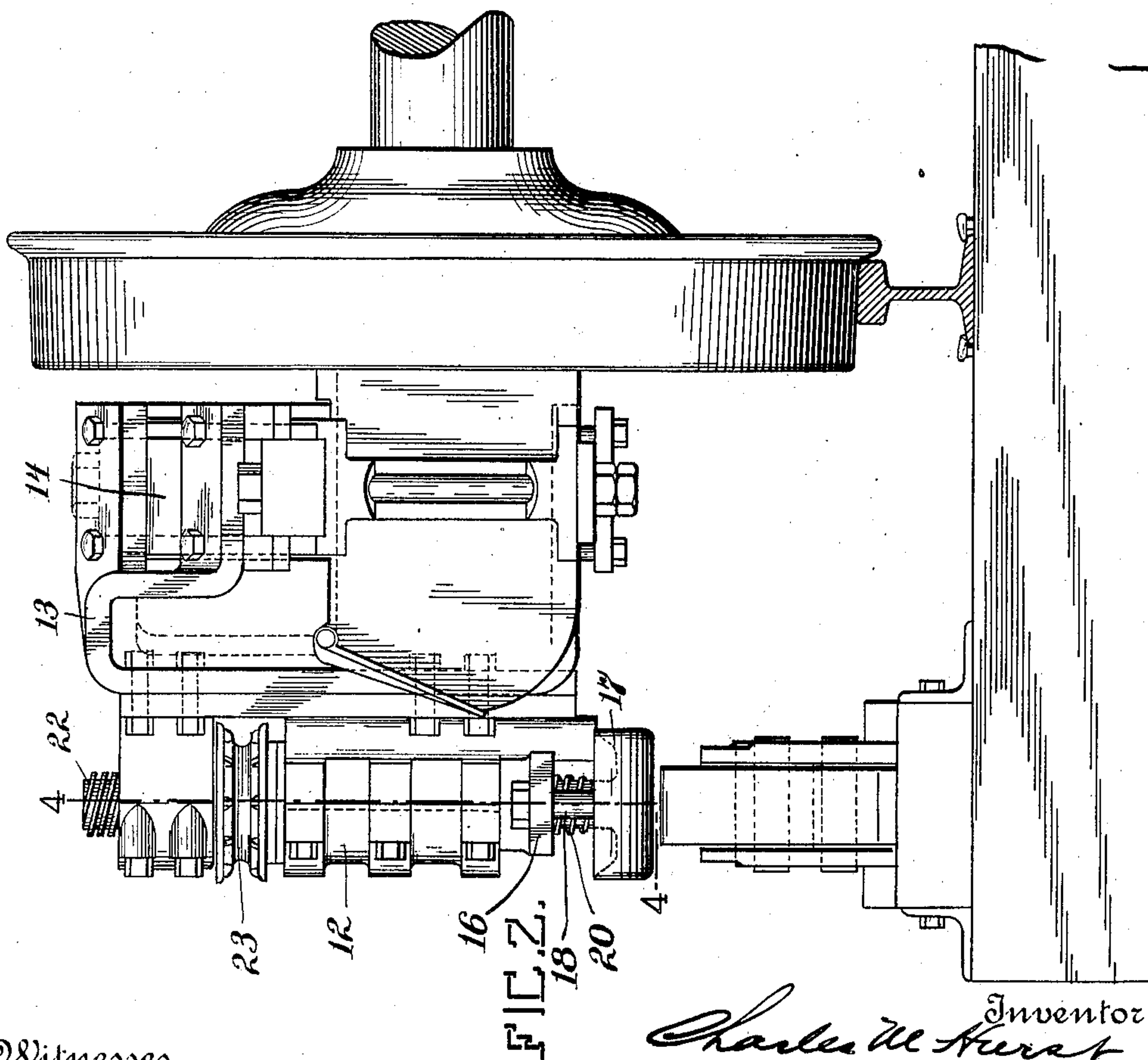
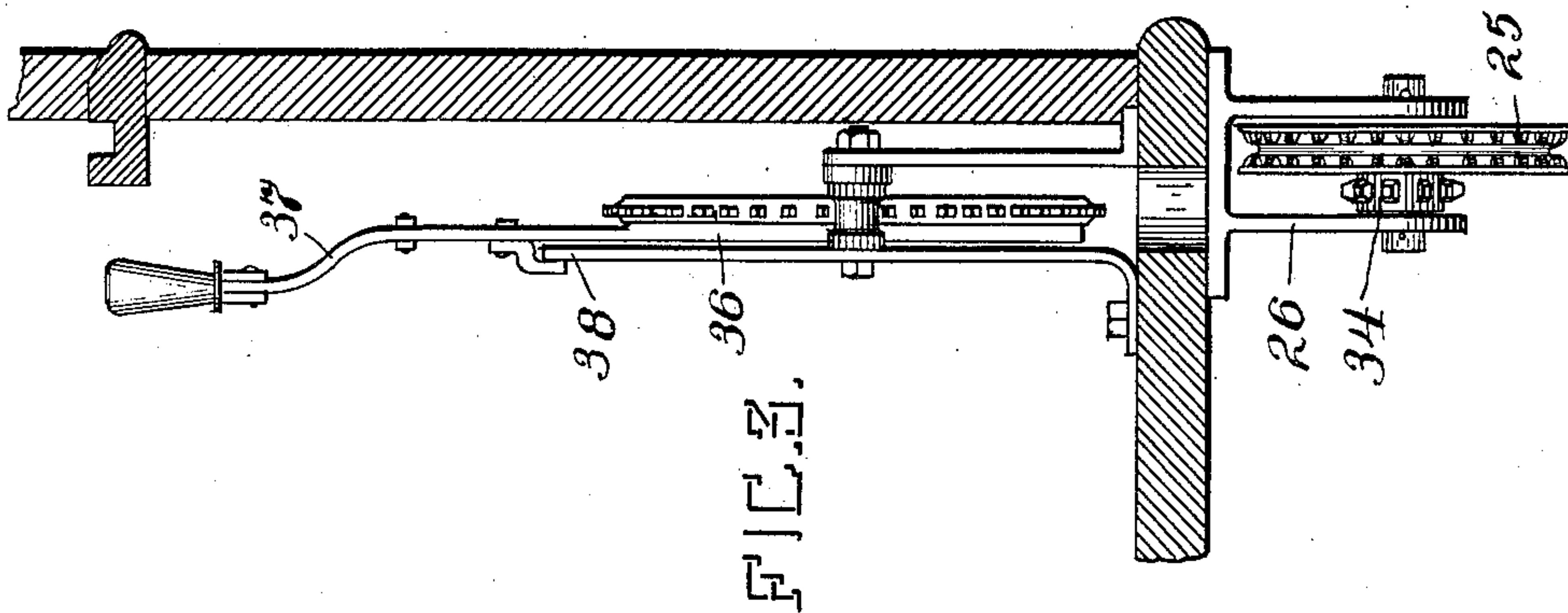
Inventor  
Charles M. Hurst  
by Louis T. Gilson  
Attorney

No. 793,375.

PATENTED JUNE 27, 1905.

C. M. HURST.  
RAILWAY TRIP SHOE.  
APPLICATION FILED JAN. 8, 1904.

3 SHEETS—SHEET 2.



Witnesses  
Geo. E. Waldo.  
E. M. Klatcher

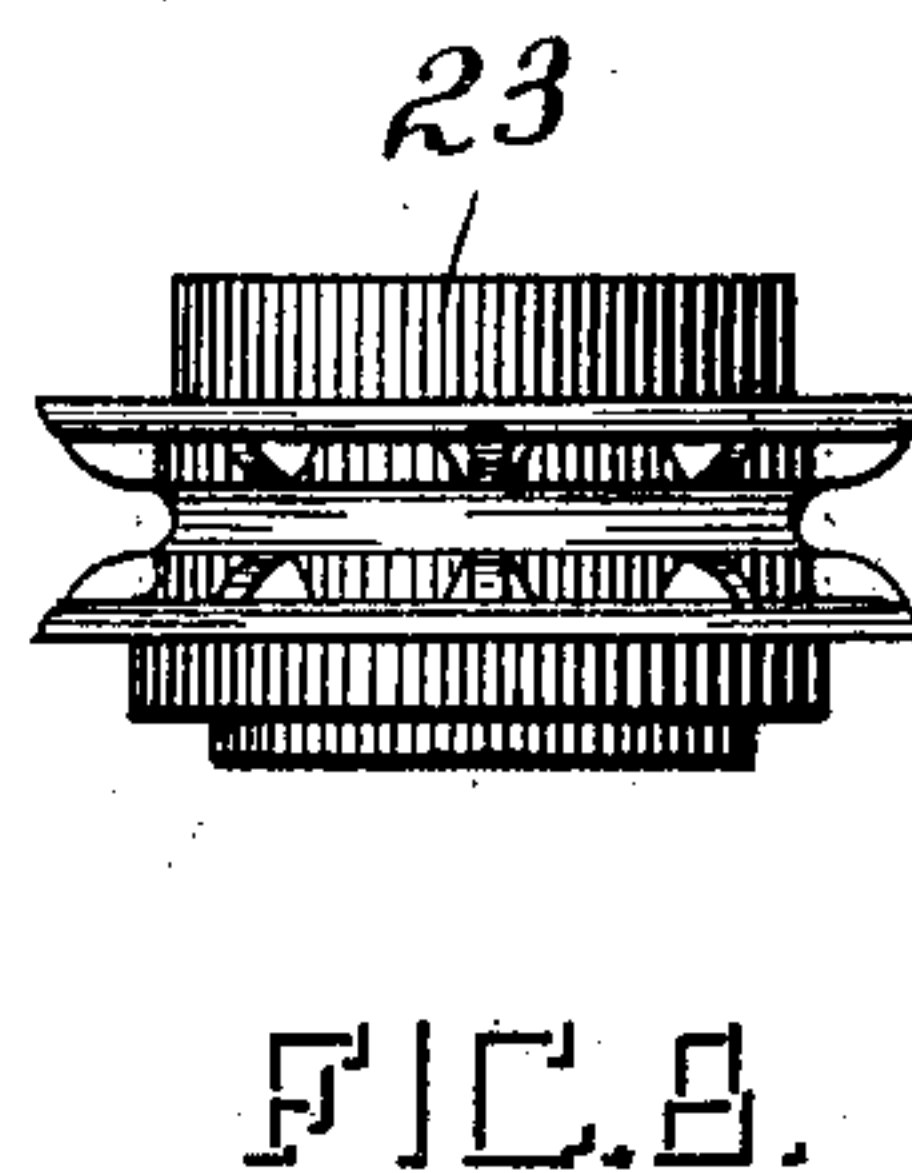
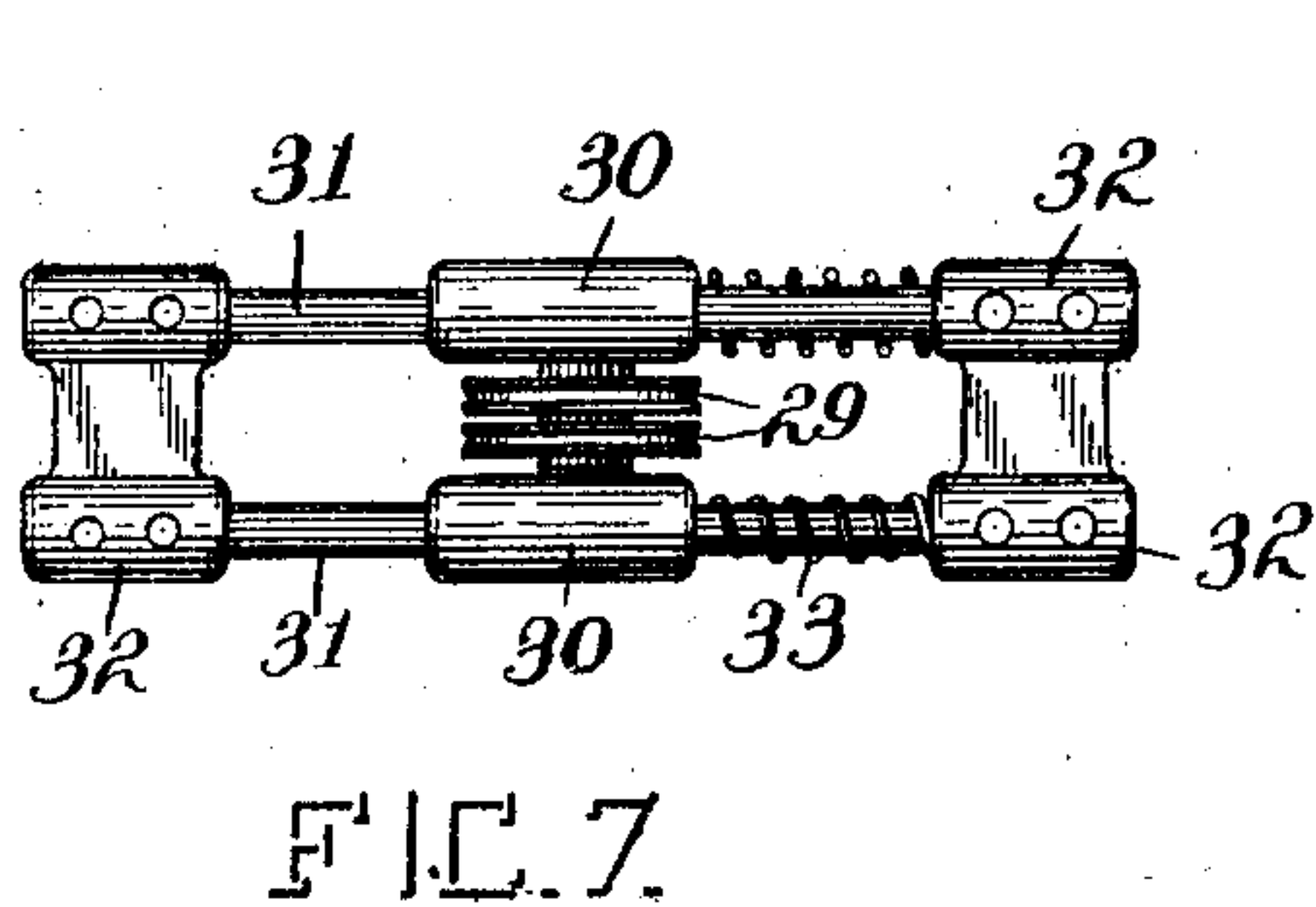
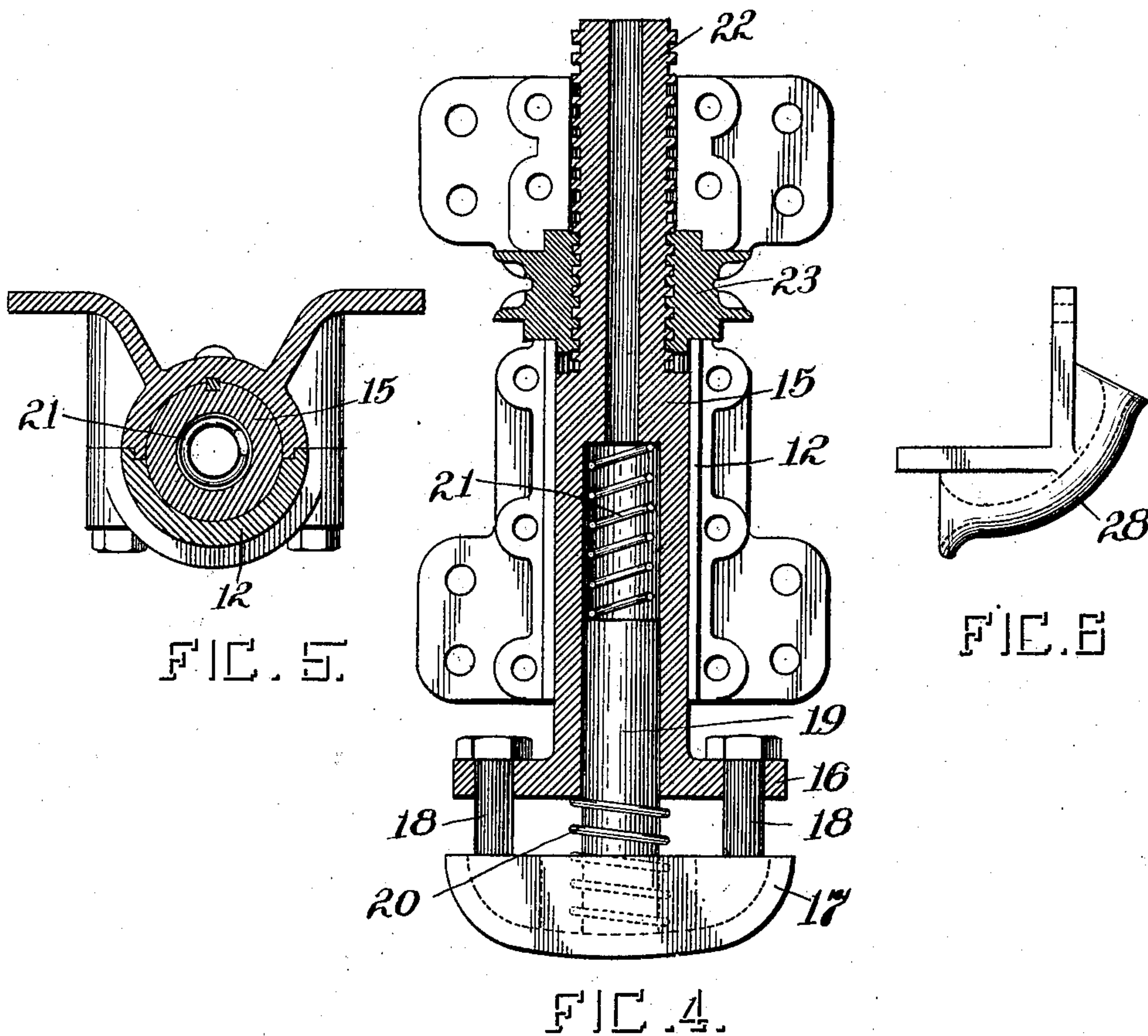
Inventor  
Charles M. Hurst  
By *Levi L. Green*  
Attorney

No. 793,375.

PATENTED JUNE 27, 1905.

C. M. HURST.  
RAILWAY TRIP SHOE.  
APPLICATION FILED JAN. 8, 1904.

3 SHEETS—SHEET 3.



Witnesses  
Geo. E. Waldo.  
E. M. Klatchen

Inventor  
Charles M. Hurst  
by *Lawrence Gibson*  
Attorney



# UNITED STATES PATENT OFFICE.

CHARLES M. HURST, OF RAWLINS, WYOMING.

## RAILWAY TRIP-SHOE.

**SPECIFICATION** forming part of Letters Patent No. 793,375, dated June 27, 1905.

Application filed January 8, 1904. Serial No. 188,201.

*To all whom it may concern:*

Be it known that I, CHARLES M. HURST, a citizen of the United States, and a resident of Rawlins, county of Carbon, and State of Wyoming, have invented certain new and useful Improvements in Railway Trip-Shoes, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

This invention relates to trip-shoes carried by locomotives or railway-cars for the purpose of engaging switch or signal trips located beside the track. Its object is to provide a reliable and easily-controlled device of this character.

The invention consists in a shoe carried by a threaded rod running in a suitable casing and controlled by means of a nut, which may be actuated from the interior of the car or engine-cab.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a detail side elevation of a locomotive, some portions being broken away, showing the shoe and its operating mechanism attached thereto. Fig. 2 is a detail elevation, partly in section, through the track and showing the shoe and a part of the locomotive-truck. Fig. 3 is a detail of the controlling mechanism. Fig. 4 is a vertical section on the line 4 4 of Fig. 2, and Figs. 5, 6, 7, and 8 are details of various parts of the device.

The shoe is preferably attached to the truck of the tender of a locomotive, as shown in Fig. 1, and controlled by means of a hand-lever within the engine-cab, a suitable cable leading from the cab to the nut for turning the rod supporting the shoe. While it is obvious that the shoe may be carried by a car and operated from the interior thereof, I have not deemed it necessary to illustrate such structure, as a description of the manner of mounting it upon a locomotive will be a sufficient guide to a mechanic in applying it to a car.

A locomotive-cab is shown at 10 and its tender at 11. The casing 12 for carrying the shoe and its appurtenances is secured, by means of a suitable bracket 13, to the framing 14 of the truck of the tender. Within this casing there is housed a vertically-reciprocating bar

15, provided at its lower end with a flange 16, to which the shoe 17 is secured by means of bolts 18 18 passing loosely through apertures in the flange and fixed within the shoe, so that the shoe is allowed some freedom of vertical movement.

The shoe is provided with a stem 19, which projects into a central chamber of the bar 15, and springs 20 21 react, respectively, between the back of the shoe and the lower face of the flange 16 and the upper end of the shoe-stem 19 and the inner wall of the chamber in the bar 15, within which this stem is housed, these springs operating to hold the shoe in its lowest position relatively to its carrying-bar. The upper end 22 of the bar is threaded, and upon this thread runs a nut 23, the shell of the casing 12 being suitably apertured to accommodate it. This nut 23 is annularly grooved, and around it is turned an endless cable or chain 24, leading to and turning over a sheave 25, carried by a bracket 26, secured to the under side of the seat-board of the engine-cab. The cable 24 is guided intermediate of the nut and the sheave 25 by suitable leaders, as 27, secured to the end sill of the tender 28, secured to the steps of the locomotive, and sheaves 29, secured to the rearward end of the seat-board of the engine-cab.

To compensate for the play of the draft-rigging, by which the tender is attached to the locomotive, without disturbing the tension of the cable, I mount the sheaves 29 on a shaft journaled in blocks 30, sliding on the bars 31, carried by brackets 32, attached to the engine-cab, and interposed between the blocks 30 and forward bracket 32 are springs 33, which force the blocks backwardly and keep the cable taut.

Upon the shaft carrying the sheave 25 and fixed to the sheave is mounted a sprocket-wheel 34, upon which is mounted a sprocket-chain 35, turning over a sprocket-wheel 36, mounted, with the hand-lever 37, within the cab of the engine and within convenient reach of the engineer. The lever 37 plays over a quadrant 38 and is provided with a latch mechanism 39 of ordinary construction, cooperating with the quadrant. The relative size of the sprocket-wheels 34 and 36 is such that a half-



turn of the latter rotates the former several times, thereby turning the nut 23, so as to secure the desired vertical movement of the shoe 17.

5 The form of the shoe may of course be varied. It is as shown particularly adapted for contact with an apron form of trip, as shown at 40, being the trip which forms the subject of a copending application for patent by myself.

10 It is obvious that various forms of mechanism may be employed for turning the nut to raise and lower the shoe, and it is also apparent that a plurality of shoes may be used—as, for example, upon opposite sides of the  
15 train.

I claim as my invention—

1. In a device of the kind described, in combination, a casing, a shoe, a threaded reciprocating bar housed within the casing and carrying the shoe, and a nut running on the bar and  
20 reacting against shoulders on the casing.

2. In a device of the kind described, in combination, a casing adapted for attachment to a railway-vehicle, a shoe, a threaded reciprocating bar housed within the casing and carrying the shoe, a nut running on the bar and reacting against shoulders on the casing, and means for  
25 controlling the nut from within the vehicle.

3. In a device of the kind described, in combination, a casing adapted for attachment to a railway-vehicle, a shoe, a threaded reciprocating

ing bar housed within the casing and carrying the shoe, a nut running on the bar and reacting against shoulders on the casing, a cable turning around the nut, a sheave over which the  
35 cable runs, a crank-arm, and connection between the crank-arm and the sheave.

4. In a device of the kind described, in combination, an extensible shoe mounted on a railway-vehicle, a cable for controlling the shoe  
40 and leading to another vehicle, guides for the cable arranged to deflect it from a straight course, one of such guides being yieldingly supported.

5. In a device of the kind described, in combination, an extensible shoe mounted on a railway-vehicle, a cable for controlling the shoe and leading to another vehicle, guides on each vehicle for the cable and arranged to deflect the cable in a line transverse to the direction of  
50 movement of the vehicles, one of said guides being yieldingly supported.

6. In a device of the kind described, in combination, a controlling-cable for leading from one vehicle to another and a guide therefor  
55 comprising a bracket, journal-blocks sliding on the bracket, a spring bearing against the blocks, and a sheave carried by the blocks.

CHARLES M. HURST.

Witnesses:

H. C. TUXBURY,  
J. S. MACDONALD.