

(No Model.)

2 Sheets—Sheet 1.

C. W. McBRAYER.

DEVICE FOR PREVENTING RAILWAY CARS FROM LEAVING THE RAILS.

No. 506,439.

Patented Oct. 10, 1893.

Fig. 1

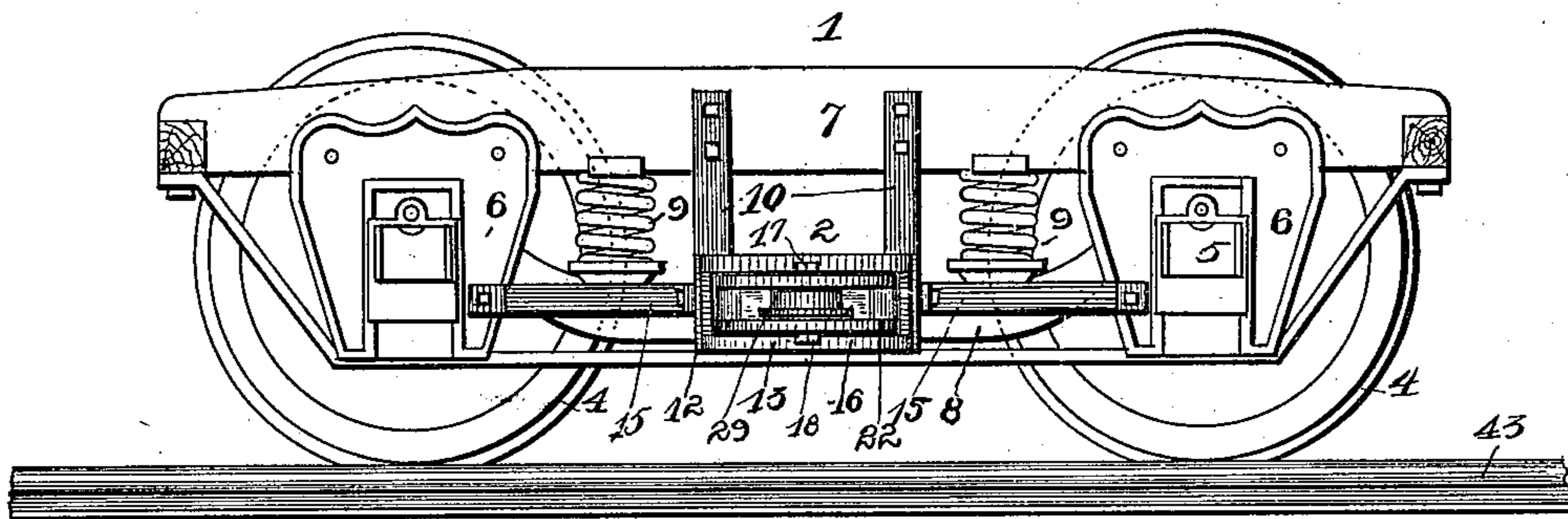


Fig. 2

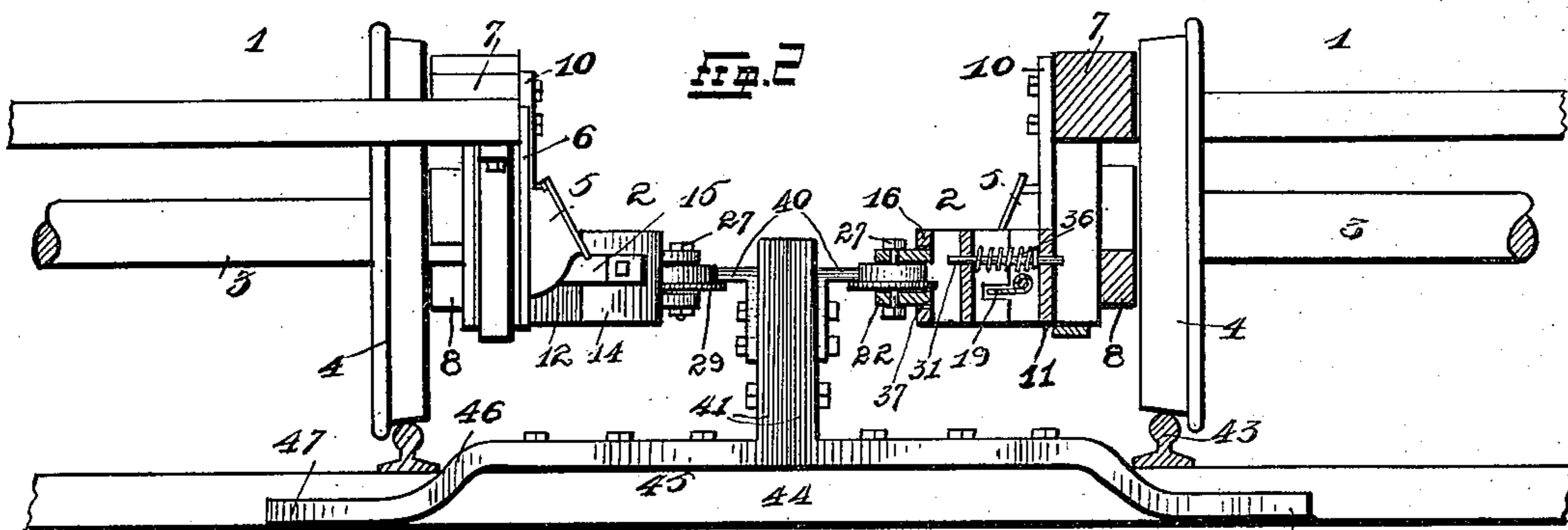


Fig. 3

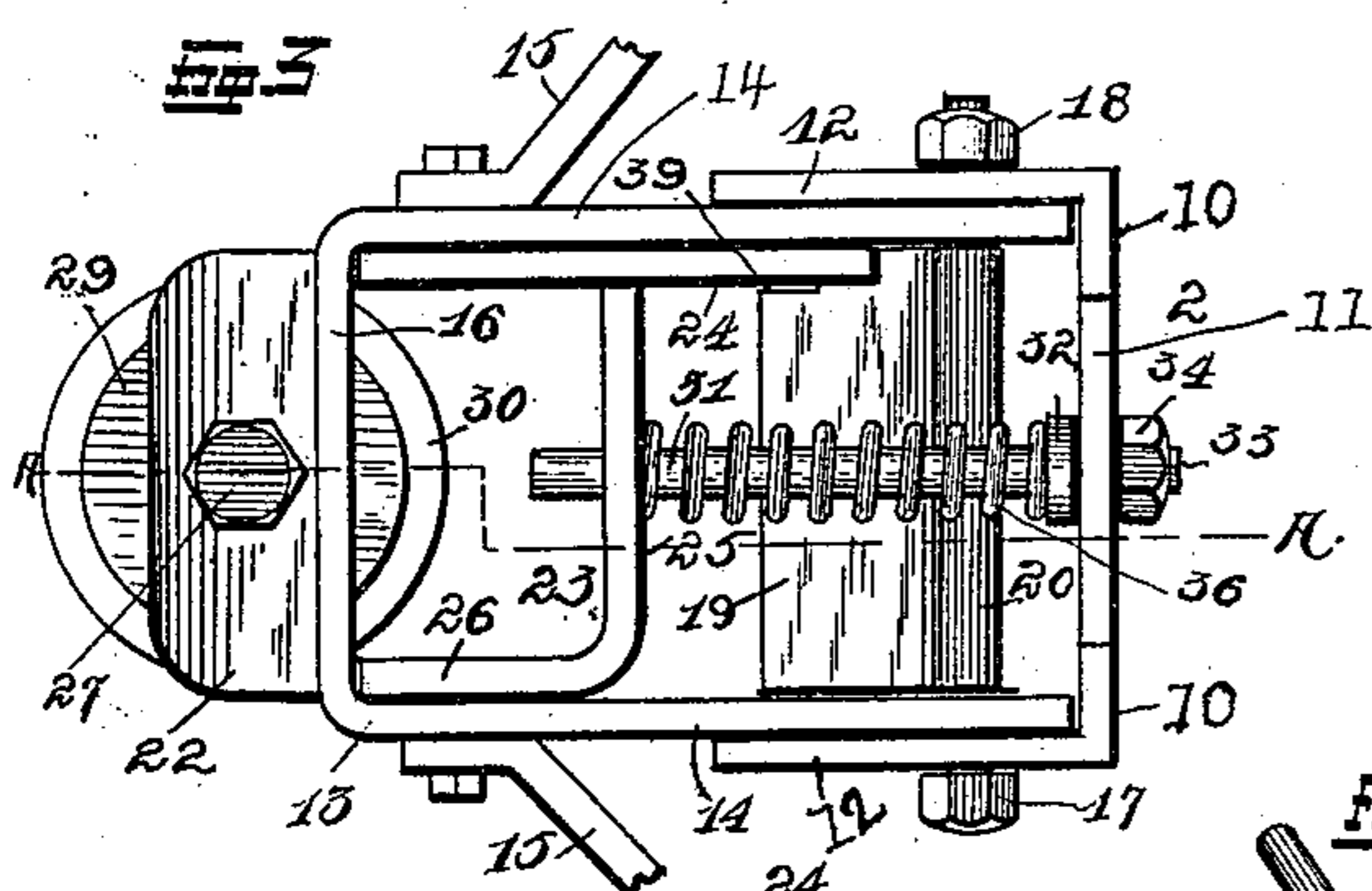


Fig. 4

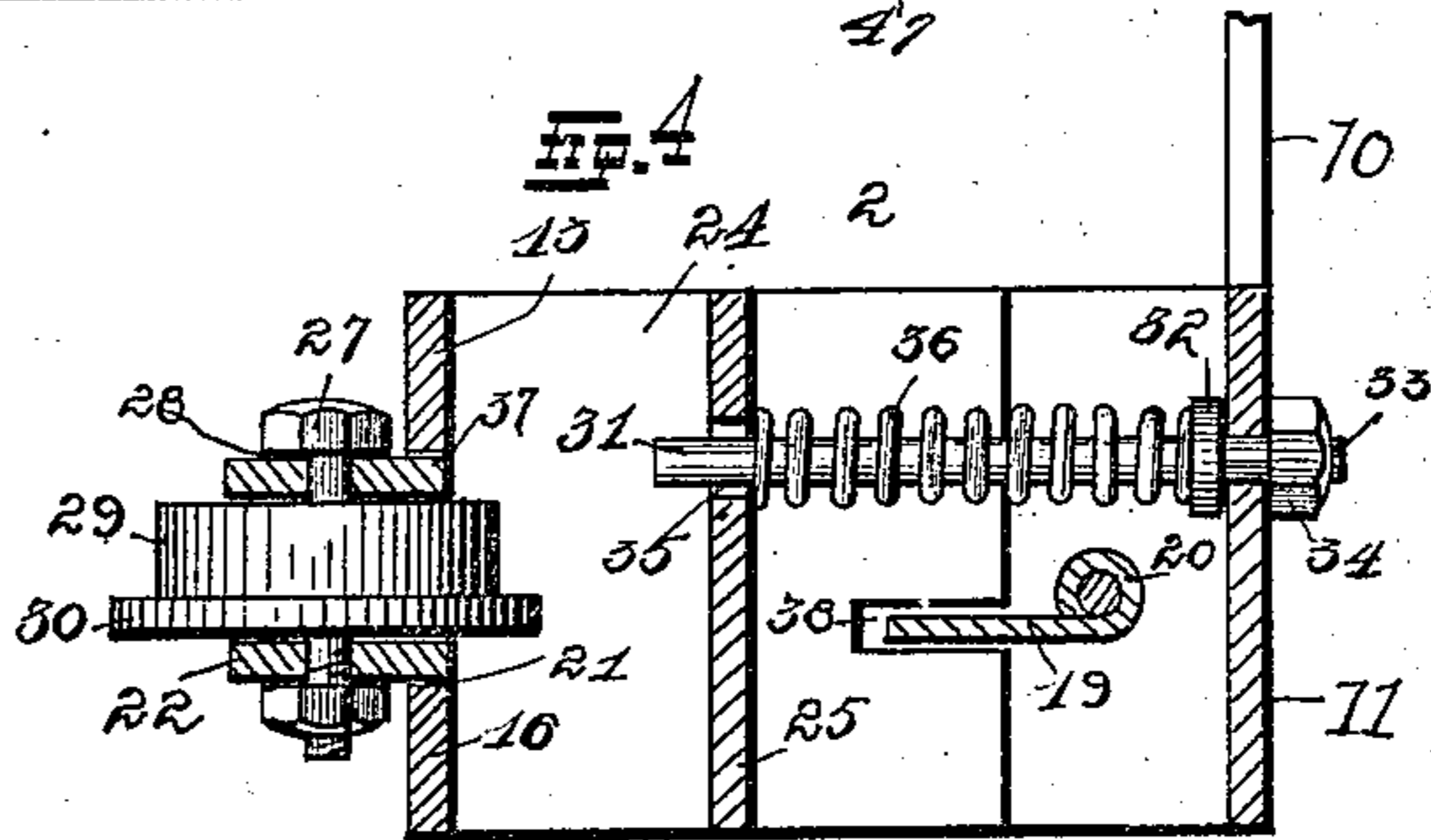


Fig. 5

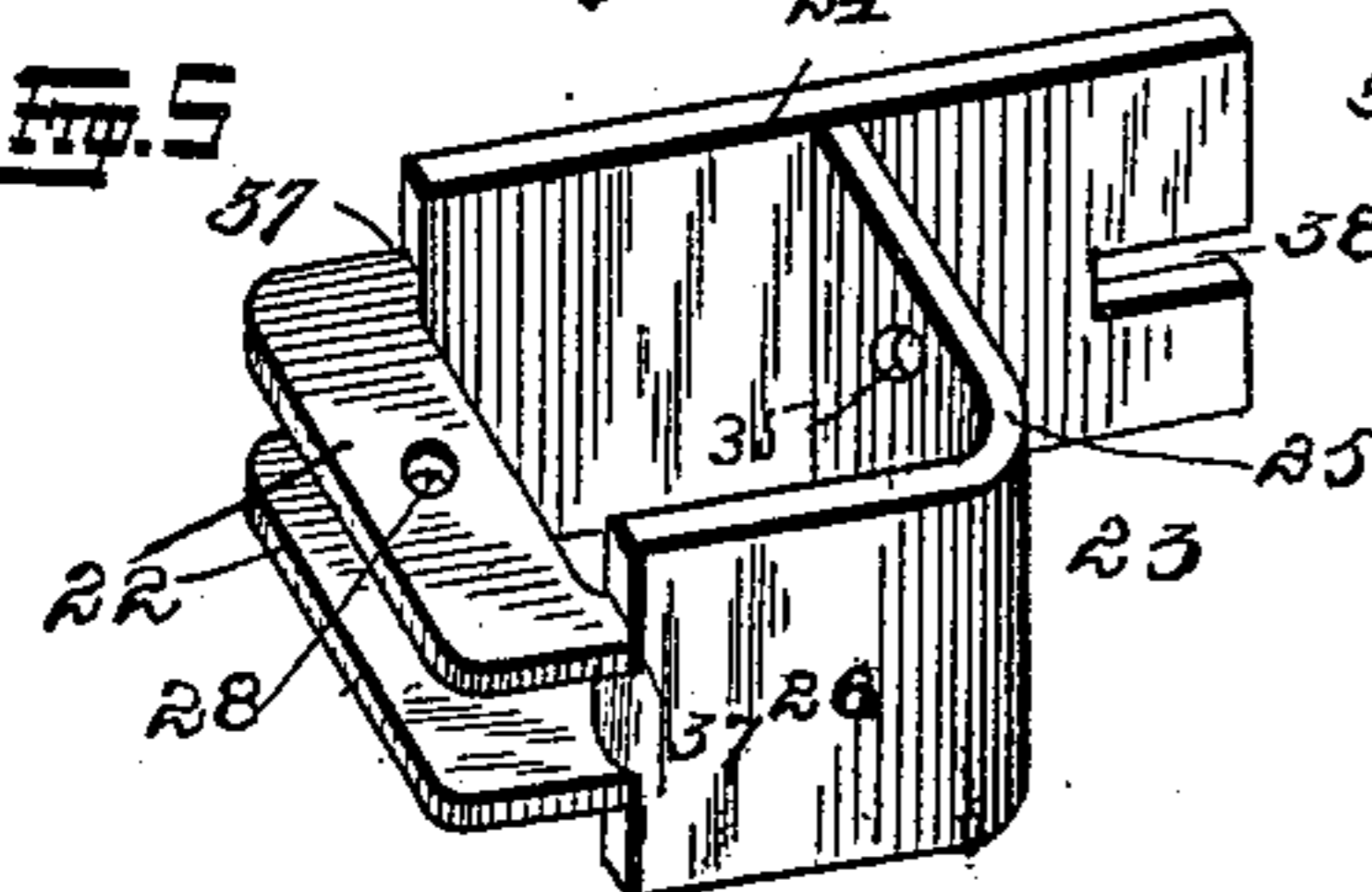


Fig. 6

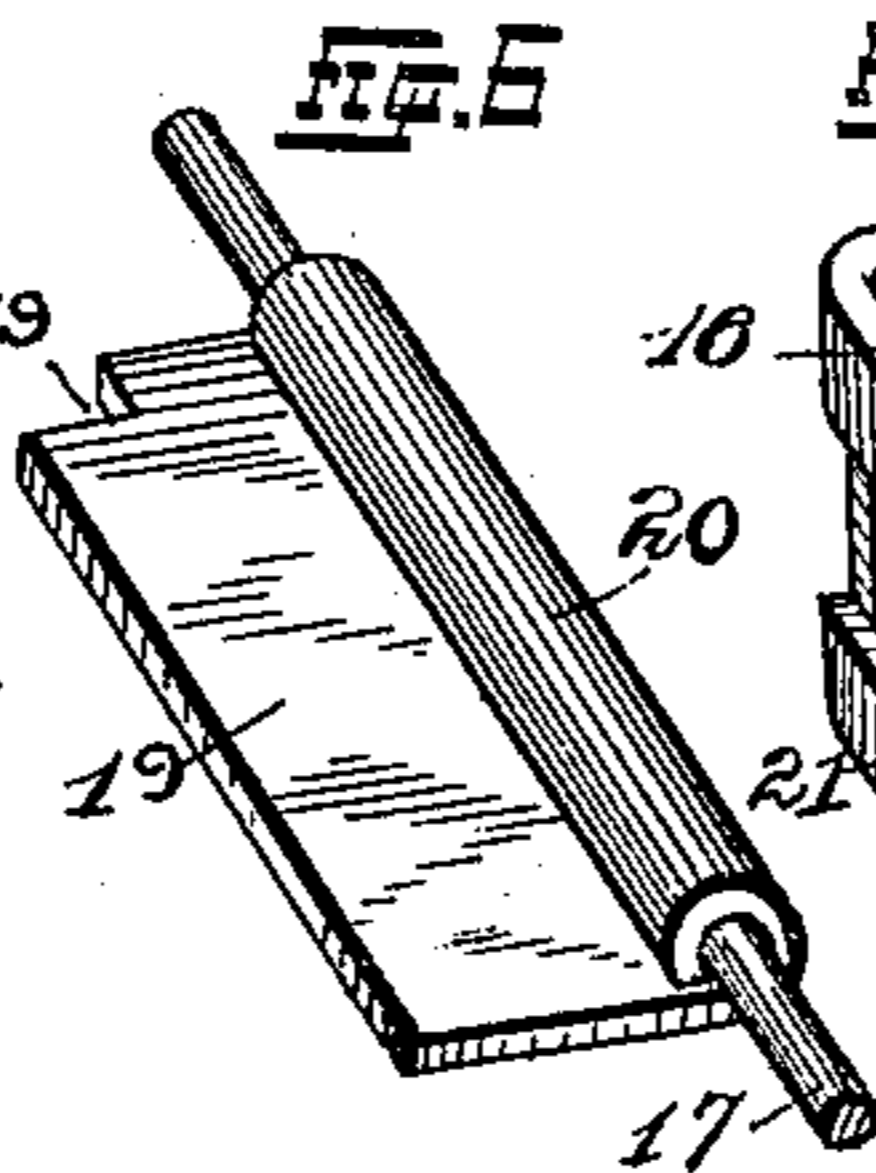
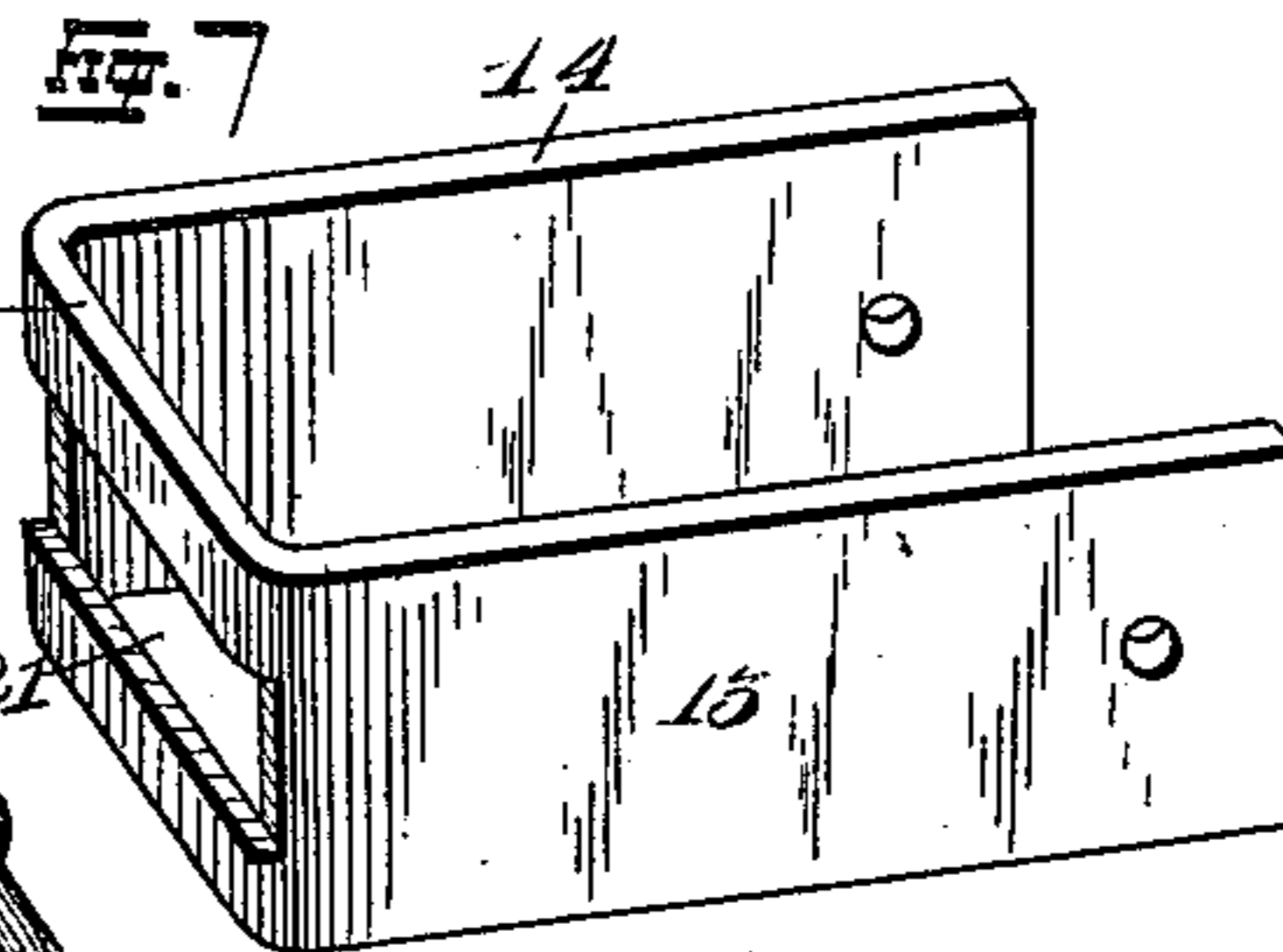


Fig. 7



WITNESSES

Alfred A. Eicher  
Herbert H. Robinson

INVENTOR

Charles W. McBryer  
By Sigdon and Sigdon and Longan, Attorneys

(No Model.)

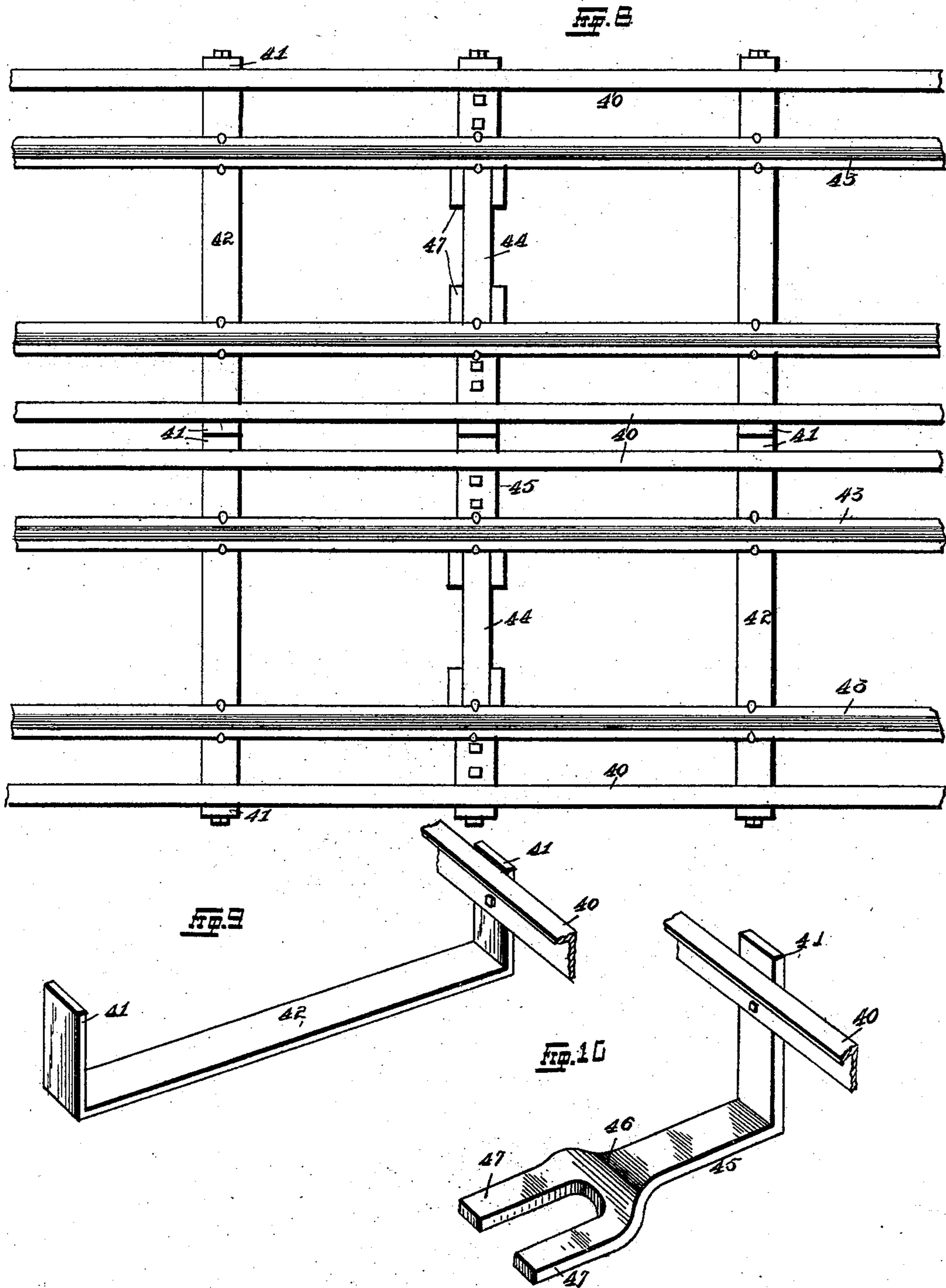
2 Sheets—Sheet 2.

C. W. McBRAYER.

DEVICE FOR PREVENTING RAILWAY CARS FROM LEAVING THE RAILS.

No. 506,439.

Patented Oct. 10, 1893.



WITNESSES

Alfred A. Eicher  
Herbert H. Robinson

INVENTOR

Charles W. McBryer  
By Higdon & Higdon & Lorgan, Attorneys

# UNITED STATES PATENT OFFICE.

CHARLES W. MCBRYER, OF WELLSTON, ASSIGNOR OF ONE-FOURTH TO  
HENRY B. SCHILLING, OF ST. LOUIS, MISSOURI.

DEVICE FOR PREVENTING RAILWAY-CARS FROM LEAVING THE RAILS.

SPECIFICATION forming part of Letters Patent No. 506,439, dated October 10, 1893.

Application filed December 28, 1892. Serial No. 456,544. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. MCBRYER, of the city of Wellston, county of St. Louis, and State of Missouri, have invented certain new and useful Improvements in Devices for Preventing Railway-Cars from Leaving the Rails, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in "devices for preventing railway cars from leaving the rails" and consists in the novel arrangement and combination of parts, as will be more fully hereinafter described and designated in the claims.

The object of my invention is as above stated to construct certain devices for the prevention to a great extent of the many railway accidents now caused by the running off of the track or derailment of trains. Parts of the construction are carried by the car trucks, the other parts forming an improvement upon the track.

In the drawings:—Figure 1 is a side elevation of a car-truck with a part of my invention applied thereto. Fig 2 is an end sectional elevation with parts removed and broken away of the trucks of two cars, presumably traveling upon adjacent tracks, and showing the connection between the parts carried by the truck and those forming the improvement upon the track. Fig. 3 is a top plan view of the truck attachment. Fig. 4 is a vertical longitudinal section taken on a line A—A in Fig. 3. Fig. 5, is a perspective view of a part of the truck attachment. Fig. 6 is a perspective view of a hinged plate forming a part of the attachment. Fig. 7 is a view in perspective of another portion of the truck attachment. Fig. 8 is a top plan view of a double-track showing the application of both wooden and metallic ties and the relative location of the track improvement with the ordinary traffic rails. Fig. 9, is a perspective view of a metallic tie showing supporting constructions for the guide forming a part of the track improvement. Fig. 10 is a perspective view of a metallic attachment for supporting the guide, and adapted to be used in conjunction with wooden ties.

Referring to the drawings:—1 indicates an ordinary railway car truck, one half of same being shown in the accompanying illustrations, as having a portion 2 of my improvement applied thereto.

It will be necessary for me to give a brief description of the construction of the car truck in order that the application of my invention thereto will be readily understood.

The axles 3 are provided upon their outer ends projecting beyond the wheels 4 with vertically adjustable journal boxes 5 which are secured to a depending casting 6, said casting being bolted upon a horizontal truck beam 7, the application being similar upon both axles. The two axles upon each side of the truck are held together by a brace-beam 8, between which and the lower side of the truck-beam 7 are located the springs 9 upon which the car-body rides. My attachment 2 is located outwardly from and intermediate of two springs 9, and is suspended below the beam 7 by vertical braces 10 projecting upwardly from each end of the back plate 11 of the attachment, said arms 10 and back 11 being integral. Looking downwardly upon the top of the attachment 2 we see that the back 11 has two outwardly projecting end-plates 12 forming together with said back 11, a three-sided casing for other parts. Adapted to fit within the projecting sides 12 is an elongated rectangular shaped three-sided frame 13, the sides 14 of which normally rest between said sides 12. The frame 13 is held in position by angle braces 15 bolted to its sides near the outer end plate 16 and bolted to the journal-frame 6. The frame 13 is held within the sides 12 by a bolt 17 passing through said sides 14 and 12 and held by a nut 18 upon one end. Mounted upon said bolt 17 and projecting outwardly therefrom and between the inner sides of the side-plates 14 of the frame 13 is a hinged plate 19, which is provided with a longitudinal rounded portion upon one edge, having an opening through which said bolt 17 passes, the plate portion 19 projecting outwardly from said rounded portion 20. The forward plate 16 of the frame 13 is provided with a horizontal opening 21 running from the two side-plates 14 and through which are adapted to project two perforated plates 22 upon a cast-

ing 23 which operates within the frame 13. The casting 23 when viewed from the top looks somewhat like a small letter "h," a plate 24 of which forms one side of the complete casting and is of somewhat shorter length than the side 14 of the frame 13, against the inner surface of which it is adapted to operate. Intermediate of the length of said plate 24 and projecting at right angles therewith is a plate 25, which has a projecting plate 26 at right angles with the plate 25 and in parallel with the plate 24 and which extends outwardly the same distance as said plate 24, the two projections 22 connecting said plates 24 and 26 and projecting outwardly horizontally therefrom. Horizontally mounted between the plates 22 and held in position by a bolt 27 through the perforations 28 in said plates, is a friction-roller 29 having an annular projecting flange 30 around the lower edge of the periphery. A horizontal shaft 31 is provided near one end with a thick collar 32 said end 33 being screw-threaded and adapted to be secured in an opening in the rear plate 11 and held therein by a nut 34 screwed upon the ends of said shaft 31. The opposite end of the shaft 31 projects through an opening 35 in the plate 25 and between said plate 25 and the plate 11 upon said shaft 31 is located a coil tension spring 36, the normal tendency of which is to keep the entire casting 23 and accompanying parts outward, the limit being determined by the contact of the edges 37 of the plates 24 and 26 against the end 16 of the frame 13.

Referring particularly to Fig. 4 it will be seen that the plate 24 is provided with a horizontal opening 38 in alignment with the plate 19 which is provided with a rectangular cut out portion 39 upon one end to engage in said opening and the end thereof. The edge of the notched or cut out portion 39 limits the rear movement of the entire casting 23, such an action or movement compressing the spring 36, and a loose or rocking movement of said casting 23 and accompanying parts is attained by the connection with the plate 19 and the plate 24, the distance between the upper and lower edges of the opening 38 and the width of the opening 21 determining the length of the upward or downward movement, as will be more fully hereinafter described.

It will now be necessary to describe the construction of the guides forming the improvement to the track and which is necessary for the operation of the truck attachment.

The guide 40 comprises a longitudinal strip having an annular projection, which the wheel 29 is adapted to engage. The track 40 is secured in alignment above the track to a vertical standard 41 which projects upwardly at the end of a horizontal tie strip 42, which is suitably secured in the road bed and upon which the rails 43 are secured as shown in Fig. 8.

As before stated the truck attachment 2 is

located upon both sides of both trucks and it is therefore necessary to provide a guide for each side of the track, and the opposite end of the metallic tie strip 42 has a similar standard 41 to which a guide strip 40 is secured. In case two or more tracks run in alignment, the standards are bolted together as shown in Fig. 2.

If it is preferred to use the ordinary wooden tie such as is indicated in Fig. 8 by the numeral 44, it is necessary to provide an attachment 45 which consists of a Y or fork-shaped plate 46 having a vertical standard 41 upon one end to which the guide 40 is secured. The arms 47 of the plate 46 are bent downwardly and upon each side of the wooden tie 44, said plate 46 being secured to the upper side of the tie as shown in Fig. 2.

The car in traveling along has four wheels such as 29 engaging under the guide strips 40 upon each side by the means of the flange 31 upon said wheels 29.

The engagement of the flanges 30 under the guides 40 prevents the derailment of the car, and the engagement of the same wheels by their peripheries with the edges of said guides prevents any side movement of the car.

In order that the car will pass around curves the horizontal rearward spring movement of the rollers 29 is provided and controlled by the spring 36 and in the case of any inequalities in the track or obstructions thereon, the tilting movement of the roller 29 upon the cam plate 19 is provided, this movement also being controlled to a certain extent by the spring 36. The tilting or rocking movement of these parts need not be very pronounced, as a slight movement of the plates 22 vertically in the opening 21 will permit the desired action. Although I have here shown but a slight space between said plates and the upper and lower edges of said opening, such space may be enlarged if desired. (See Fig. 1.)

Having fully described my invention, what I claim is—

1. Improved devices for preventing railway cars from leaving the rails having a car attachment comprising a three-sided rectangular frame, the back plate of which has upwardly projecting arms secured to the truck beam, a three-sided rectangular frame bolted within the sides of said outer frame, bracket arms holding said inner frame to the journal supports, a horizontal opening in the front of said inner frame, projecting ears or plates upon an interior casting, projecting through said opening, said casting comprising a plate normally adjacent to the inner side of the inner frame, a projecting plate intermediate of the length of said side plate at right angles therewith, an outwardly projecting plate at right angles with the cross plate and adapted to be located adjacent to the inner frame, and said casting having a roller pivotally mounted between the projecting ears and loosely

mounted to move horizontally and rock vertically independently of the car body and truck, substantially as set forth.

2. Improved devices for preventing railway cars from leaving the rails, having a car attachment comprising an exterior frame secured to and carried by the truck, an inner frame secured in said outer frame, a horizontally movable and vertically rocking casting carrying a roller, located within said inner frame, a horizontal rod secured in said outer frame and engaging said adjustable casting and a spring upon said rod between said parts to determine the movement of the roller carried by said movable casting, substantially as set forth.

3. Improved devices for preventing railway cars from leaving the rails having a car attachment comprising an exterior frame secured to and carried by the truck, an inner frame secured in said outer frame, a vertically rocking and horizontally movable casting carrying a roller, located within said frame, a horizontal rod secured in said outer frame and engaging said movable casting, a spring upon said rod between said parts to control the horizontal movement of said roller carried by said casting, said casting engaging a horizontally mounted oscillatory plate by means of which the same is vertically movable, substantially as set forth.

4. The improved double-track derailment-preventing mechanism, comprising an attachment 2 applied to each side of the car-trucks, and having two outwardly-projecting end-plates 12 forming with its back-plate 11 a three-sided casing, an elongated rectangular-frame 13 loosely fitted within said casing,

plates 15 bolted to the sides of said casing near its outer end-plate 16 and to the truck of the car, a bolt 17 passing through the sides 12 and 14 and having a nut 18 upon one end, a plate 19 mounted to rock or tilt upon said bolt between said side-plates of the said rectangular-frame, the forward-plate of said frame having a horizontal-opening 21 extending from one of its side-plates to the other, two perforated-plates 22 fixed upon the outer end of a casting 23 loosely located in said opening and projecting therethrough beyond the outer end of said frame, the casting 23 loosely mounted within said frame to rock vertically and move horizontally therein and provided with a slot at its rear end loosely engaging the free edge of said plate 19, a flanged roller mounted to revolve between said perforated plates 22 outside of said frame, a spring which normally holds said casting in contact with the outer end of said frame, parallel double tracks, a guide-rail having a laterally-projecting flange and extending one along each side of the double tracks so as to be engaged by the flanged-roller of said attachment, the ties of the double-tracks, horizontal-strips 42 applied to said ties and having vertical standards 41 to which said guide-rails are bolted, the standards of adjacent tracks being bolted together, and means for securing said strips in position, substantially as herein specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES W. MCBRYER.

Witnesses:

HERBERT S. ROBINSON,  
ALFRED A. EICKS.