

J. B. WRIGHT.
SAFETY ATTACHMENT FOR CAR BRAKES.
APPLICATION FILED FEB. 11, 1910.

978,979.

Patented Dec. 20, 1910.

2 SHEETS-SHEET 1.

Fig. 1.

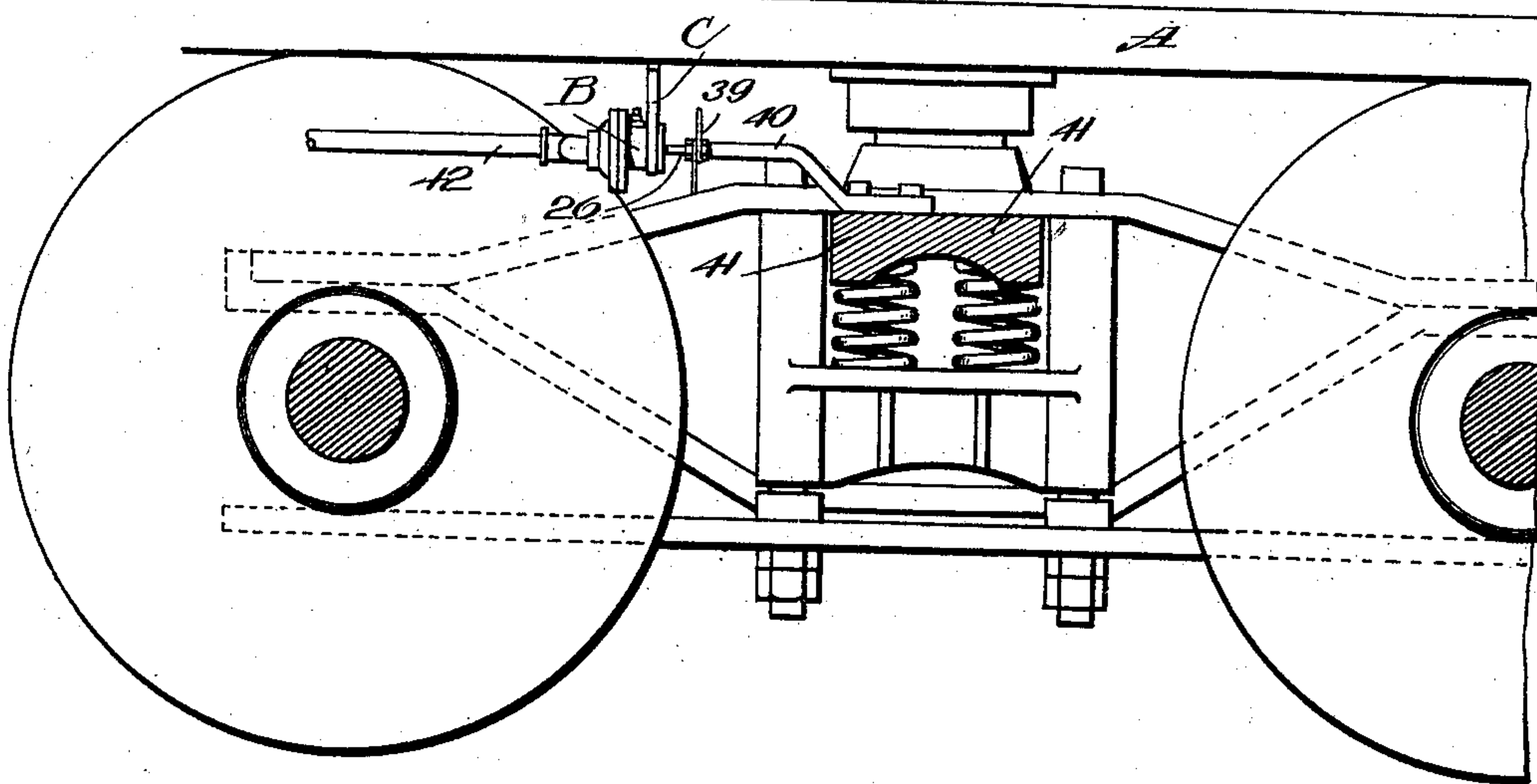
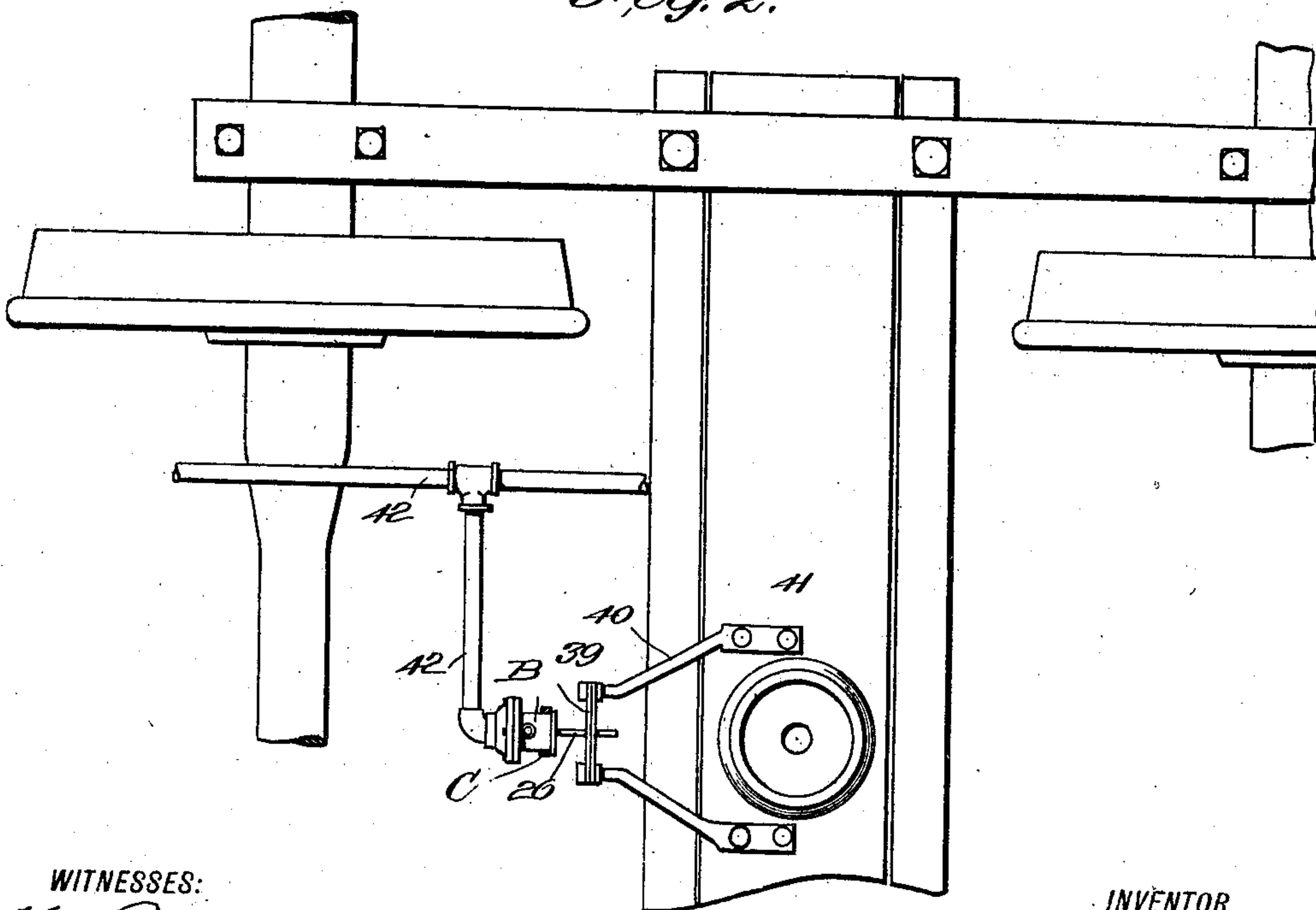


Fig. 2.



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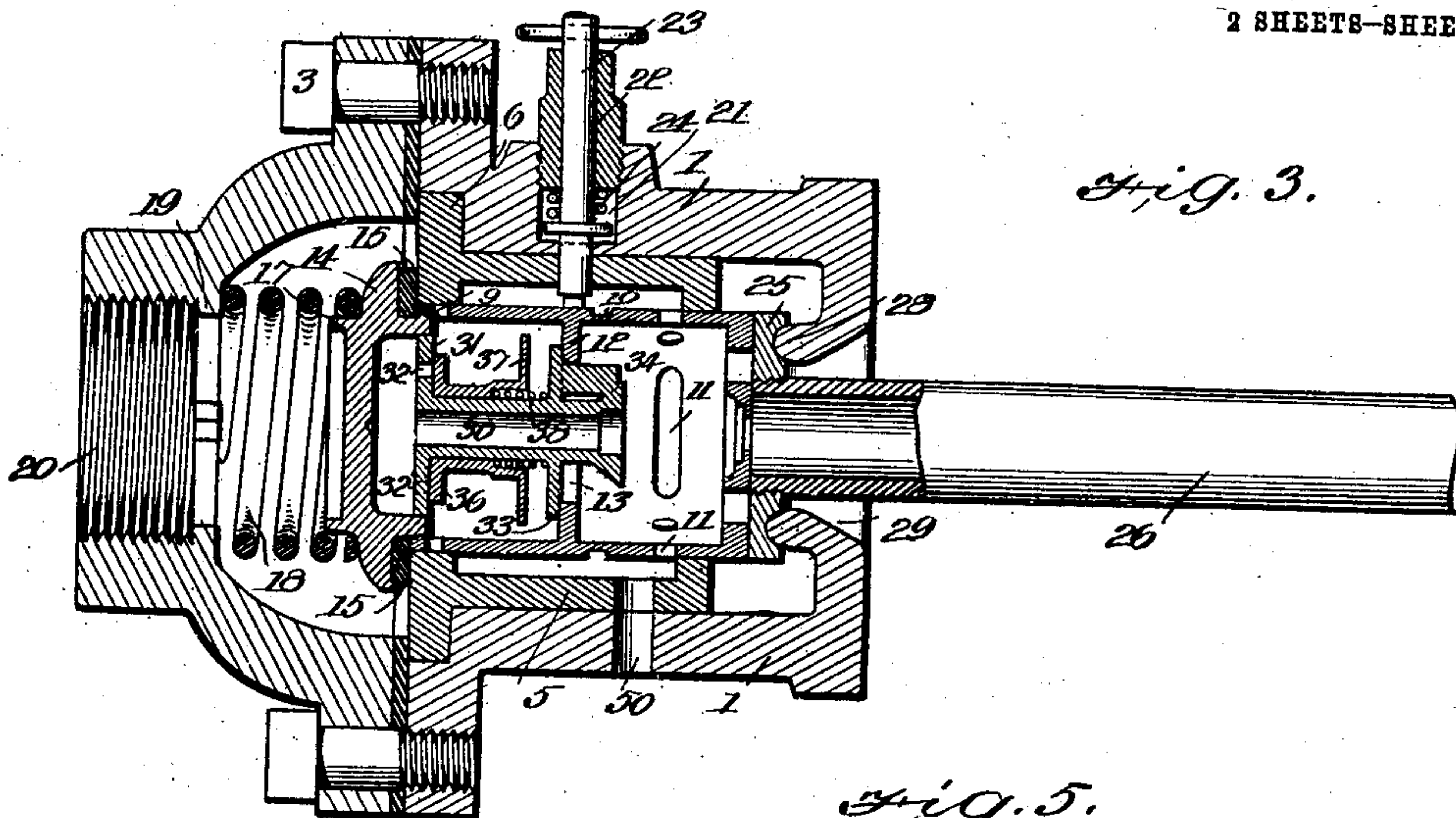


Fig. 3.

Fig. 5.

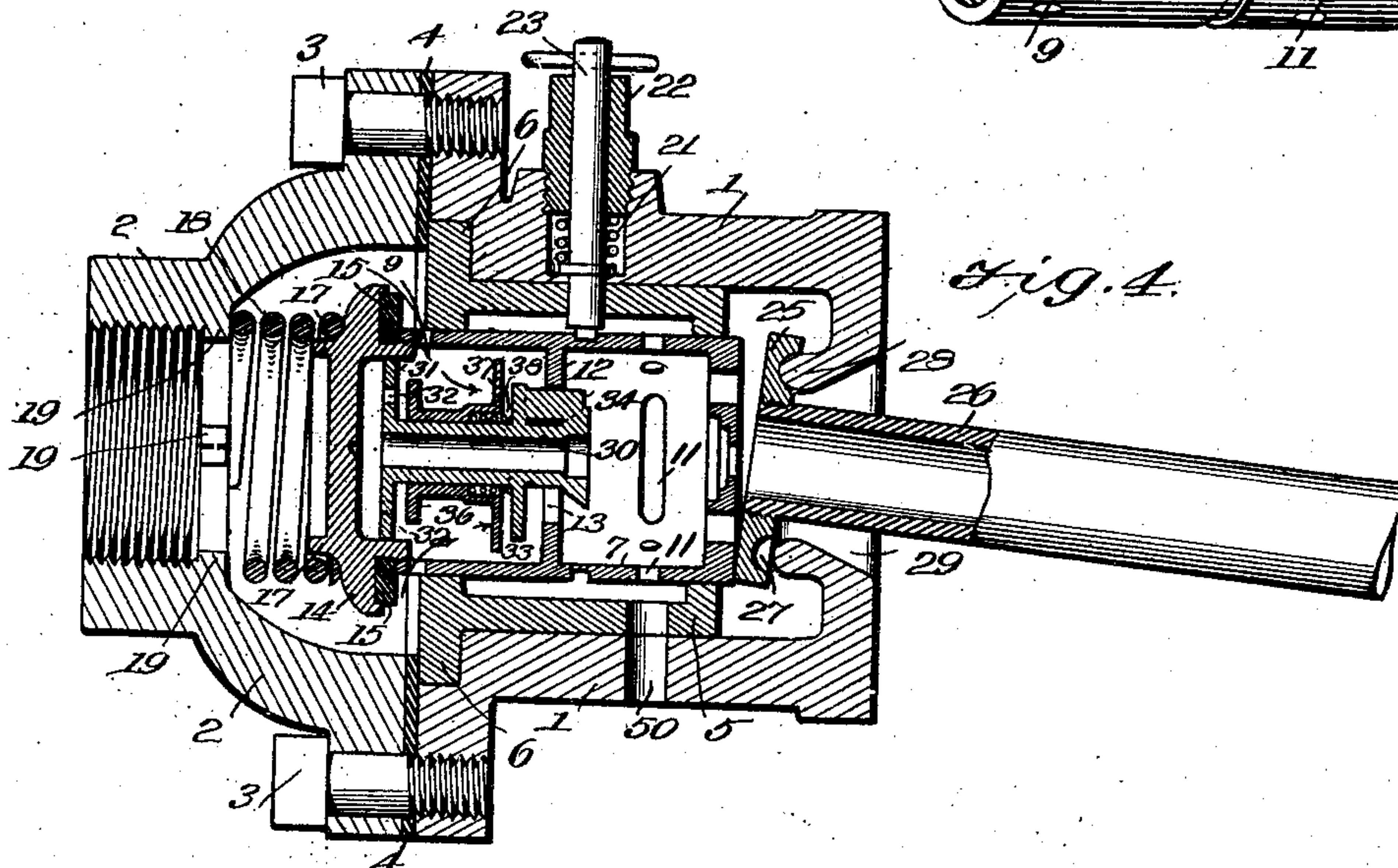
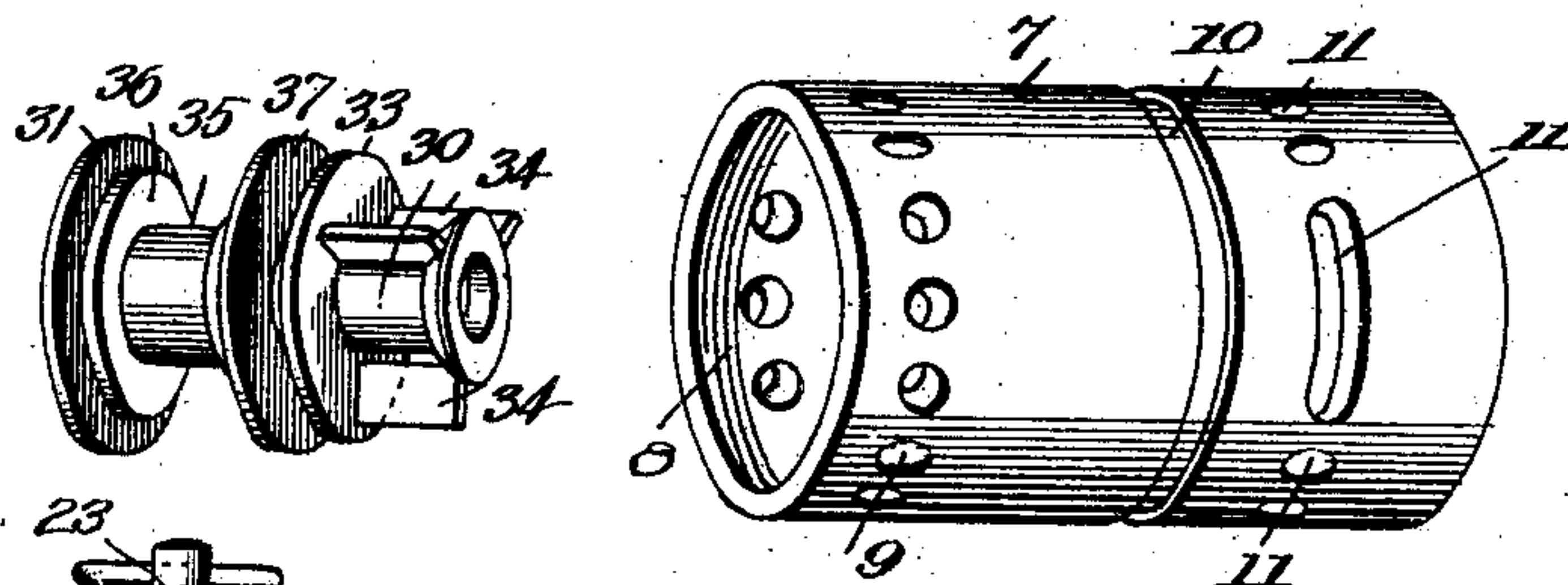


Fig. 4.

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JOHN BUNYAN WRIGHT, OF GREENSBORO, NORTH CAROLINA.

SAFETY ATTACHMENT FOR CAR-BRAKES.

978,979.

Specification of Letters Patent.

Patented Dec. 20, 1910.

Application filed February 11, 1910. Serial No. 543,269.

To all whom it may concern:

Be it known that I, JOHN BUNYAN WRIGHT, a citizen of the United States, and a resident of Greensboro, in the county of Guilford and State of North Carolina, have made certain new and useful Improvements in Safety Attachments for Car-Brakes, of which the following is a specification.

My invention relates to an apparatus for automatically operating the brakes of a railway train, in case of accident to the trucks, or from any other cause which tends to throw the trucks into an abnormal position, and it consists in the combinations, constructions and arrangements herein described and claimed.

This invention is an improvement on that disclosed in a prior Patent, No. 946,142, of January 18, 1910, the main difference being in the provision of a novel form of valve which accomplishes certain objects, which the valve in the patent mentioned above is incapable of effecting.

One of the main objects of the invention as stated above, is to provide a novel form of valve which will open and close automatically after an abnormal movement of the trucks, so as to let the air in the train pipe out intermittently, this intermittent action causing the brakes to act gradually on the wheels so as to bring the train to a gradual stop. The intermittent action of the valve also conserves the air so that when the reservoirs are to be recharged, only a small amount of air is necessary.

Other objects and advantages will appear in the following specification and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings in which similar reference characters indicate like parts in the several views and in which—

Figure 1 is a side view of a car body and trucks with my invention applied thereto. Fig. 2 is a plan view of the brake operating mechanism. Fig. 3 is a vertical section through the valve casing showing the normal position of the valve. Fig. 4 is a similar view showing the valve actuating rod in its operative position, and Fig. 5 is a perspective view of the main valve and of the inner valve.

Referring now to Fig. 1, I have shown therein the lower portion of a car A, to which the valve casing B is attached by any

suitable means, such as a suspending rod C. The construction of the valve casing and valve is clearly shown in Figs. 3, 4 and 5. The valve casing consists of a main body portion 1 of the shape shown in the figures. The casing is provided with a cap 2 which is secured to the main body by means of bolts 3, suitable packing 4 being interposed therebetween. The body of the casing 1 is cored out to receive a guide-cylinder 5 which is provided with a flange 6 arranged to enter a recess in the end of the casing. The guide-cylinder has central openings at each end adapted to receive the outer valve cylinder 7. This cylinder is of the form shown in Fig. 5. It is threaded at 8 internally, at one end, and is provided with a row of perforations 9. An annular groove 10 permits the locking of this valve in its shifted position. Near the other end it is provided with a series of perforations 11 for the outlet of air. An inspection of Figs. 3 and 4 will show that this cylinder has a partition provided with a central opening 13.

One end of the cylindrical valve 7 is closed by means of a cap 14 which is provided with threads arranged to engage the threads 8 of the cylinder 7 so as to hold these parts together. A gasket 15 is provided which is held between the cap and the end of the cylinder in the manner shown in the figures. The cap is provided with a cored out portion 16 on one side, and with an annular flange 17 on the other adapted to fit in the interior of a coil spring 18. The opposite end of the spring bears against a series of inwardly projecting lugs 19 extending toward the center of the threaded opening 20.

The casing 1 is perforated at 21 and a perforated plug 22 is screwed into the opening. A locking pin 23 extends through the perforated plug and through an opening in the cylinder 5 and is provided with a reduced end portion adapted to extend into the annular locking groove 10 in the cylinder 7, when the cylinder is in the position shown in Fig. 4, but is held normally against the outside of the cylinder 7 by means of a coil spring 24. The valve 7 is held normally by means of the spring 18 in contact with the head 25 of the operating rod 26. The head 25 is provided with an annular groove 27 arranged to receive the rounded flange 28 which projects inwardly toward the interior of the casing 1. The latter is provided with a conical opening 29 to permit the entrance

of the rod 26 and also to permit a movement of the latter.

The construction of the inner valve member forms one of the main features of my invention and it consists of a hollow cylinder 30 having a circular head 31 provided with openings 32. The cylinder 30 is also provided with a flange 33 adapted to seat against the partition 12 so as to cut off the air which might pass through the central opening. Secured to one side of the flange 33 and to the outer side of the cylinder 30 are the guide plates 34 which guide the inner valve in its movement through the opening 13.

Slidably disposed on the cylinder 30, between the flange 31 and the flange 33 is a cylinder 35, which is provided with a head 36 of lesser diameter than the head 31, and at its opposite end with a head 37 which is approximately of the same diameter as the head 31. The cylinder is recessed for the reception of a coil spring 38 which tends to keep the head 36 against the head 31.

From the foregoing description of the various parts of the device the operation thereof may be readily understood.

The apparatus is set up as indicated in Fig. 1. The rod 26 extends through an opening in a plate 39 which is held by hangers 40 secured to the truck 41. The plate 39 is slotted so as to permit some movement of the truck, but any undue movement, as for instance, when the wheels jump the track will cause the rod 26 to be moved and hence the valve cylinder 7 will be moved from its normal position shown in Fig. 3, to the position shown in Fig. 4. This will permit the pin 23 to enter the groove 10 to lock the valve in its shifted position. The air from the train pipe 42 now enters through the opening 20, past the spring 18 and through the openings 9 into the interior of the valve 7. If the flange 33 of the valve 30 is not seated against the partition 12, then the air passes through the central opening 13 and through the openings 11 to the exhaust port 50. The rush of air will move the valve 30 so as to seat the flange 33 upon the partition 12. While this movement is taking place, the air, pressing against the flange 37, will cause a movement of the cylinder 35 against the tension of the spring 38. This will uncover the openings 32 and the air will now find an outlet through the recess 16 and through the center of the cylinder 30, the central opening 13 being closed. The head 36 of the cylinder 35 is now forced against the head 31 thereby closing the openings 32 and preventing the escape of air in this direction. The movement of the head 36 as well as the pressure of air now causes the cylinder 30 to move farther into the recess as shown in Fig. 4, thereby again uncovering the opening 13. The incoming air

now passes through the opening 13 and forces the valve 30 to reseat against the partition, at the same time moving the cylinder 35 to uncover the openings 32. It will thus be seen, that there is an intermittent action of the cylinders 30 and 35 causing a shutting off and a release of the air from the train pipe. This action is kept up as long as the pin 23 is engaged in the locking groove 10. When the rod 26 is brought back into position the pin 23 may be pulled outwardly thereby releasing the main valve 7 and causing it to assume its normal position as shown in Fig. 3.

I claim:

1. In an apparatus of the class described, the combination with a train pipe provided with an escape opening, of a valve adapted to act intermittently for opening and closing a vent from the train pipe, said intermittent action being maintained by the pressure of air within the train pipe.

2. In an apparatus of the class described, the combination with a train pipe provided with an escape opening, of a valve adapted to act intermittently for opening and closing a vent from the train pipe, and means for actuating said valve by an abnormal movement of the trucks.

3. In an apparatus of the class described, the combination with a train pipe provided with an escape opening, of a main valve normally closing the opening and an auxiliary valve disposed within said main valve and adapted when the latter is actuated to act intermittently for closing and opening a vent from the train pipe.

4. In an apparatus of the class described, the combination with a train pipe provided with an escape opening, of a main valve normally closing the opening, an auxiliary valve disposed within said main valve and adapted when the latter is actuated to act intermittently for closing and opening a vent from the train pipe, and means actuated by an abnormal movement of the trucks for moving the main valve.

5. In an apparatus of the class described, the combination with a train pipe provided with an escape opening, of a main valve normally closing the opening, an auxiliary valve disposed within said main valve and adapted when the latter is actuated to act intermittently for closing and opening a vent from the train pipe, means actuated by an abnormal movement of the trucks for moving the train valve, and a spring locking member for locking the main valve in its shifted position.

6. In an apparatus of the class described, an exterior valve casing, a train pipe communicating therewith, a main valve within said casing, means for actuating the main valve by an abnormal movement of the trucks and a pulsating device within said

main valve operated by the air from the train pipe for intermittently opening and closing the latter.

7. In an apparatus of the class described,
5 the combination with a train pipe provided with an escape opening, of a valve casing communicating therewith, a main valve in said valve casing, means for operating said main valve, an auxiliary valve slidably dis-
10 posed within said main valve, a second aux-

iliary valve slidably disposed on said first named auxiliary valve, said auxiliary valves constituting a pulsating device for intermittently opening and closing a vent from the train pipe.

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Witnesses:

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