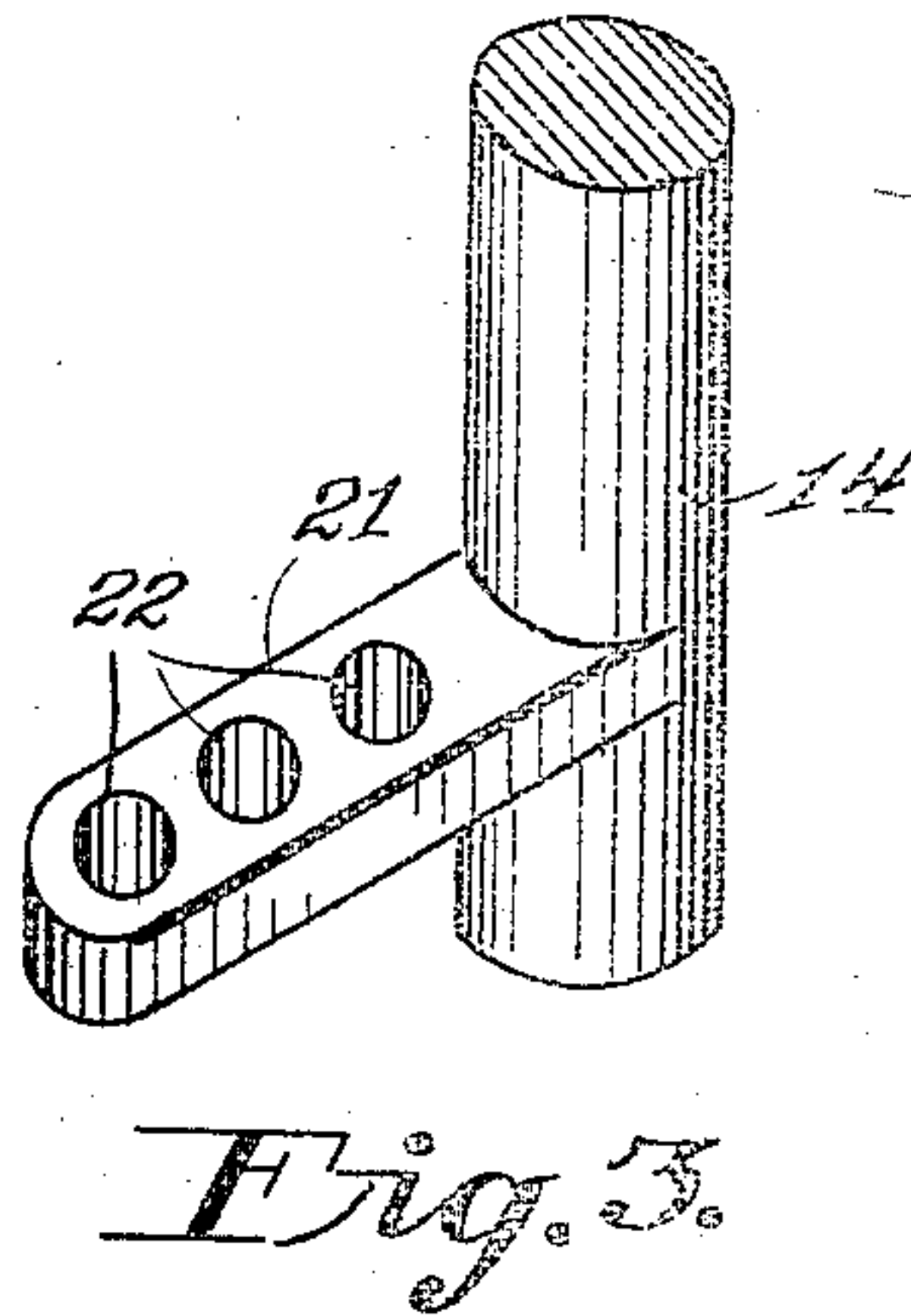
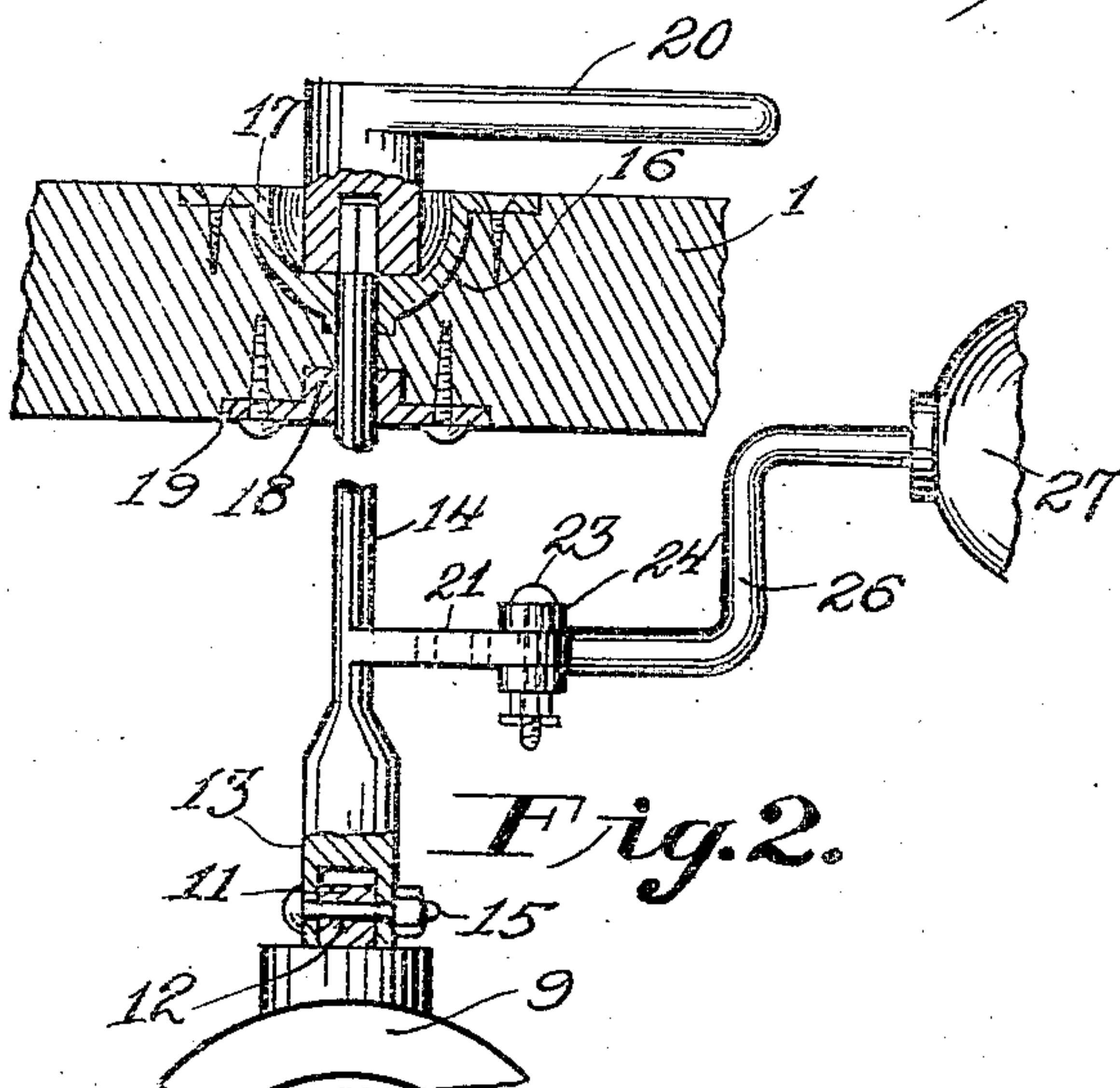
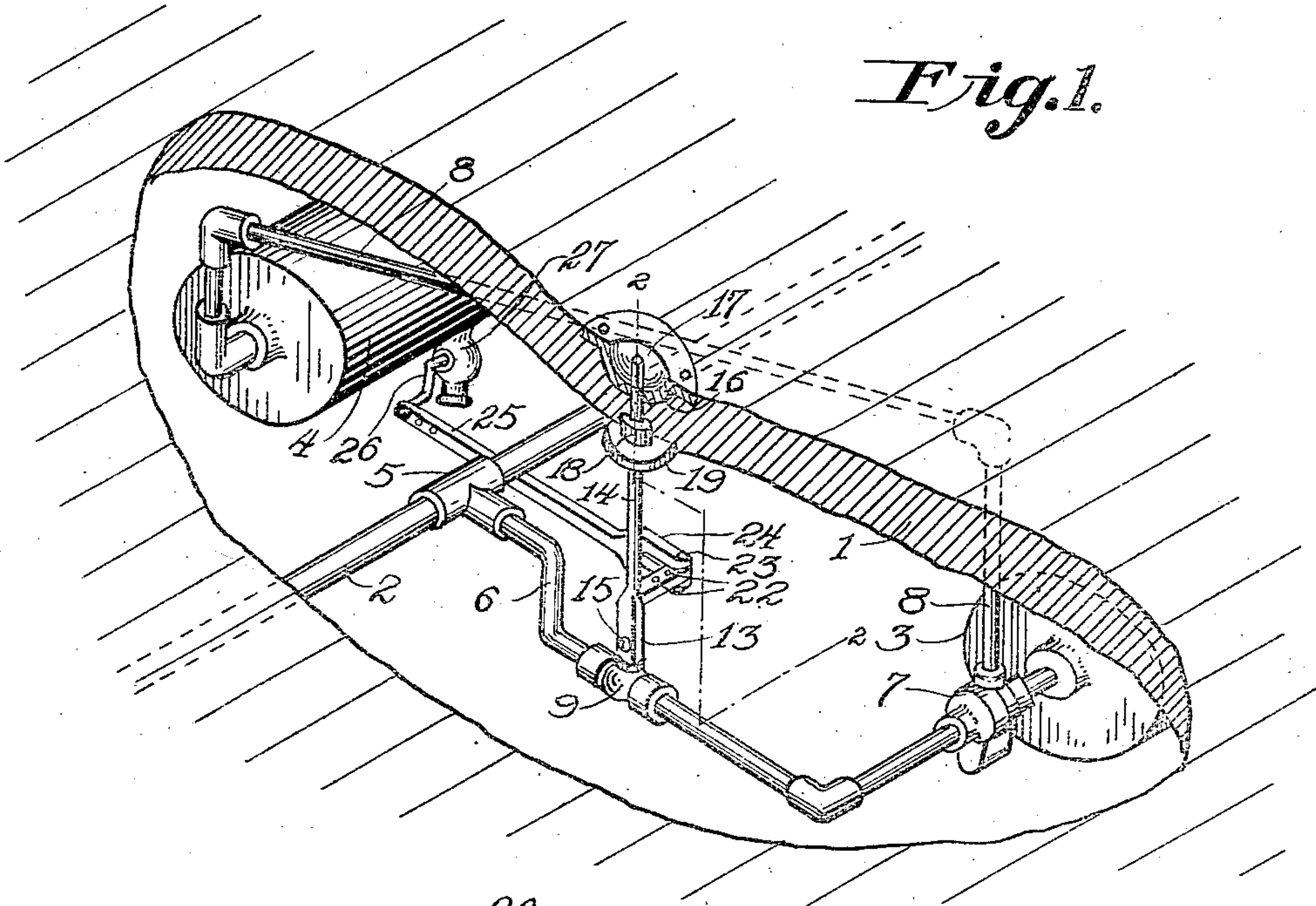


S. P. COTA.
 CUT-OUT OR RELEASE FOR AIR BRAKE APPARATUS.
 APPLICATION FILED AUG. 7, 1909.

943,769.

Patented Dec. 21, 1909.



WITNESSES

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SIMON P. COTA, OF DICKINSON, NORTH DAKOTA.

CUT-OUT OR RELEASE FOR AIR-BRAKE APPARATUS.

943,769.

Specification of Letters Patent.

Patented Dec. 21, 1909.

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To all whom it may concern:

Be it known that I, SIMON P. COTA, a citizen of the United States, residing at Dickinson, in the county of Stark and State of North Dakota, have invented certain new and useful Improvements in Cut-Outs or Releases for an Air-Brake Apparatus, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to air brakes and the principal object of the same is to provide means on a car whereby the brake mechanism thereof may be cut-off from the service pipe, said mechanism being adapted to simultaneously open a valve carried by the auxiliary reservoir so that the air therein may be released.

The invention is of a special value in connection with the signaling device for air brakes which forms the subject-matter of my application Serial Number 493,391, filed May 1, 1909, in which a signal is sounded when the brakes are applied, and a gage actuated to indicate the pressure of the brakes so that in the event of the brakes of any of the cars being defective, the car or cars containing said defective brakes may be cut out from the train. The present invention is, therefore, an improvement on said application by means of which the defective brake mechanism of a car or cars may be thrown out of service by a trainman on the car, and at the same time release the air in the auxiliary reservoir which immediately releases the brakes without having to stop the train.

In carrying out the objects of the invention generally stated above, it will, of course, be understood that the essential features thereof are necessarily susceptible of changes in details and structural arrangements, but a preferred and practical embodiment thereof is shown in the accompanying drawings, wherein—

Figure 1 is a detail view of the floor of a car, part thereof being broken away to show the improved cut-out and releasing mechanism for the air brakes. Fig. 2 is a vertical, fragmentary sectional view taken substantially on the line 2—2, Fig. 1. Fig. 3 is a detail perspective view of a portion of the operating shaft of the present invention.

Referring to the drawings by numerals, 1 designates the floor of a car, and 2 the usual service pipe which extends longitudinally of the under side of said floor. Said service

pipe, as is customary, has the usual flexible connection with the service pipes of adjoining cars and is in communication with the engine and controlled by the engineer's valve. This construction, however, is well known and, hence, it has not been thought necessary to illustrate the same.

A brake cylinder 3 is supported by the bottom of the car to one side of said service pipe 2 and an auxiliary reservoir 4 is supported on the opposite side thereof.

The service pipe 1 carries a T-coupling 5 which places a branch pipe 6 in communication with said service pipe. Said branch pipe extends into a triple valve 7 which communicates with the brake cylinder 3 and also has a pipe communication 8 with the auxiliary reservoir 4. The branch pipe 6 is provided with an intermediate valve 9 having an outwardly projecting stem 11, the end of which is preferably square and provided with a transverse opening 12. Said squared end is engaged by a socket 13 formed in the lower end of an operating shaft 14, a bolt 15 being employed to make the engagement between the socket and stem a rigid but detachable one.

The floor of the car has an opening formed through it, the upper end of which is in the form of an enlarged recess 16 in which a flanged bearing cup 17 is seated. The lower end of said opening also terminates in a recess in which the hub 18 of a collar 19 is seated. The shaft 14 extends through said collar, recesses and cup with its squared upper end within said cup and substantially flush with the surface of the floor so that it may be operated from within the car by means of a hand wrench 20 or other suitable turning tool. Said shaft 14 intermediate its connection with valve 9 is provided with a laterally projecting crank arm 21 provided with transverse openings 22 adapted for selective engagement by the pivot bolt 23 of the bifurcated end 24 of a connecting rod 25. The other end of said rod 25 is adjustably connected to a crank arm 26 carried by a relief valve 27 of the auxiliary reservoir 4.

As is well known, pressure through the main line 2 is controlled from the cab of the engine, and normally the circuit is through said main line, the branch pipe, triple valve, auxiliary reservoir, and when the brakes are set, the engineer's valve is operated to direct the pressure from the auxiliary reservoir to

the brake cylinder to operate the piston therein and thereby apply the brakes. In the event of the brake mechanism developing dynamiting tendencies, it will be seen that by manipulating the shaft 14, the valve 9 will close the branch pipe 6 so as to cut off the supply from the main line, and simultaneously open the relief valve of the auxiliary reservoir to release the pressure therein. By this mechanism, it will be seen that the brakes of a car may be readily thrown out of operation from within the car and without stopping the train, by simply turning the shaft 14, thereby obviating the necessity of first stopping a train and then crawling under the car to cut-off the brakes.

What I claim as my invention is:—

1. In an air brake system, the combination with a car provided with a main service pipe, auxiliary reservoir and brake cylinder, of a branch pipe communication between the main pipe and auxiliary reservoir, a valve carried by said branch pipe, a valve carried by said auxiliary reservoir, and a shaft projecting into the car and adapted to simultaneously close the branch line pipe and open the auxiliary reservoir valve.

2. In an air brake system, the combination with a car, the service pipe, brake cylinder and auxiliary reservoir, and branch pipe connection between said service pipe and auxiliary reservoir, of means operated within the car for simultaneously closing the branch pipe and releasing the pressure of the auxiliary reservoir.

3. In an air brake system, the combination with a car having a main service pipe, brake cylinder, auxiliary reservoir, and pipe connection between said service pipe and cylinder and reservoir, of a valve for the branch pipe, a relief valve for the auxiliary reservoir, and a shaft projecting into the car for simultaneously opening the relief valve and closing the branch line valve.

4. In an air brake system, the combination with a car, having a main service pipe, brake cylinder and auxiliary reservoir, and branch pipe connection between the service pipe and cylinder and reservoir, a cut-out valve for said branch pipe, a relief valve for said

auxiliary reservoir, and means operated from within the car for simultaneously closing the cut-out valve and opening the relief valve.

5. In an air brake system, the combination with a car and its service pipe, brake cylinder and auxiliary reservoir, and branch pipe, of a valve for the branch pipe, a relief valve for the auxiliary reservoir, a shaft having one end projecting into the car and its other end connected to the branch pipe valve, an arm carried by said shaft, an arm carried by the relief valve, and a connecting rod for said arms whereby said valves may be simultaneously operated by said shaft.

6. In an air brake system, the combination with a car and its service pipe, brake cylinder and auxiliary reservoir, and branch pipe, of a cut-out valve for the branch pipe, a relief valve for the auxiliary reservoir, a shaft operated from within the car and connected to said cut-out valve, and a connection between said shaft and said relief valve, whereby both valves are simultaneously operated by said shaft.

7. In an air brake system, the combination with a car and its service pipe, brake cylinder and auxiliary reservoir, and branch pipe, of a cut-out valve for said branch pipe, a relief valve for the auxiliary reservoir, a shaft operated from within the car and connected to the cut-out valve, and an adjustable connection between said shaft and the relief valve.

8. In an air brake system, the combination with a car and its service pipe, brake cylinder and auxiliary reservoir and branch pipe, a cut-out valve for said branch pipe, a relief valve for the auxiliary reservoir, a shaft operated from within the car and connected to said cut-out valve, an arm carried by the relief valve, and a connecting rod having a bifurcated end pivotally and adjustably connected to the arm of the shaft and its other end pivotally connected to the arm of the relief valve.

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

SIMON P. COTA.

Witnesses:

JAMES SOULES,

V. H. STICKNEY.