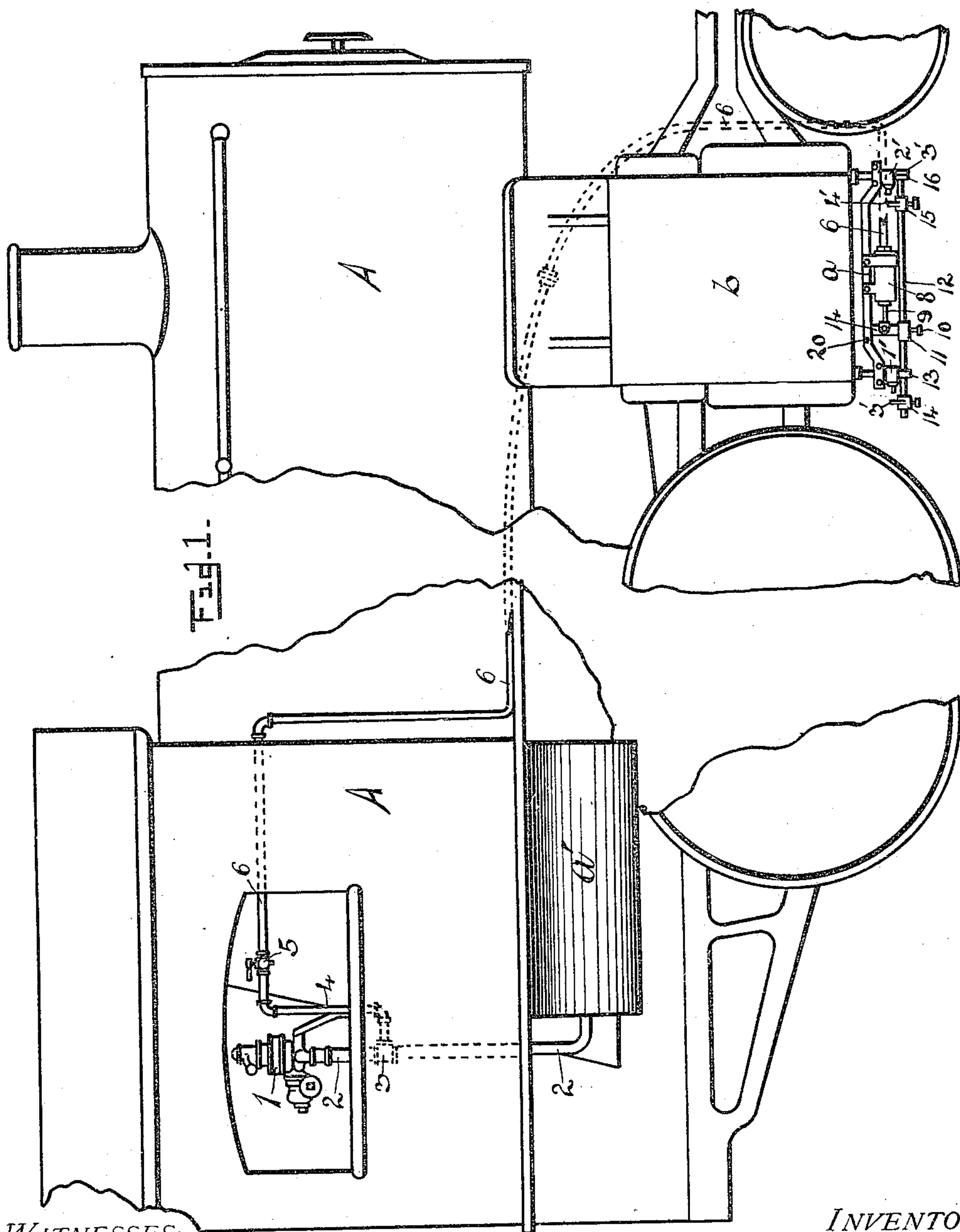


J. E. GLEASON.
LOCOMOTIVE CYLINDER COCK.
APPLICATION FILED MAR. 27, 1906.

952,898.

Patented Mar. 22, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

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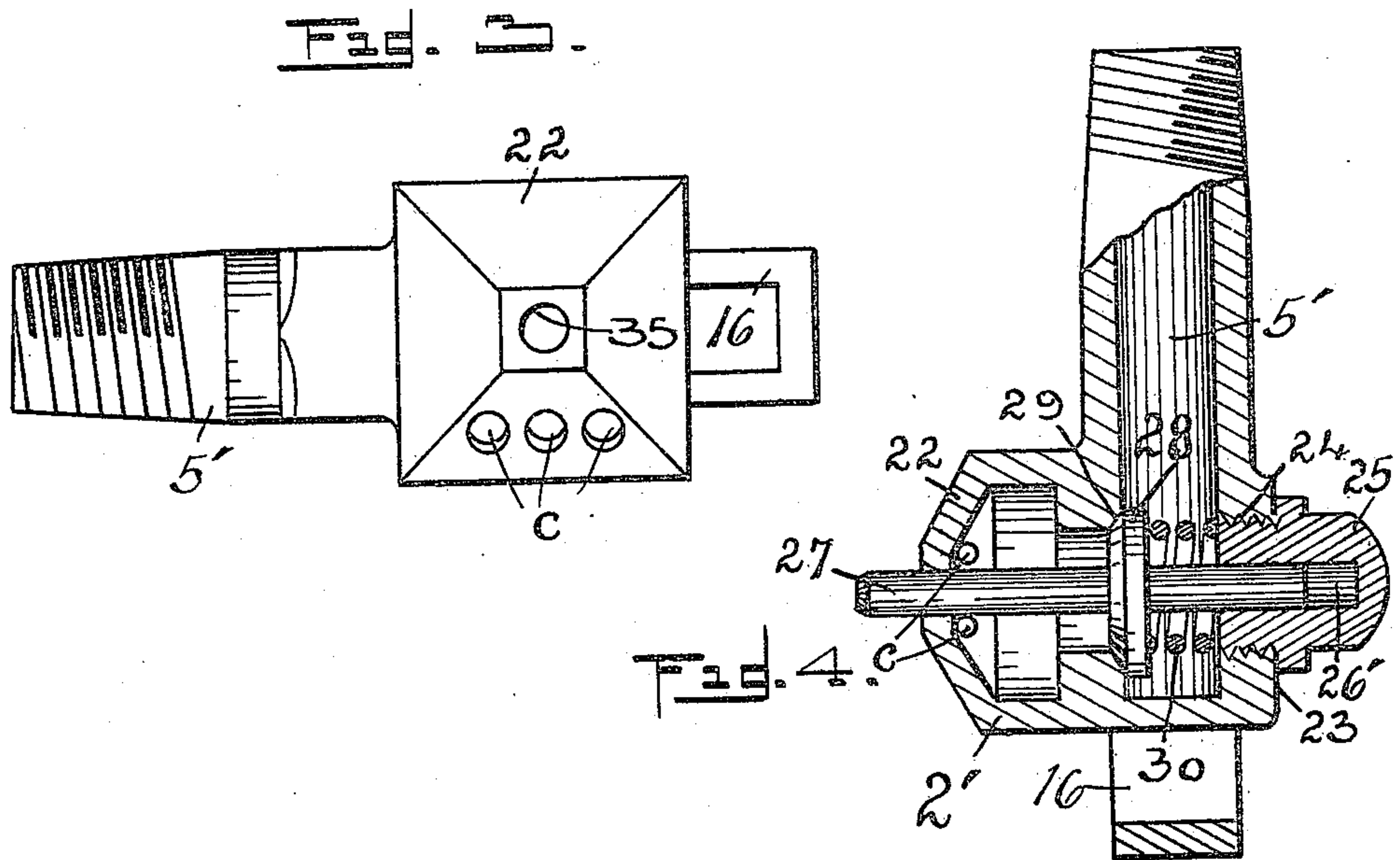
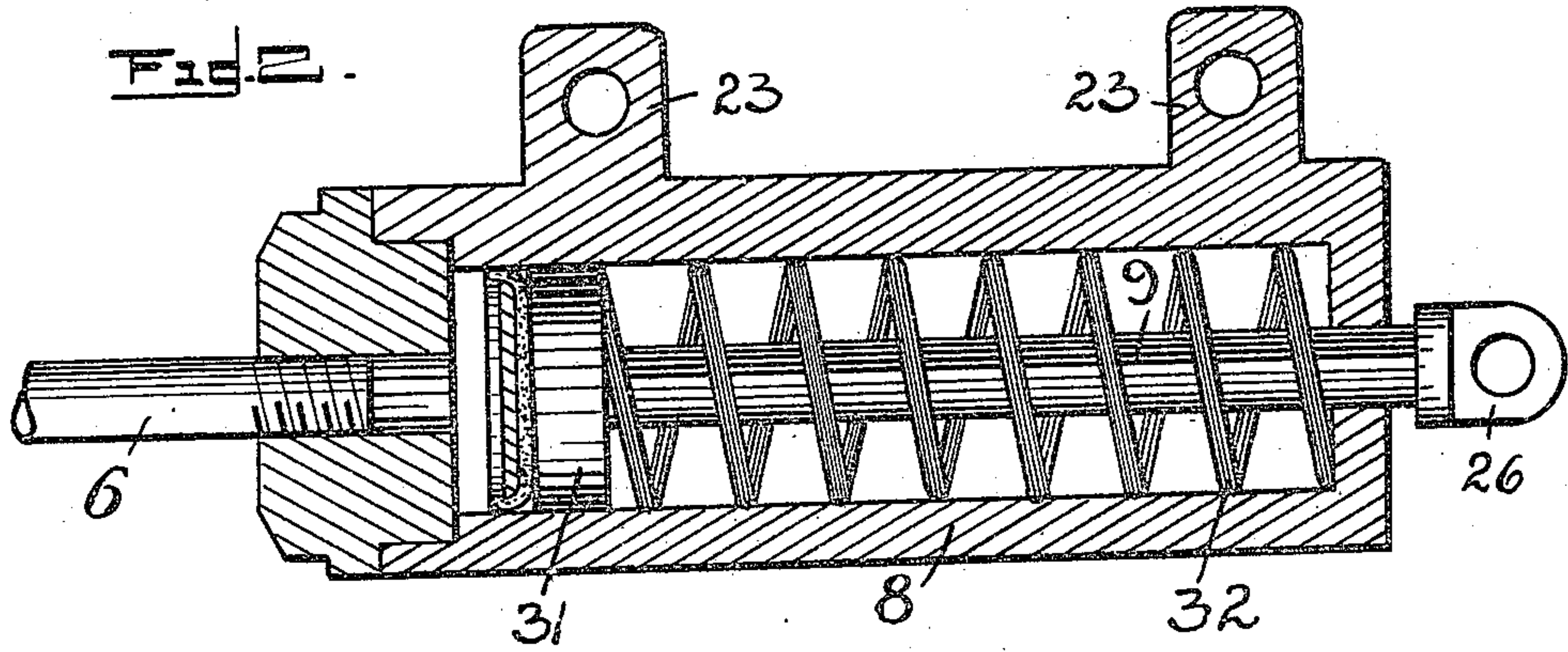
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2 SHEETS—SHEET 2.

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UNITED STATES PATENT OFFICE.

JOHN E. GLEASON, OF HAVELOCK, NEBRASKA.

LOCOMOTIVE-CYLINDER COCK.

952,898.

Specification of Letters Patent.

Patented Mar. 22, 1910.

Application filed March 27, 1906. Serial No. 308,218.

To all whom it may concern:

Be it known that I, JOHN E. GLEASON, a citizen of the United States, and a resident of Havelock, in the county of Lancaster and State of Nebraska, have invented a certain new and useful Pneumatic Appliance for the Operation of Locomotive-Cylinder Cocks.

As ordinarily constructed, locomotives are provided with a mechanism comprising a number of rods, brackets, a dumping shaft, shaft arms and boxes, used to operate the locomotive cylinder cocks.

The aim of my invention is to eliminate these instrumentalities and provide a simpler but equally positive appliance, as will be described more fully hereinafter and finally pointed out in the claims.

In the accompanying drawings I have shown in Figure 1 a broken elevation of a locomotive disclosing the cab and one of the locomotive cylinders to which my appliance is connected. Fig. 2 shows an enlarged detached sectional detail of the operating air cylinder as used in my invention. Fig. 3 shows a bottom view of one of the relief cocks. Fig. 4 is an enlarged sectional view of one of the relief cocks.

It is essential that the cylinder cocks be open at all times while the locomotive is at rest to permit the condensed vapors to find a ready escape out of the steam chest and cylinders.

It might be stated that my pneumatically operated appliance can be constructed for much less than what the usually employed appliance costs, while no changes need be made in the style or construction of the cylinder cocks now in use as my device may be readily applied to any and all kinds of cylinder cocks.

In the accompanying drawings I have shown at A, a broken portion of a locomotive provided with the cylinder *b*, the main air reservoir *a'* provided with a pipe 2, which is led to the brake valve 1, as is usual in locomotive construction.

The air supply pipe 2 is provided with a T as is shown at 3 positioned between the reservoir and the brake valve, and from this T extends the pipe 4, which is provided with the air cock 5, from which cock extends the pipe 6, leading to the brake valve 1.

To the cylinder *b*, of the locomotive are secured the similar relief cocks 1' and 2'. Secured to the necks 5' of these cocks is the

yoke bar *a*, which carries the air cylinder 8, this cylinder being provided with two securing ears 23 as shown, through which suitable bolts are passed in securing the cylinder to the yoke bar. Held within this operating cylinder 8 is a piston 31 provided with a coil spring 32 which coils about the piston rod 9, and is cushioned at one end against the piston 31 and at the other against the inner end of the cylinder 8. The spring 32 is compressed during the operation of the locomotive but expands after the air is cut out, an escape opening being provided within the three way cock 5 located within the locomotive cab.

Extending from the relief cocks 1' and 2' are suitable guide ears marked 13 and 16 respectively which guide ears slidably hold the cock rod 12, as shown in the drawing. Secured to the cock rod 12, is a cross head 14, which extends upward a suitable distance and is provided with the sleeve 11, and set bolt 10, so that this cross head 14 may be adjustably secured to the rod 12.

Secured to the yoke bar *a*, is a stop pin 20 used to check the movement of the cross head in one direction.

By means of a suitable head 26 the piston rod 9 is secured to the cross heads 14 as shown.

The relief cocks 1' and 2' are similar in construction, so I will describe the one marked 2 and shown in Figs. 3 and 4. As shown the housing of the cocks have one end 22, slightly tapered and provided with suitable escape openings *c*, while the opposite flat end 23, has the threaded openings 24. Held within this opening 24, is the cap 25, having the central opening 26, within which is held one end of the valve stem 27 carrying the cone valve 28, working against the valve seat 29. Interposed between the cap 25 and cone 28, and held upon the stem 27, is the coil spring 30, forming a spring held normally closed valve, preventing an escape of air out of the cylinder through the openings *c*, unless the cone 28, is unseated. The stems 27 at all times protrude beyond the cock housing.

It is of course understood that the cock rod 12 works parallel with the cylinder 8 and this rod 12 is provided with the stop head 3' at one end stopped against the ear 16 while at the opposite end I provide the adjustably secured dog 14' held by means of a suitable bolt to the cock rod 12. The

cylinder rod 12 is provided with a second adjustably secured dog 15 also held by means of a suitable bolt, these dogs being provided with the upwardly extending lugs marked 13' and 4' respectively. These lugs come into engagement with the stems 27 of the cone valves.

In Figs. 1 and 4 the two cylinder cocks are shown in their closed condition. It should be borne in mind that these relief cocks are provided with the escape openings *c*, permitting an escape of steam to the air through these cocks whenever their valves 28 are unseated. These relief cocks are open at all times while the engine is at rest, and this is accomplished in that as soon as the engine or locomotive comes to rest, the operator actuates the air cock 5, which is provided with a suitable discharge opening so that the air supply is cut off from the operating cylinder 8. As a result then of the spring 32 within this cylinder, the piston rod 9, is forced inward actuating the rod 12, to carry the lugs 13' and 4' into engagement with the projecting stems of the valves 28 opening these cocks and permitting the free escape of the steam and vapors of condensation within the cylinder 6. In order to again close these relief cocks the locomotive operator simply actuates the air cock 5. This cock is conveniently placed within the engineer's cab so that the same may be actuated by the operator without leaving his seat. By this means I provide an inexpensive operative device insuring the cylinder cocks being open at all times while the locomotive is at rest.

Having thus described my said invention, what I claim as new and desire to secure by United States Letters Patent is:

1. The combination with a locomotive cylinder, of a relief cock housing secured near each end and communicating with said cylinder, each housing having an escape opening a guide ear and provided with a threaded opening, a stem guiding opening and a valve seat held in alinement, of a cap within each of said threaded openings having a central recess, a valve stem slidably held within each recess and guiding opening and carrying an integral valve arranged for coaction with said seats, a spring carried by each stem interposed between a valve and cap, each stem projecting beyond its housing, a rod slidably held within said guide ears, a cross head adjustably carried by said rod, a dog secured near each end of said rod

having a lug arranged to contact at times with said stems, and means to actuate said cross head.

2. The combination with a locomotive cylinder, of a relief cock housing secured near each end and communicating with said cylinders, each housing having an escape opening and a guide ear, of a yoke member carried by said cock housing each housing provided with a threaded opening, a stem guiding opening and a valve seat, a cap within each of said threaded openings having a central recess, a valve stem slidably held within each recess and guiding opening and carrying an integral valve arranged for coaction with said seat, a spring carried by each stem interposed between a valve and cap each stem projecting beyond its housing, a rod slidably held within said guide ears, a cross head adjustably carried by said rod a dog secured near each end of said rod having a lug arranged to contact at times with said stems, a cylinder secured to said yoke bar, a piston within said cylinder, a piston rod carried by said piston and secured to said cross head, and a motive fluid conduit communicating with said cylinder all arranged as and for the purpose set forth.

3. In a device of the character described, a relief cock housing carried near each end of a steam cylinder and communicating therewith each housing having an escape opening and a guide ear, of a yoke bar carried by said cock housing, a stop pin secured to said yoke bar, each housing having a threaded opening, a stem guiding opening and a valve seat, a cap within each of said threaded openings having a central recess, a valve stem slidably held within each recess and guiding opening and carrying an integral valve arranged for coaction with said seat, a spring carried by each stem interposed between a valve and cap each stem projecting beyond its housing, a rod slidably held within said guide ears, a cross head adjustably carried by said rod and arranged at times to contact with said stop pin, a dog secured near each end of said rod having a lug arranged to contact at times with said stems, and means to actuate said cross head.

Signed in the presence of two witnesses.

JOHN E. GLEASON.

Witnesses:

J. W. HITCHCOCK,
A. A. HYERS.