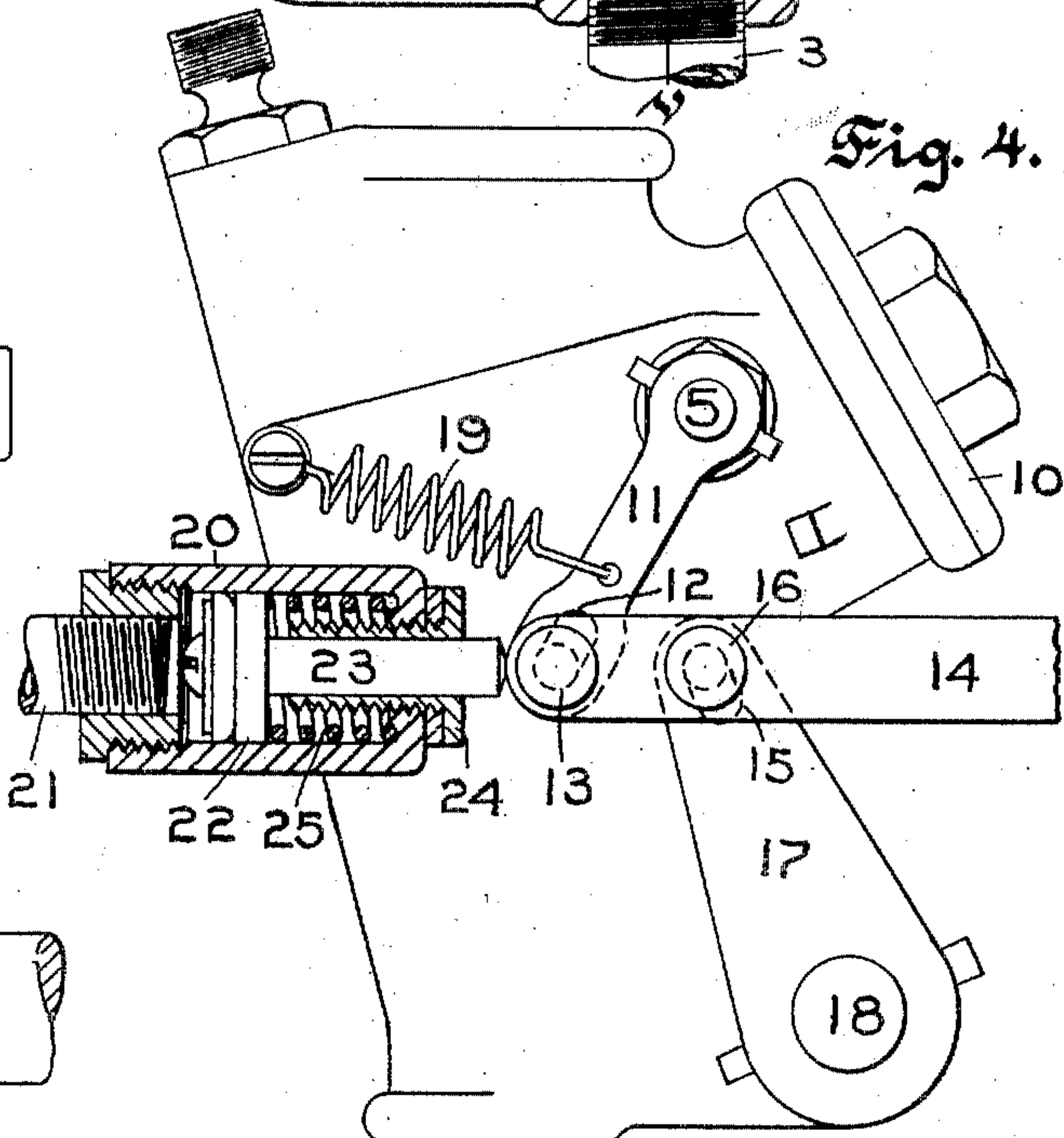
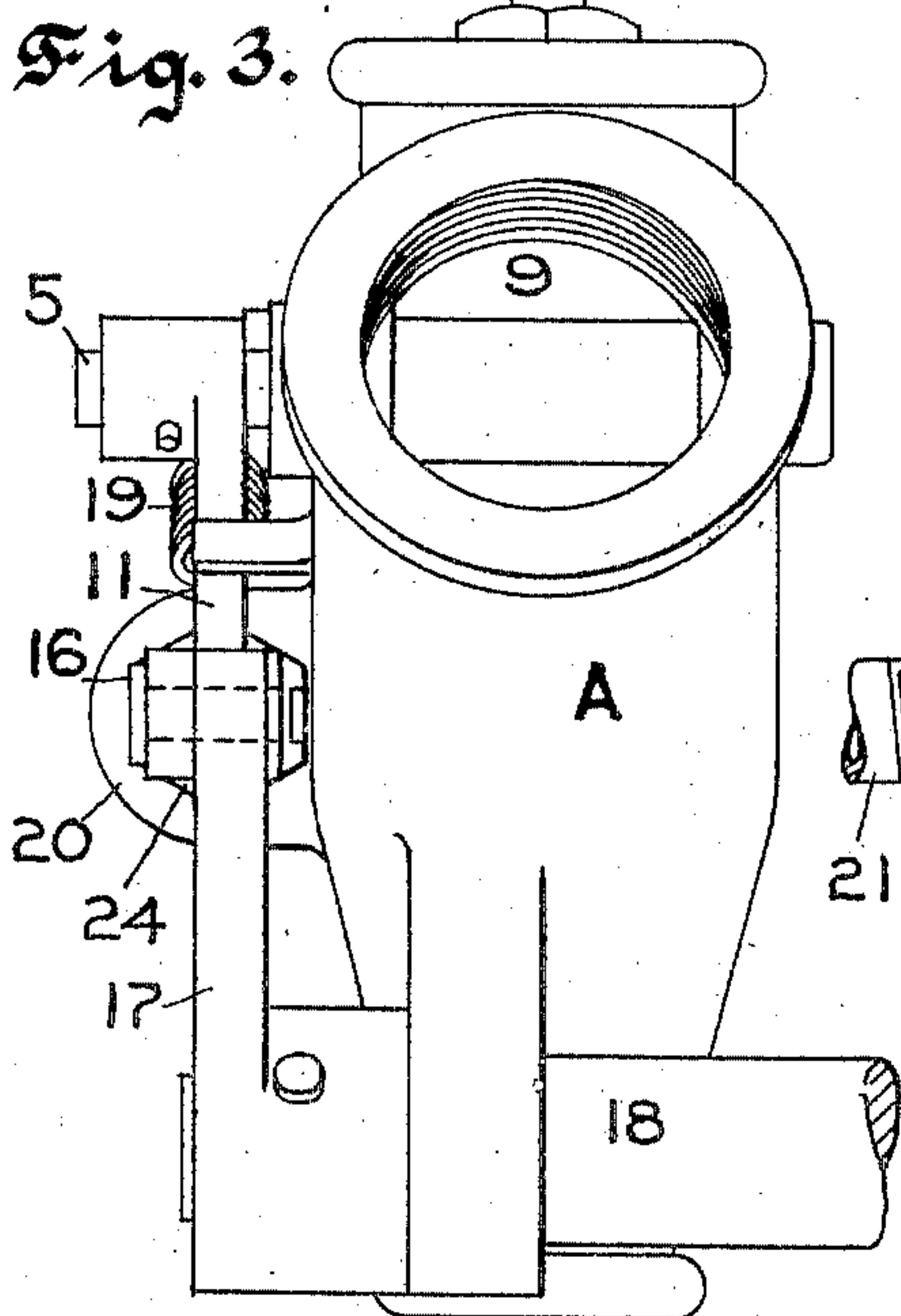
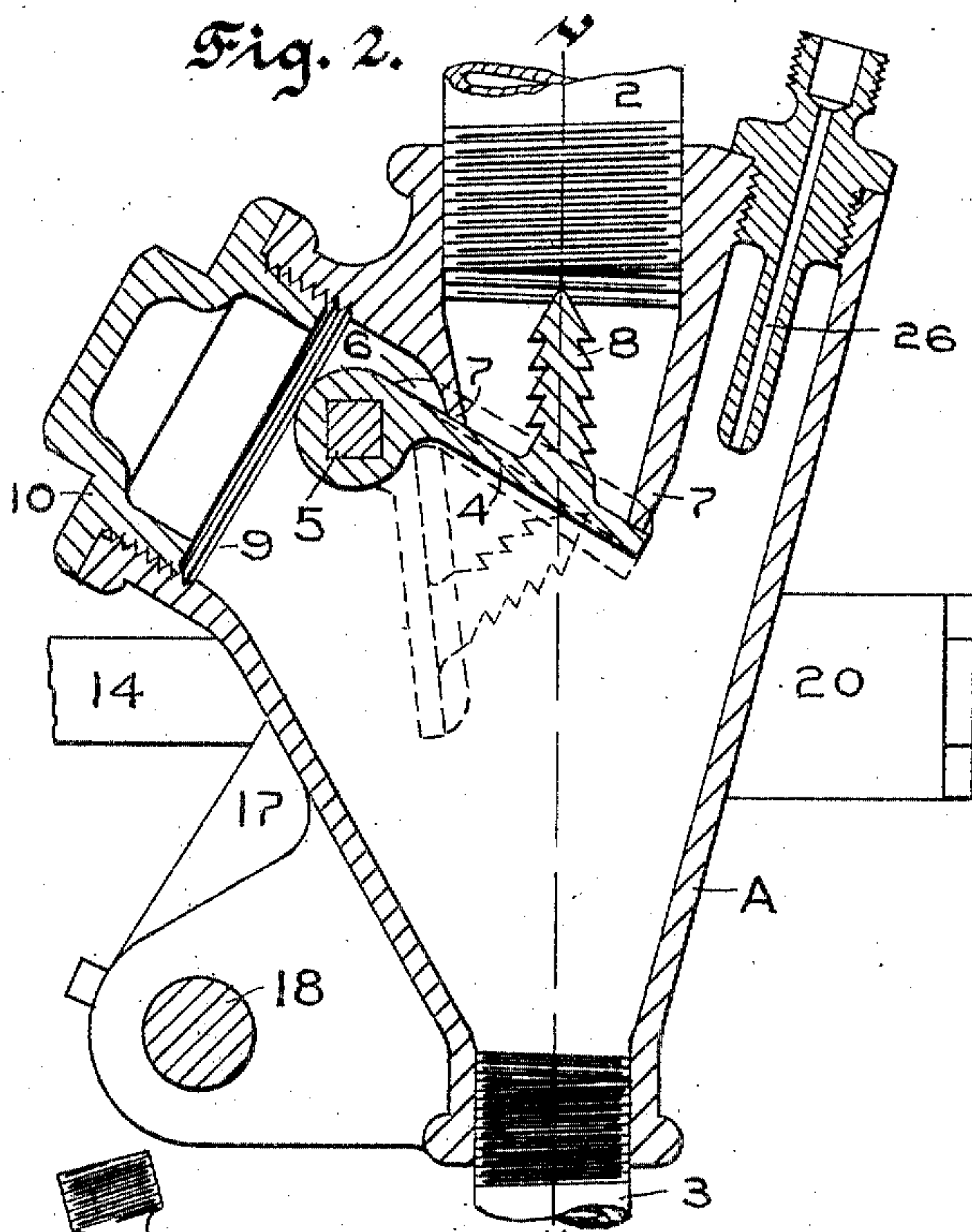
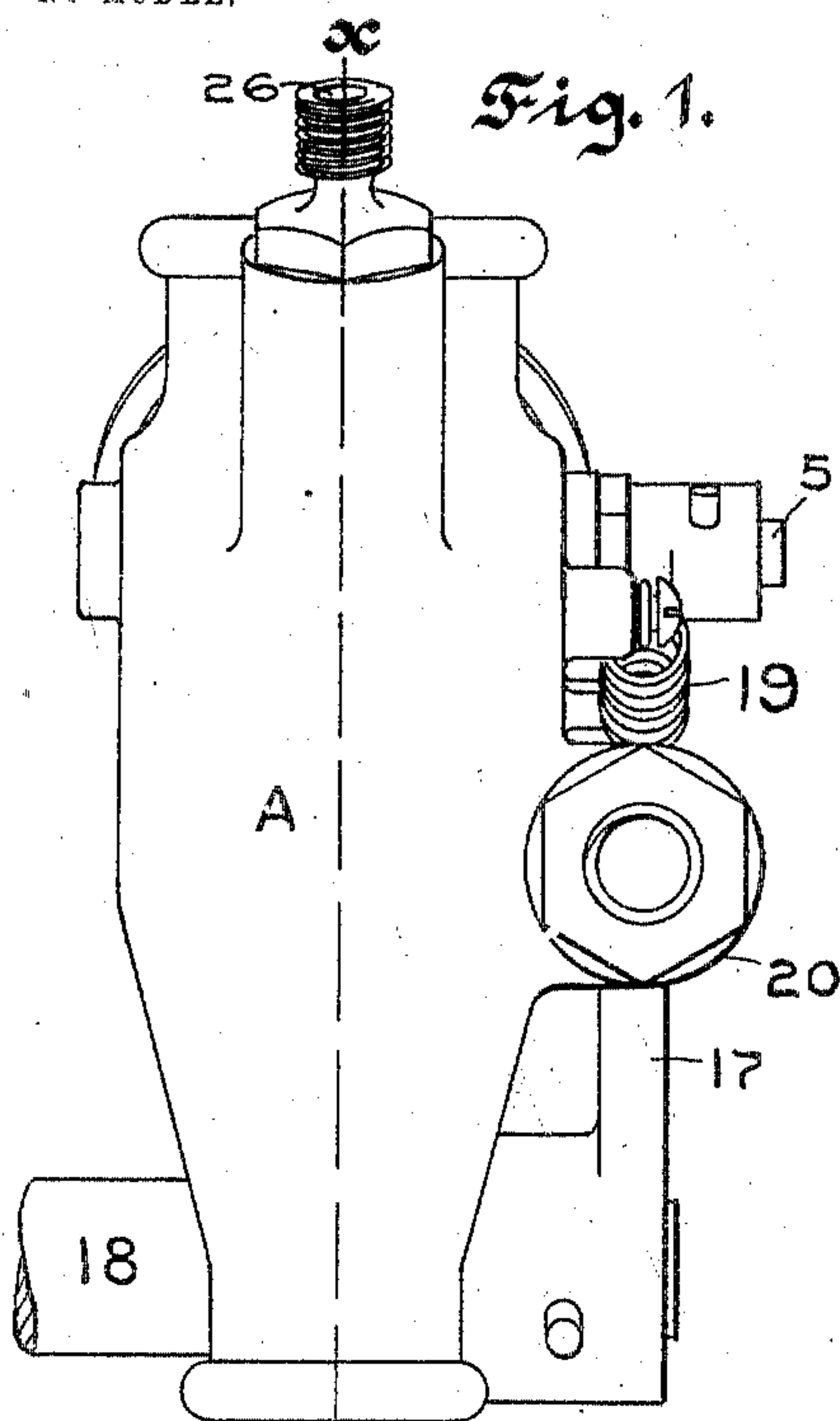


J. FARLEY.
PNEUMATIC SANDER.

APPLICATION FILED APR. 15, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses,
W. H. Palmer.
Emily F. Otis

Inventor,
James Farley.
by Lathrop Johnson
his Attorneys.

No. 777,087.

PATENTED DEC. 13, 1904.

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NO MODEL.

2 SHEETS—SHEET 2.

Fig. 5.

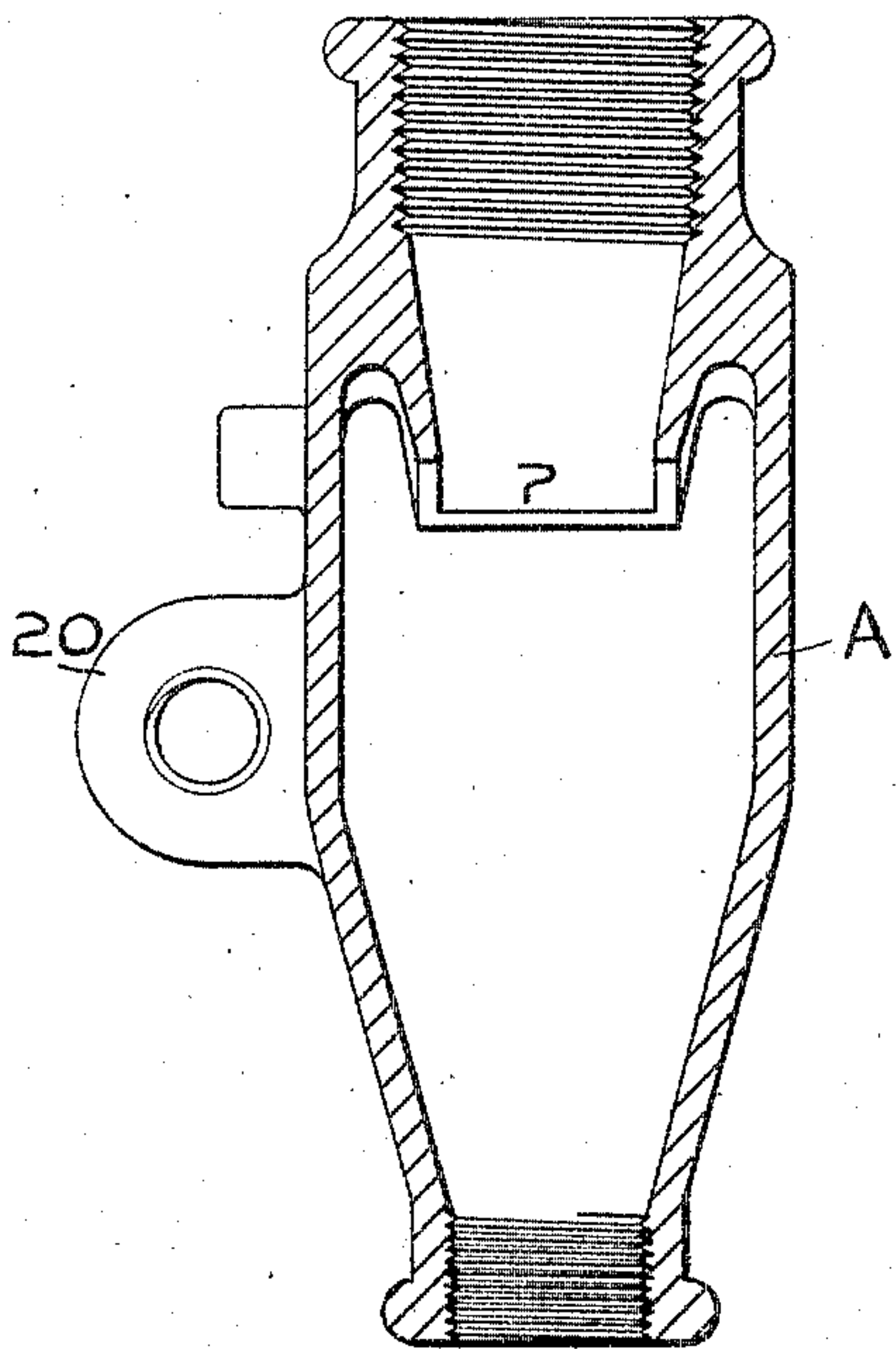


Fig. 7.

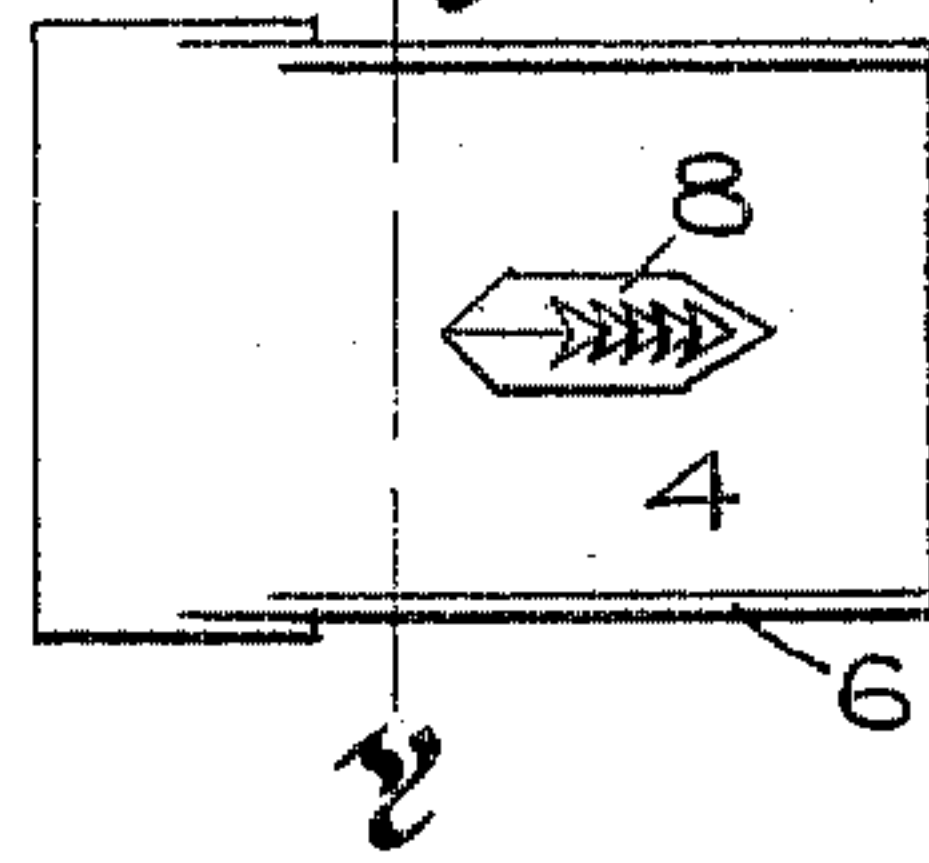


Fig. 8.

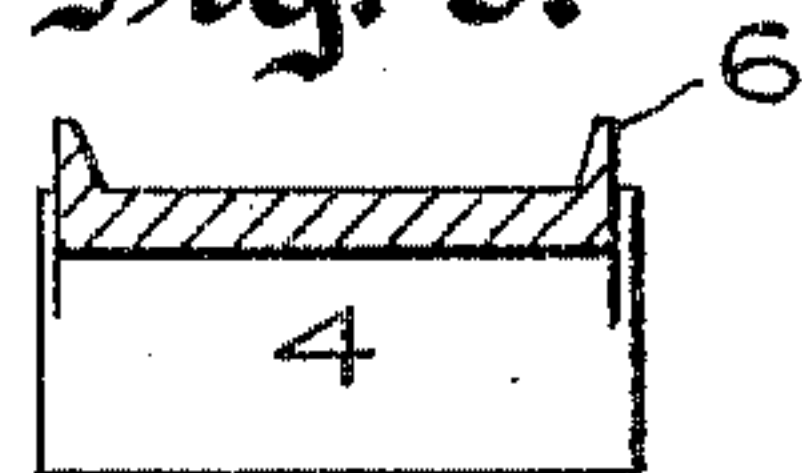
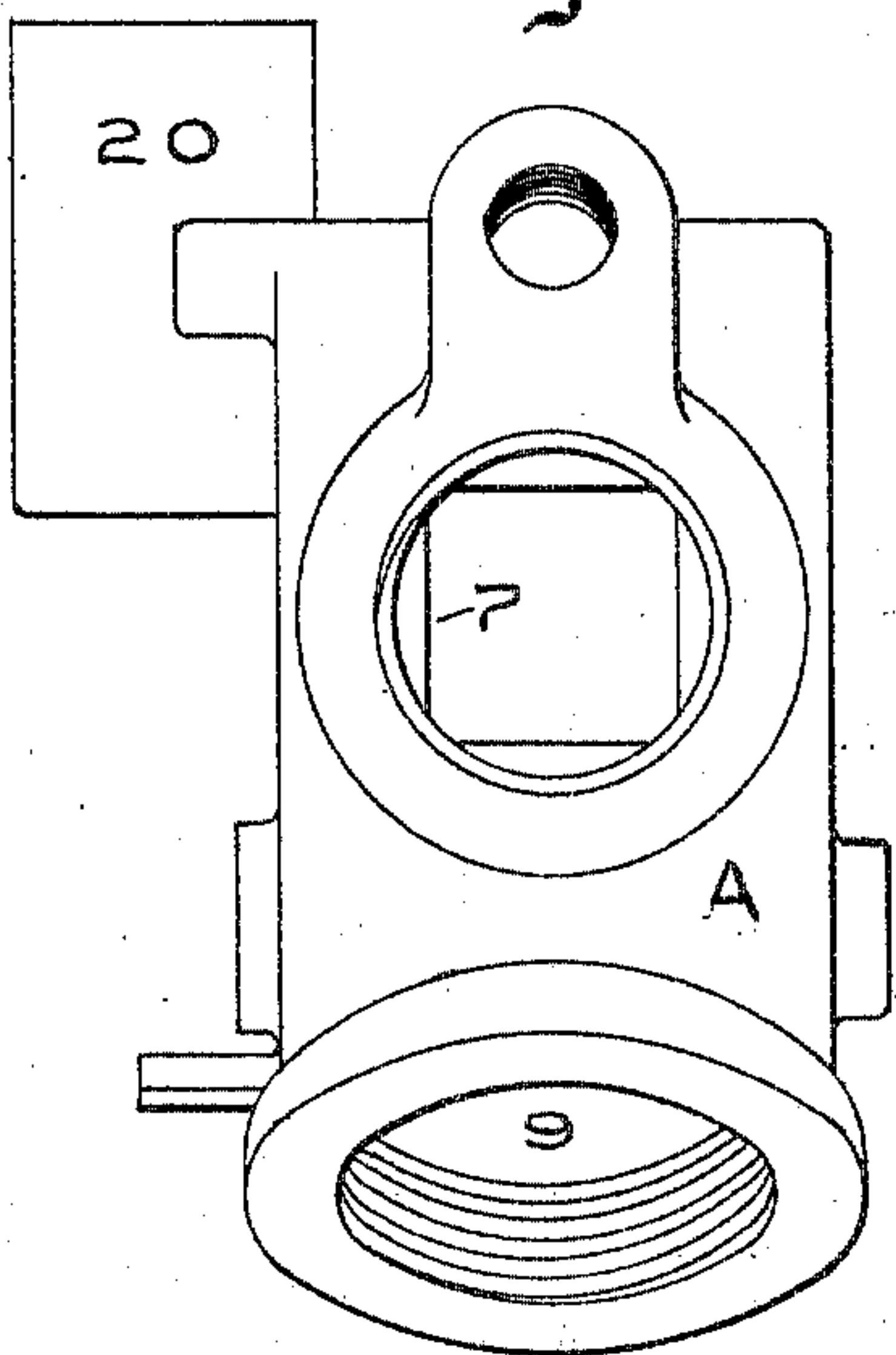


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES FARLEY, OF WAUKESHA, WISCONSIN.

PNEUMATIC SANDER.

SPECIFICATION forming part of Letters Patent No. 777,087, dated December 13, 1904.

Application filed April 15, 1904. Serial No. 203,270. (No model.)

To all whom it may concern:

Be it known that I, JAMES FARLEY, a citizen of the United States, residing at Waukesha, in the county of Waukesha and State of Wisconsin, have invented certain new and useful Improvements in Pneumatic Sanders, of which the following is a specification.

My invention relates to improvements in pneumatic sanders designed particularly for use in connection with locomotives; and it consists in the features of construction and combination hereinafter particularly described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a front end view of my improved sander. Fig. 2 is a section on line *x x* of Fig. 1. Fig. 3 is a rear end view. Fig. 4 is a side elevation, partly in section. Fig. 5 is a section of the body on line *v v* of Fig. 2. Fig. 6 is a top view of the body. Fig. 7 is a detail of a valve forming part of my invention, and Fig. 8 is a section on line *y y* of Fig. 7.

In the drawings, A represents the casing of the sander, suitably supported in connection with a sand-box and connected therewith by a pipe 2. The sander is provided at its lower end with a discharge-pipe 3, leading to the rail. The discharge end of the inlet-pipe is closed by a valve 4, fulcrumed upon the square pivot-shaft 5. The valve 4 is formed with upwardly-projecting flanges 6, between which fit the side walls of the discharge end 7 of the inlet sand-opening. As illustrated in Figs. 5 and 6, said discharge end 7 is rectangular and cut away to cooperate with the valve 4 and to hold the valve in the inclined position shown in Fig. 2. The valve 4 is provided with a serrated point 8, normally extending upwardly into the inlet-opening to loosen the sand. To allow free access to the valve and to permit its insertion and removal, I form the body of the sander upon its rear side with an opening 9, closed by a suitable cap 10. Secured upon the outer end of the valve-supporting pivot 5 is a downwardly-extending arm 11, having slot-and-pivot connection 12 and 13 at its lower end with one end of a rod 14, leading to the

locomotive-cab. (Not shown.) The rod 14 also has slot-and-pin connection 15 and 16 with the upper end of a crank 17, the lower end of said crank being connected by a suitable shaft 18 with a similar sander (not shown) upon the other side of the locomotive. The valve 4 is normally held closed by a coil-spring 19, connecting the lever-arm 11 with the body of the sander, as shown in Fig. 4.

In order to actuate the controlling-valve 4 by air-pressure, I provide a cylinder 20, mounted on the side of the sander and connected by a pipe 21 with a source of air-supply. Within the cylinder is slidably supported a piston 22, provided with a stem 23, extending through the bushing 24 in the rear end of the cylinder, a coil-spring 25 being interposed between the piston and the rear end of the cylinder. The bushing 24 is adjustable in the end of the cylinder, as illustrated in Fig. 4, and its inner end constitutes a stop, limiting the travel of the piston, and thereby limiting the movement of the controlling-valve 4. In order to prevent the outlet-opening of the casing becoming clogged and to accelerate the passage of the sand, I provide an inlet air-tube 26, extending downwardly into the body of the casing in front of the inlet sand-opening, said tube being connected at its outer end with a source of air-supply. (Not shown.)

In use the air-pressure in the cylinder 20 will throw the piston 22 against the inner end of the bushing 24, opening the controlling-valve 4. This will allow the sand to drop by gravity through the casing, its passage being accelerated and clogging prevented by the air passing through the inlet-tube 26. The serrated point 8, carried by the valve, will keep the sand loosened in the inlet-opening, and the flanges 6, carried by the valve, will prevent the sand passing under the side walls of the inlet-opening. It will be evident that the inclined position of the controlling-valve 4 will direct the sand underneath the discharge end of the inlet air-tube 26, resulting in the most effective use of the air passing through said inlet-tube.

Having now described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. A sander of the class described, consisting of a casing provided with inlet and outlet openings, a valve supported within said casing in position to close the discharge end of said inlet-opening, lever-arms connected with said valve, an air-cylinder supported alongside said arms, a piston arranged in said cylinder, a stem carried by said piston and extending through the end of said cylinder toward said lever-arms, and means for limiting the travel of said piston.

2. A sander of the class described, consisting of a casing provided with inlet and outlet openings, a swing-valve fulcrumed below the discharge end of said inlet-opening, lever-arms connected with said valve, an air-cylinder supported alongside said arms, a piston arranged in said cylinder, a stem carried by said piston and extending through the end of said cylinder toward the lever-arms, and means for limiting the travel of said piston.

3. A sander of the class described, consisting of a casing provided with inlet and outlet openings, a swing-valve closing the discharge end of said inlet-opening, levers connected with said valve, an air-cylinder supported adjacent to said levers, a piston arranged in said cylinder, a stem carried by said piston and extending through the end of said cylinder toward said levers, an adjustable stop limiting the movement of said piston, and a retracting-spring for said piston.

4. A sander of the class described, consisting of a cylinder provided with inlet and outlet openings, a swing-valve closing the discharge end of said inlet-opening, lever-arms connected with said valve, an air-cylinder supported alongside said arms, a piston arranged in said cylinder, a stem carried by said piston and extending through the end of said cylinder toward said arms, means limiting the movement of said piston, a spring interposed between one side of said piston and the adja-

cent end of the cylinder, and an inlet air-tube leading downwardly into said casing alongside its inlet-opening.

5. A sander of the class described, comprising a casing having inlet and outlet openings at its upper and lower ends respectively, a swing-valve closing the discharge end of said inlet-opening, said valve being provided with flanges coöperating with the side walls of the inlet-opening and with a point projecting upwardly into said inlet-opening, lever-arms connected with said valve, a cylinder supported alongside said arms, a piston arranged within said cylinder, a stem carried by said piston and extending through the end of said cylinder toward said arms, an adjustable stop limiting the movement of said piston, a spring interposed between one side of said piston and the adjacent end wall of the cylinder, and an inlet air-tube leading downwardly into said casing alongside its inlet-opening.

6. A sander of the class described, comprising a casing provided with inlet and outlet openings at its top and bottom respectively, a swing-valve closing the discharge end of said inlet-opening, a lever-arm connected with said valve, a connecting-rod connected with said lever-arm, a spring connecting said lever-arm with an adjacent fixed support, an air-cylinder supported alongside said lever-arm, a piston arranged in said cylinder, a stem carried by said piston and extending through the end of the cylinder toward said lever-arm, a stop limiting the movement of said piston, a spring arranged between one side of said piston and the adjacent end wall of said cylinder, and an air-inlet tube leading downwardly into said casing alongside its inlet-opening.

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

JAMES FARLEY.

Witnesses:

H. S. JOHNSON,
EMILY F. OTIS.