

June 19, 1923.

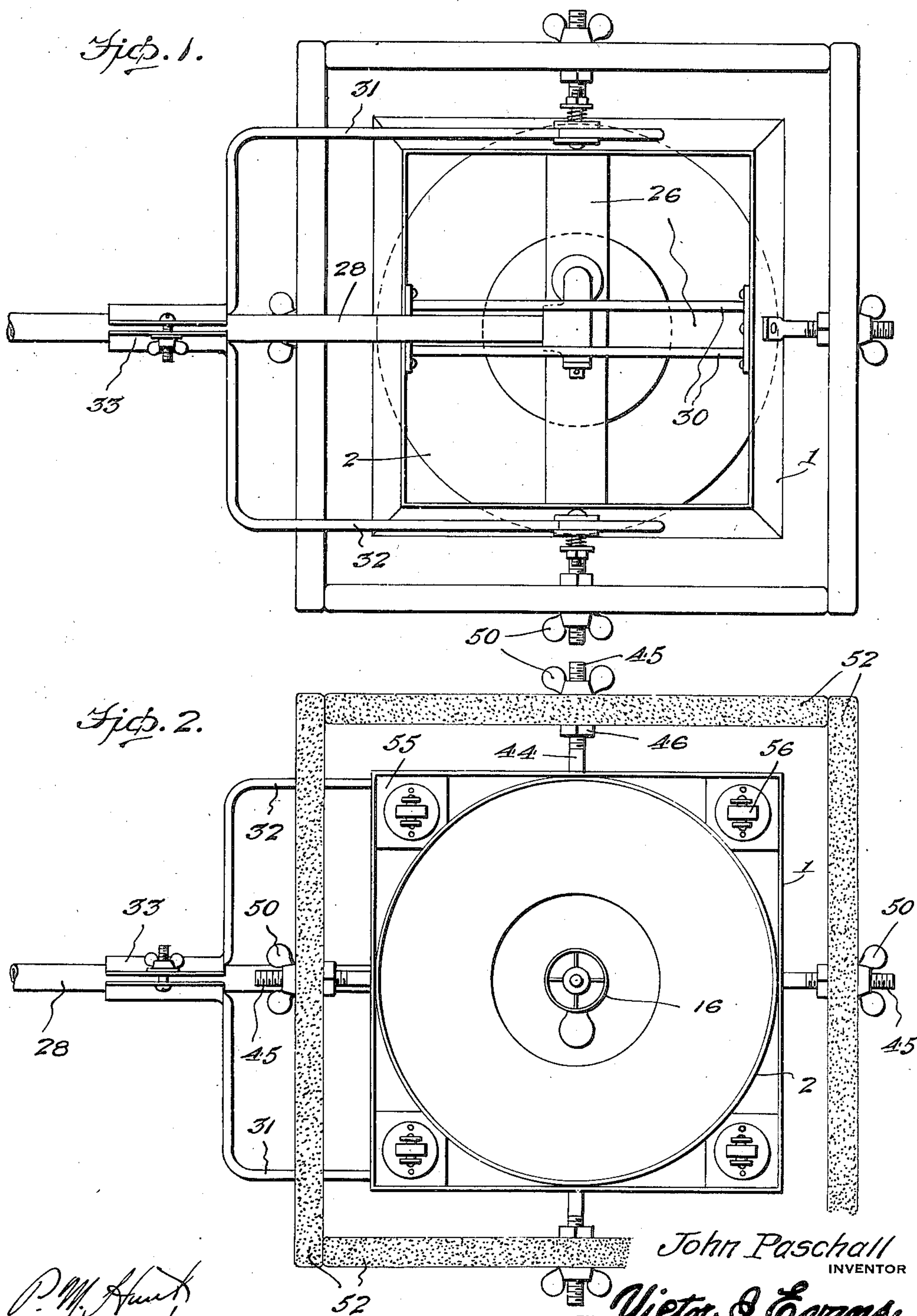
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J. PASCHALL

SPRAYING MACHINE

Filed June 14, 1921

3 Sheets-Sheet 1



*P. M. Hunt*  
WITNESS:

*John Paschall*  
INVENTOR  
*Victor J. Evans*  
BY ATTORNEY

June 19, 1923.

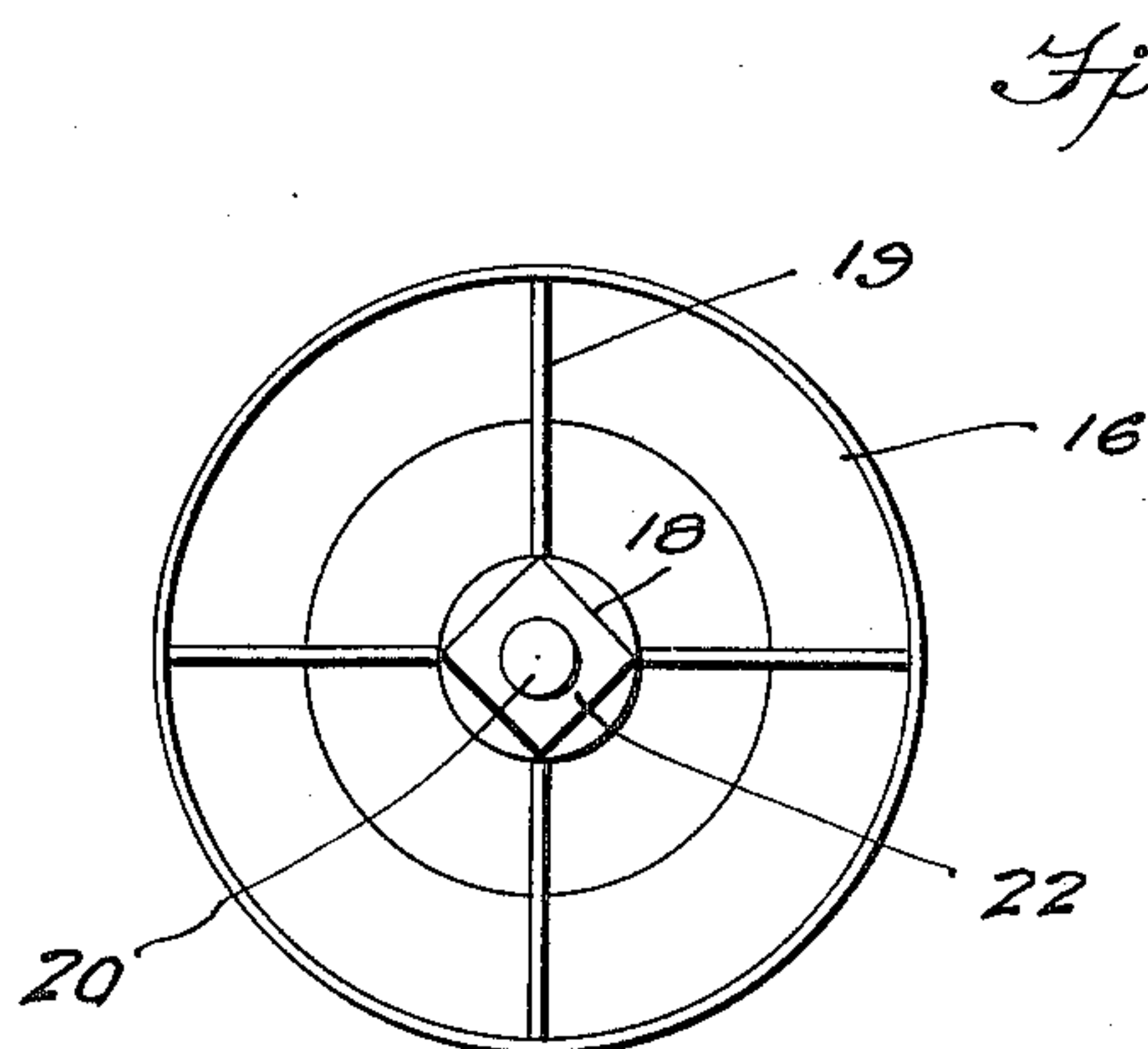
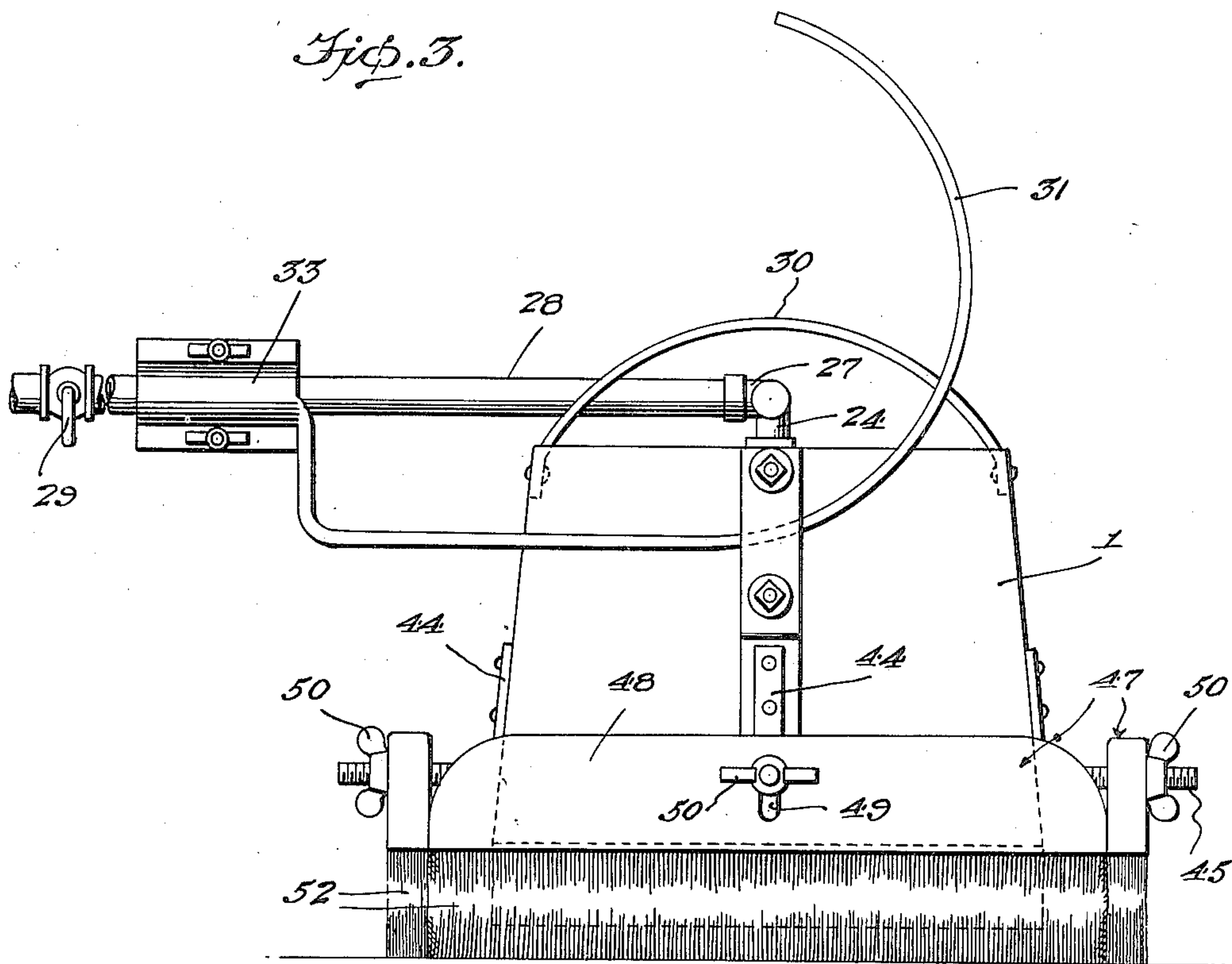
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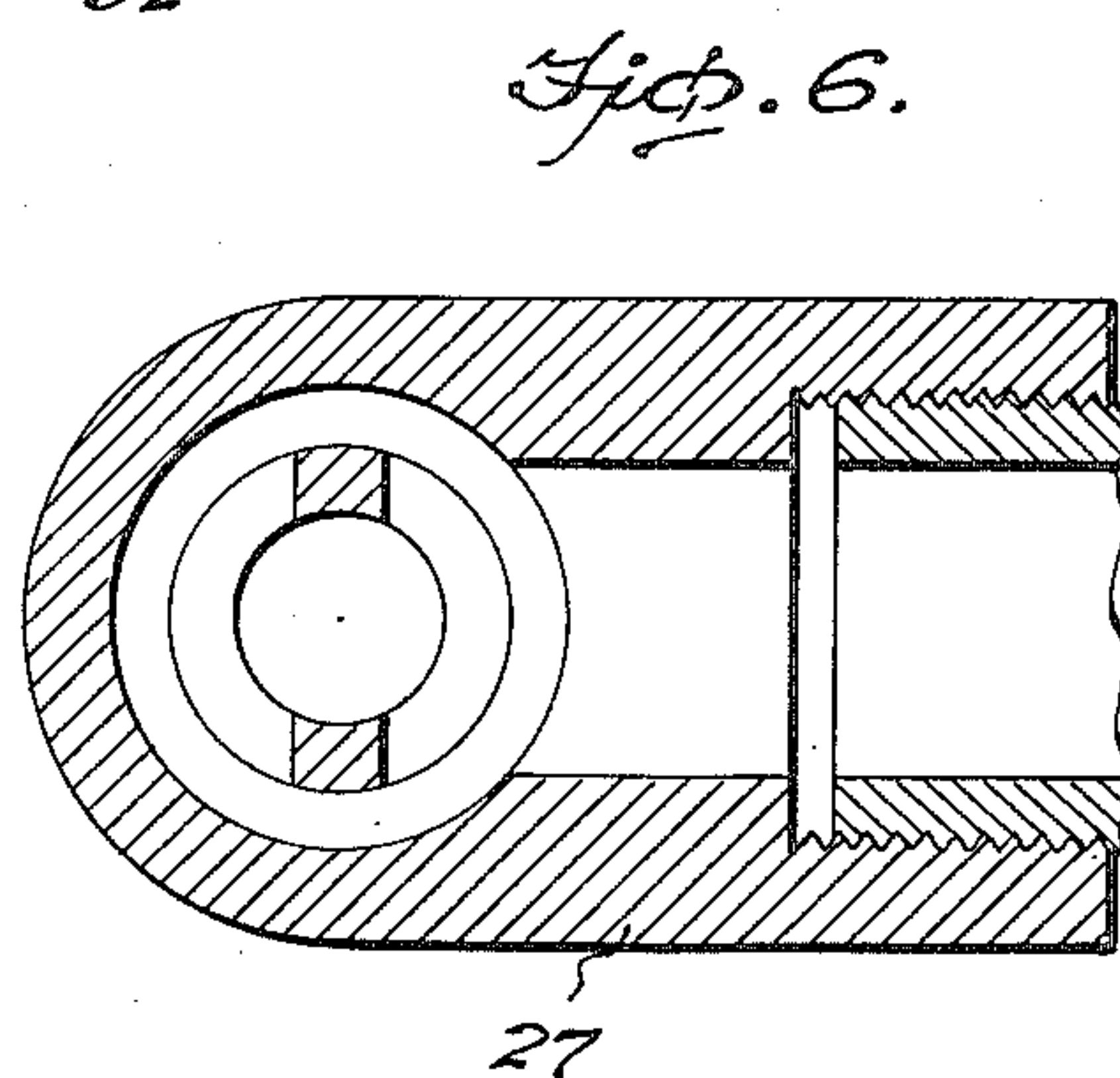
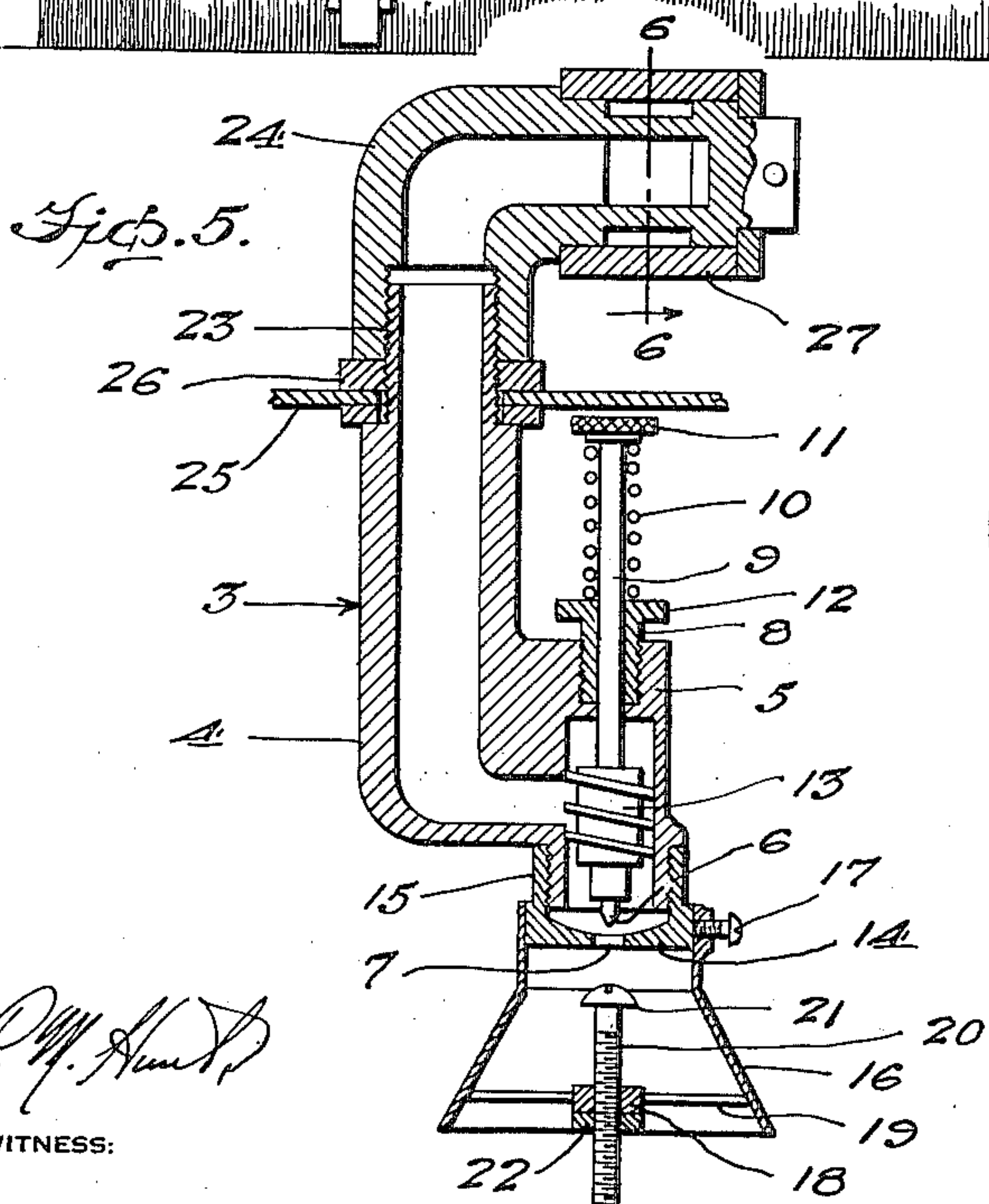
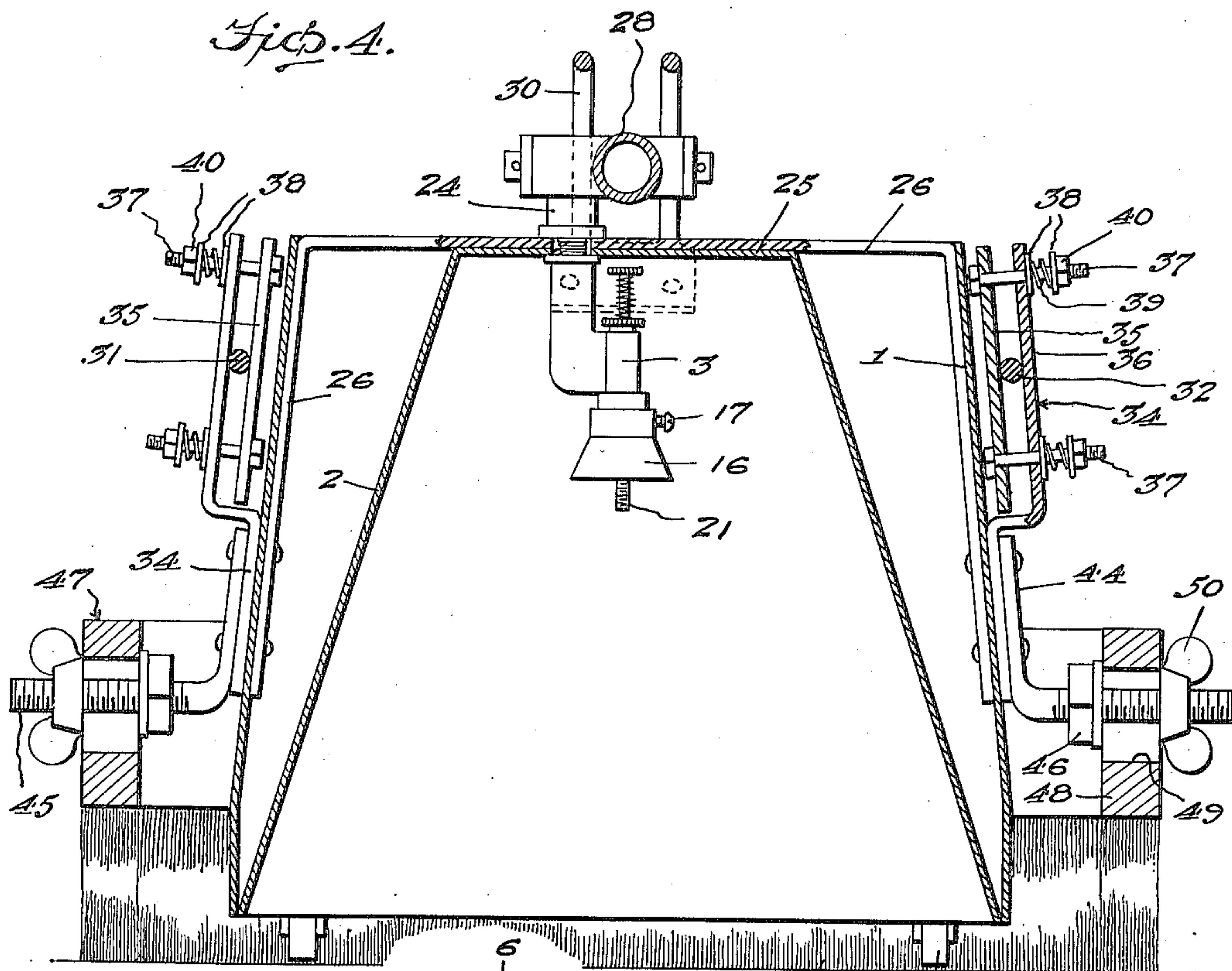
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3 Sheets-Sheet 3



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# UNITED STATES PATENT OFFICE.

JOHN PASCHALL, OF CHICAGO, ILLINOIS.

SPRAYING MACHINE.

Application filed June 14, 1921. Serial No. 477,529.

*To all whom it may concern:*

Be it known that I, JOHN PASCHALL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Spraying Machines, of which the following is a specification.

This invention relates to spraying machines particularly designed for spraying paint, calcimine or analogous material over relatively large flat surfaces and an object of the invention is to provide a practical device of this nature by means of which paint or analogous material may be evenly spread in a minimum amount of time and one which is comparatively convenient of operation and will spread the paint in cracks, crevices or inconvenient places in the surfaces being treated.

A further object of the invention is to provide, in a device as specified a novel nozzle structure by means of which the quantity and density of the spray may be regulated as desired and conditions necessitate.

A further object of this invention is to provide a device as specified which includes a guard to prevent improper scattering of the material being sprayed as well as one which combines in combination with a spraying nozzle, a plurality of brushes arranged to conveniently distribute the material sprayed.

Another object of the invention is to provide a novel construction for connecting the spraying machine to its handle which also serves as a material supply pipe whereby the angle of the machine relative to the handle may be varied during the movement of the machine over a surface being treated.

Other objects of the invention will appear in the following detailed description and in the accompanying drawings wherein:

Fig. 1 is a top plan of the improved spraying machine.

Fig. 2 is a bottom plan of the improved spraying machine.

Fig. 3 is a side elevation of the spraying machine.

Fig. 4 is a vertical section through the spraying machine.

Fig. 5 is a detail section through the improved nozzle used in the spraying machine.

Fig. 6 is a detail section taken on the line 6-6 of Fig. 5.

Fig. 7 is an enlarged end view of the nozzle.

Referring more particularly to the draw-

ing the improved spraying machine comprises a main body 1 which is substantially frusto pyramidal in shape and has a substantial frusto conical guard 2 positioned therein in the vertical center of which is positioned a paint or material spraying nozzle structure 3. The spraying nozzle structure 3 includes a carrying body 4 which has a lateral offset portion 5 at one end in which a needle valve 6 is positioned, the said needle valve being adjustable relative to the outlet opening 7 by means of an adjusting nut 8 through which the stem 9 of the needle valve extends. The adjustment of the nut 8 affects the needle valve and adjusts it through the medium of the spring 10, the tension of the spring against the head 11 being regulated by the adjustment of the nut, and the outward pressure of the spring on the head 11 forces the needle valve 6 away from the seat 7. A spring 10 is coiled about the stem 9 and engages at one end against the head 11 on the stem 9 and at the other end against the head 12 of the adjusting nut 8, the said spring serving to permit manual movement of the needle valve 6 if desired for momentary adjustment of the needle valve without adjustment of the adjusting nut 8. The stem 9 has a spiral fluid guide 13 mounted thereon for guiding the fluid in a spiral or swirling path during its passage to the opening 7 for insuring more efficient spreading of the fluid. The outlet opening 7 is formed centrally within the outer end 14 of a cap 15 which is removably mounted upon the extension 5 on the body 4 of the nozzle structure. A deflector 16 is mounted about the cap 15 being held thereon by means of a set screw 17 and it is substantially frusto conical in shape flaring outwardly to facilitate the spreading of the liquid. A collar 18 is centrally within the deflector 16 near its outer flared end by means of suitable arms 19 and the collar 18 is internally threaded, adjustably receiving therethrough a bolt 20 the rounded head 21 of which aligns with the opening 7 and serves as a spreader to spread the fluid issuing through the opening 7 in a substantially conical sheet for distribution over a surface to be treated, the lateral spreading of which substantially conical sheet of fluid is limited by the deflector 16 and guard 2. By adjustment of the bolt 20 for regulating the distance between its rounded head 21 and the opening 7 the diam-



eter and spread of the liquid may be regulated as desired. A nut 22 is mounted on the bolt 20 for engagement against the collar 18 to lock the bolt in adjusted positions.

- 5 The body 4 of the nozzle structure 3 has a reduced screw threaded sleeve 23 formed thereon which serves to connect the nozzle 3 to a coupling 24 carried outwardly of the top 25 of the guard 2. Suitable transverse
- 10 braces 26 are provided which are attached to the inner surface of the sides of the body 1 and extend across the top of the guard 2 serving to connect the guard to the body 1 and to increase the rigidity of the body 1.
- 15 A second coupling 27 is connected to the coupling 24 for rotary movement about an axis transversely of the axis of the nozzle 3 and the coupling 27 is connected to a suitable supply pipe 28 through which the liquid
- 20 or fluid to be distributed by the spraying machine passes. A suitable valve structure 29 of any approved construction is mounted in the combined handle and supply pipe 28 to permit the controlling of the passage of
- 25 fluid, under pressure, to the spraying machine. Arcuate guide rods 30 are carried by the body 1 and are positioned one upon each side of the combined handle and supply pipe to prevent lateral vibratory movement there-
- 30 of during operation of the device. Guides 31 and 32, which also serve as braces, are connected to the combined handle and supply pipe 28 by means of the clamping structures 33 formed upon their ends and they extend between plates 34 and 35 a pair of
- 35 which is positioned at opposite sides of the body 1. The plates 34 are rigidly attached to the body 1 and have offset portions 36 which lie substantially parallel with the
- 40 movable clamping plates 35. Bolts 37 extend slidably through the clamping plates 35 and portions 36 of the clamping plates 34, the heads of the bolts engaging the inner surface of the clamping plates 35. Spaced
- 45 washers 38 are mounted upon each of the bolts 37 outwardly of the portions 36 and expansion spiral springs 39 are coiled about the bolts between said washers, the springs being tensioned by means of the nuts 40.
- 50 The springs 39 urge the plates 35 towards the parallel portions 36 for clamping the guides 31 and 32 between their respective plates 35 and portions 36 of the plates 34. The yieldability of the plates 35 is provided
- 55 to permit varying of the angular relation between the combined handle and supply pipe 28 and the body 1 during the movement of the machine over a wall or other surface being treated.

- 60 Bracket arms 44 are attached to the outer surface of the sides of the body 1 and they have outwardly extending transverse threaded portions 45 formed thereon upon which
- 65 nuts 46 are mounted, against which nuts the backs of liquid spreading brushes 47 en-

gage. The backs 48 of the liquid spreading brushes 47 are provided with slots 49 through which the threaded transverse end 45 extend. Inner nuts 50 are mounted on the transverse threaded ends 45 for clamping 70 the brushes against the nuts 46. By adjustment of the positions of the nuts 46 on the transverse threaded ends 45 the distance between the outer surface of the body 1 and the brushes 47 may be regulated as desired. 75 The bristles 52 of the brushes project beyond the lower edge of the body 1 for spreading liquid over the surface being treated.

Spreading plates 55 are mounted in the corners of the body 1 outwardly of the guard 80 2 and near the lower end of the body serving as supports for ball bearing casters or rollers 56 which are adapted to engage the surface being treated and reduce the friction 85 occasioned by the travel of the spraying machine thereover.

It is, of course, to be understood that the invention may be constructed in various other manners and the parts associated in different relations and, therefore, I do not 90 desire to be limited in any manner except as set forth in the claims hereunto appended.

Having thus described my invention what I claim is:

1. In a spraying machine, a nozzle in- 95 cluding an adjustable needle valve, a deflector carried by the nozzle, means adjustably carried by said deflector for cooperation with the nozzle to regulate the spread of the spray, a guard about said nozzle, a 100 carrying body, and rollers carried by said carrying body.

2. In a spraying machine, a nozzle in- 105 cluding an adjustable needle valve, a deflector carried by the nozzle, means adjustably carried by said deflector for co-operation with the nozzle to regulate the spread of the spray, a guard about said nozzle, a carrying body, rollers carried by said carrying body, and a plurality of brushes detachably and 110 adjustably carried by said body for assisting in spreading the material sprayed.

3. In a spraying machine, a nozzle in- 115 cluding an adjustable needle valve, a deflector carried by the nozzle, means adjustably carried by said deflector for cooperation with the nozzle to regulate the spread of the spray, a guard about said nozzle, a carrying body, rollers carried by said carrying body, a combined supply pipe and 120 handle, and a pivotal coupling connecting said combined supply pipe and handle to said nozzle.

4. In a spraying machine, a nozzle in- 125 cluding an adjustable needle valve, a deflector carried by the nozzle, means adjustably carried by said deflector for cooperation with the nozzle to regulate the spread of the spray, a guard about said nozzle, a 130 carrying body, rollers carried by said car-



rying body, a combined supply pipe and handle, a pivotal coupling connecting said combined supply pipe and handle to said nozzle, guides carried by said handle, and means carried by said body and yieldably engaging said guides to connect the guides to the body for stiffening the pivotal connection between the combined handle and supply pipe and the body.

5 5. In a spraying machine, a nozzle including an adjustable needle valve, a deflector carried by the nozzle, means adjustably carried by said deflector for cooperation with the nozzle to regulate the spread of the spray, a guard about said nozzle, a carrying body, rollers carried by said carrying body, a plurality of brushes detachably and adjustably carried by said body for assisting in spreading the material sprayed, a combined supply pipe and handle, and a pivotal coupling connecting said combined supply pipe and handle to said nozzle.

25 6. In a spraying machine, a nozzle including an adjustable needle valve, a deflector carried by the nozzle, means adjustably carried by said deflector for cooperation with the nozzle to regulate the spread of the spray, a guard about said nozzle, a carrying body, rollers carried by said carrying body, a plurality of brushes detachably and adjustably carried by said body for assisting in spreading the material sprayed, guides carried by said handle, and means carried by said body and yieldably engaging said guides to connect the guides to the body for stiffening the pivotal connection between the combined handle and supply pipe and body.

40 7. In a spraying machine, a body, a guard therein, a spraying nozzle carried by said guard, brackets carried by the body,

and material spreading brushes adjustably carried by said brackets.

8. In a spraying machine, a carrying body, a nozzle carried thereby, a combined supply pipe and handle connected to said body, a pivoted coupling connecting said combined supply pipe and handle to said nozzle, and material spreading brushes adjustably carried by said carrying body for spreading material discharged by said nozzle.

9. In a spraying machine, a carrying body, a nozzle carried thereby, a guard about said nozzle, and a plurality of material spreading brushes adjustably carried by said carrying body for spreading material discharged by said nozzle.

10. In a spraying machine, a carrying body, a nozzle carried thereby, adjustable means for regulating the spray from said nozzle, brackets carried by said body, and material spreading brushes adjustably carried by said brackets for spreading material discharged by said nozzle.

11. In a spraying machine, a body, a nozzle carried thereby, a combined handle and supply pipe connected to said body, a pivoted coupling connecting said supply pipe and handle to said nozzle, brackets on said body, and brushes adjustably carried by said brackets for spreading material discharged by said nozzle.

12. In a spraying machine, a carrying body, a nozzle carried thereby, a guard about said nozzle, and a plurality of material spreading brushes carried by said carrying body for spreading material discharged by said nozzle.

In testimony whereof I affix my signature.

JOHN PASCHALL.