

No. 831,978.

PATENTED SEPT. 25, 1906.

W. B. NORTON.
MACHINE FOR DROPPING POWDERED FUSIBLE MATERIAL UPON HOT GLASS
OR METAL.

APPLICATION FILED DEC. 1, 1905.

3 SHEETS—SHEET 1.

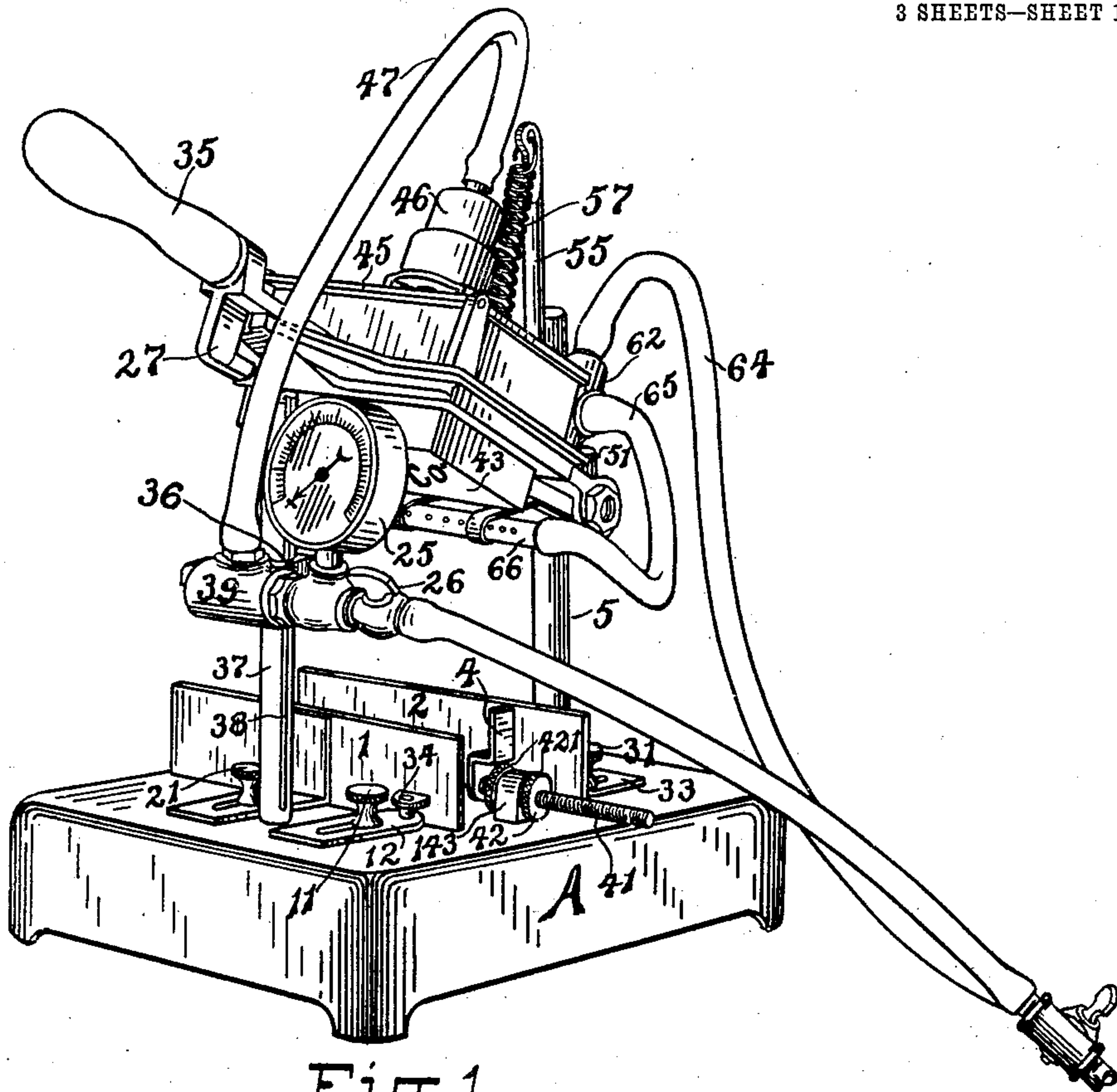


Fig. 1.

WITNESSES

C. C. Jennings
E. E. Day

INVENTOR

William B. Norton

By

Parker & Burton Attorneys.

No. 831,978.

PATENTED SEPT. 25, 1906.

W. B. NORTON.

MACHINE FOR DROPPING POWDERED FUSIBLE MATERIAL UPON HOT GLASS
OR METAL.

APPLICATION FILED DEC. 1, 1905.

3 SHEETS—SHEET 2.

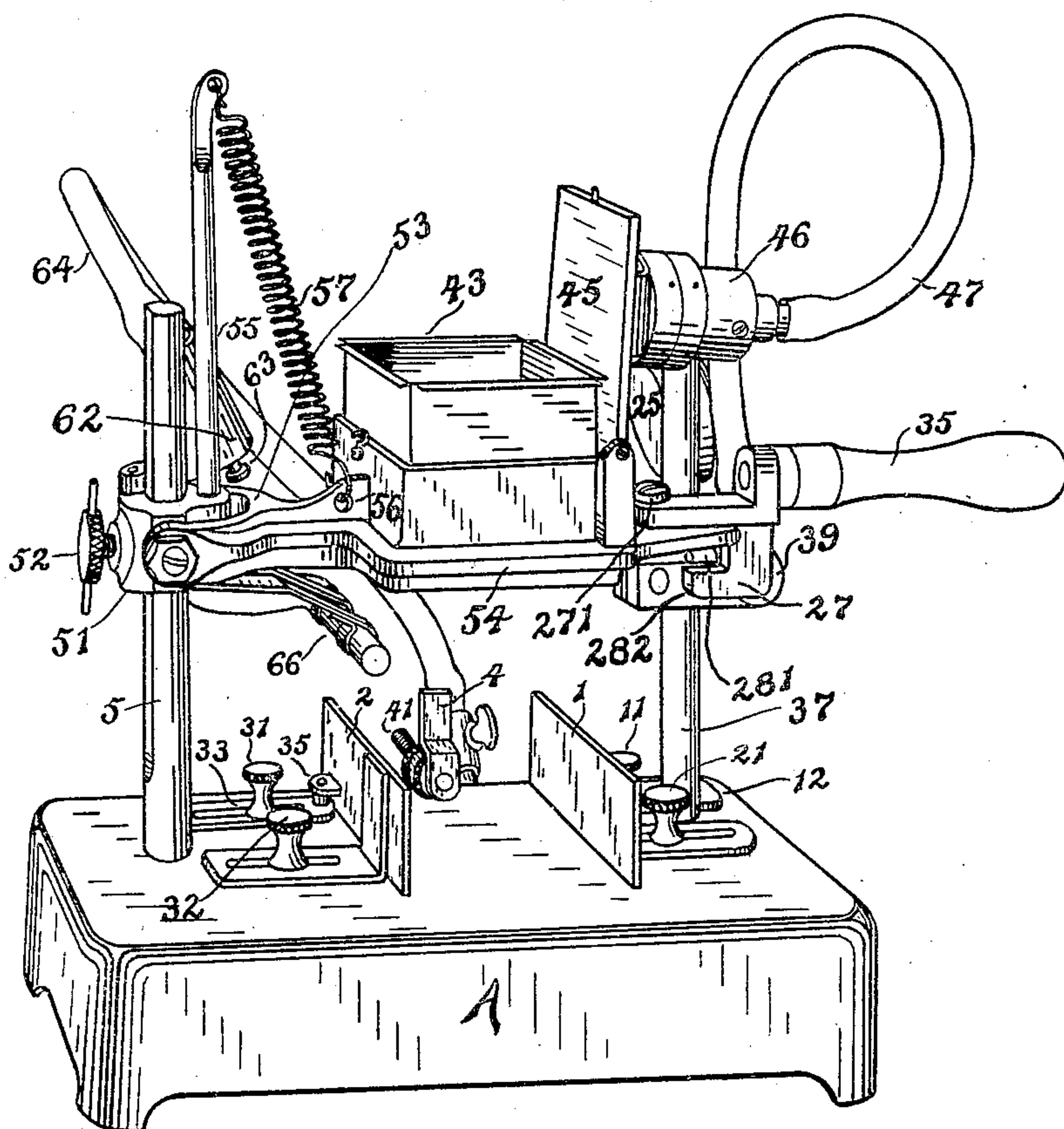


Fig. 2.

WITNESSES.

W. C. Jennings
G. E. Day

INVENTOR

William B. Norton

By

Parker & Burton Attorneys.

No. 831,978.

PATENTED SEPT. 25, 1906.

W. B. NORTON.
MACHINE FOR DROPPING POWDERED FUSIBLE MATERIAL UPON HOT GLASS
OR METAL.

APPLICATION FILED DEC. 1, 1905.

3 SHEETS—SHEET 3.

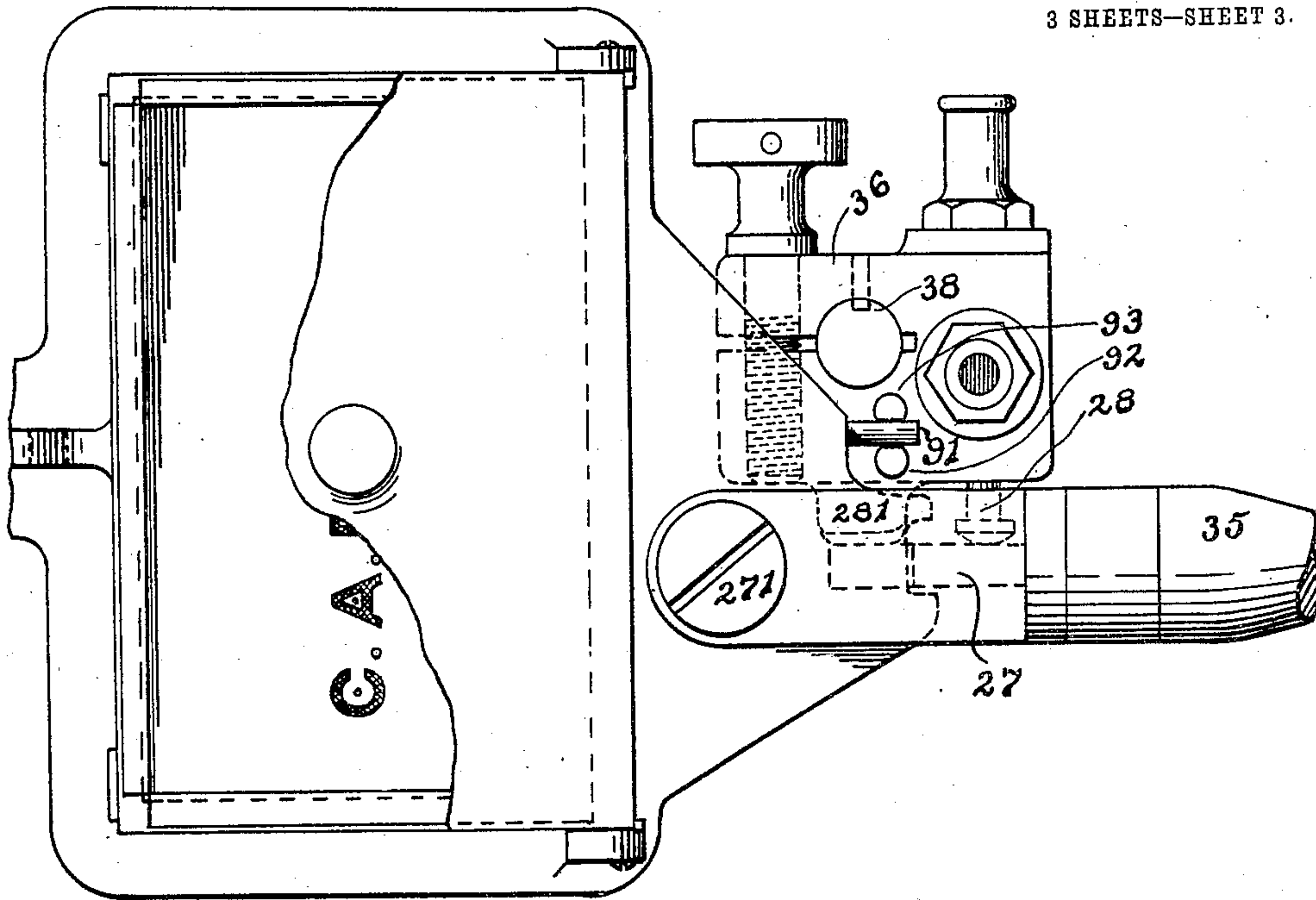


Fig. 3.

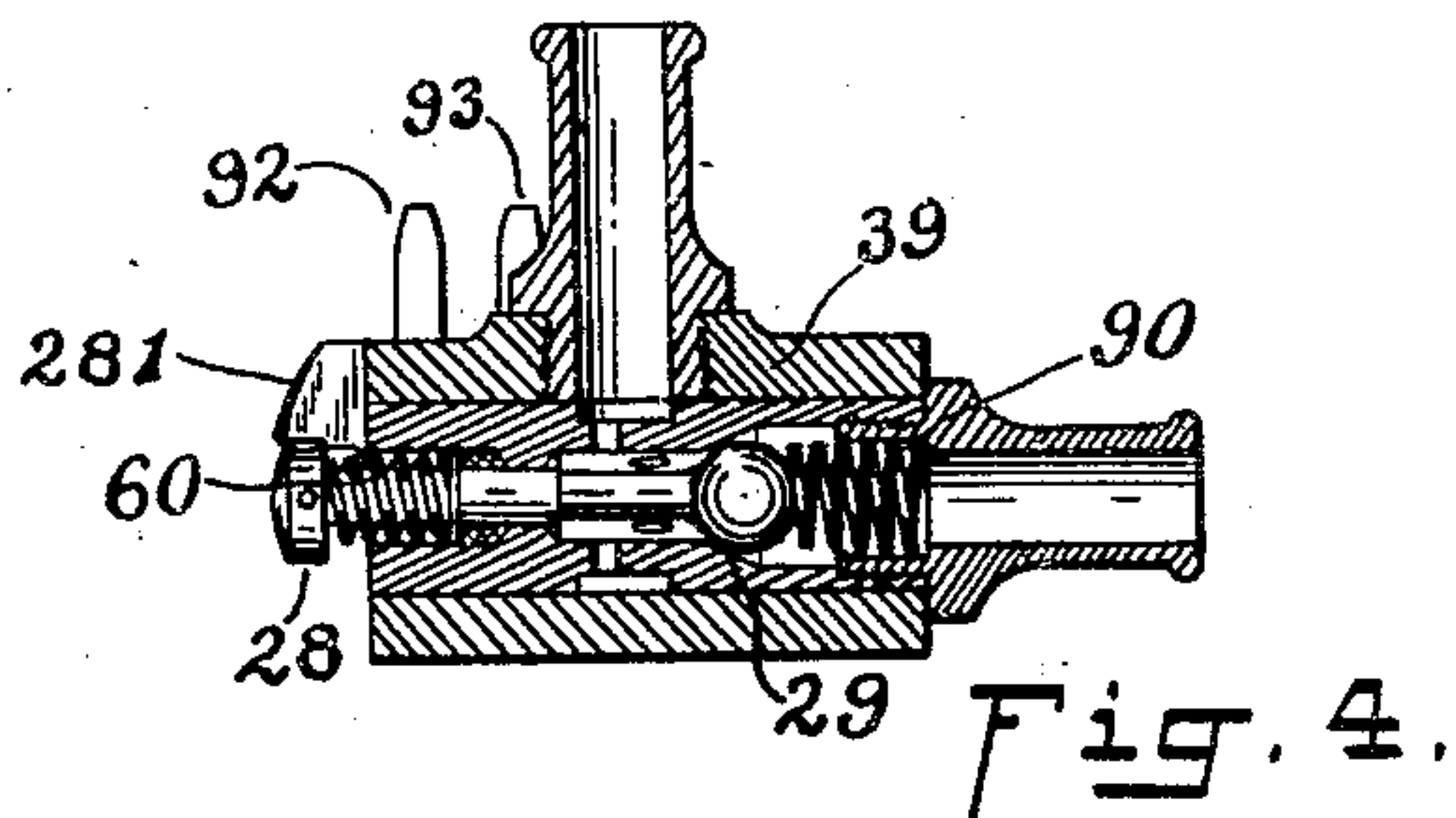


Fig. 4.

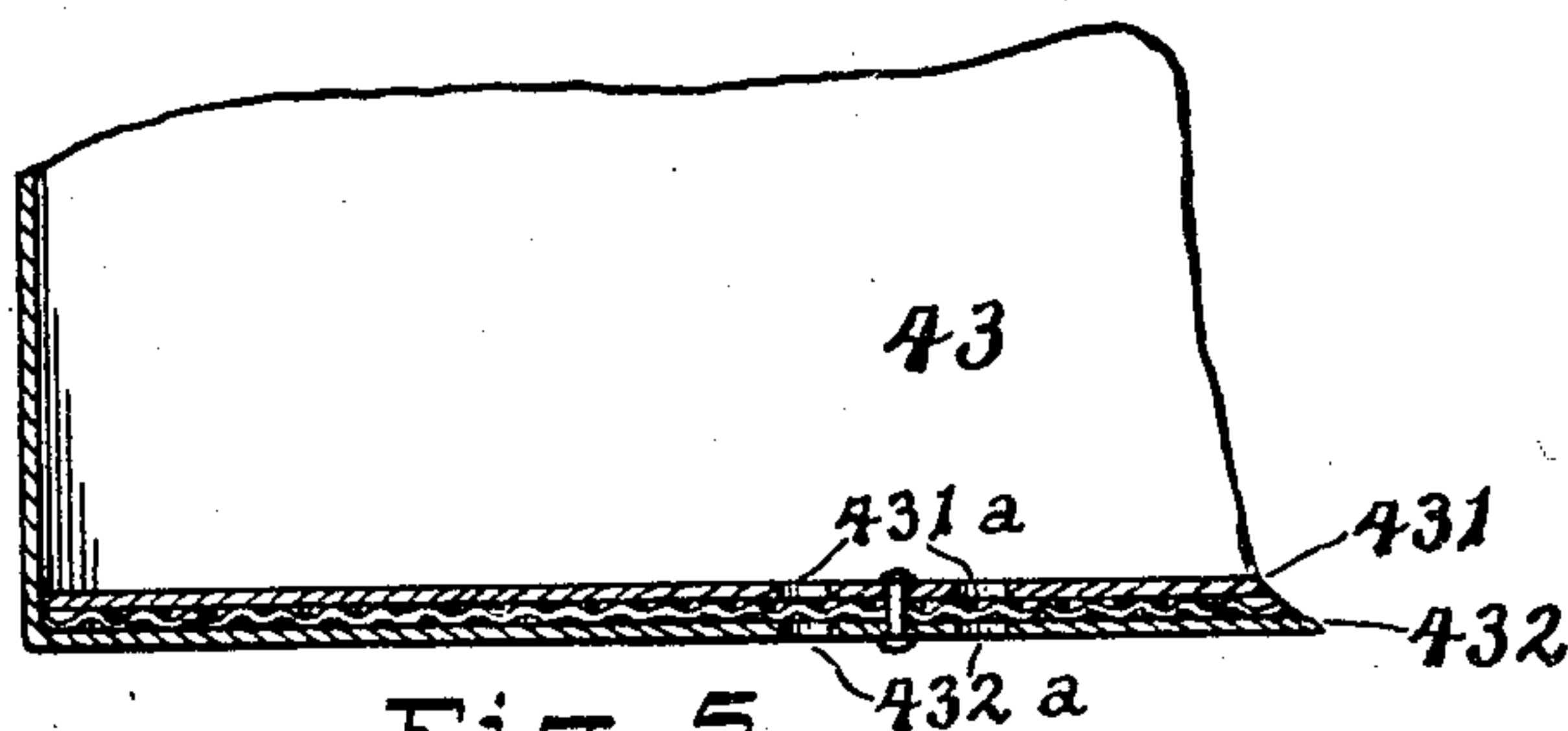


Fig. 5.

WITNESSES

C. Jennings
C. E. Day

INVENTOR

William B. Norton

By

Parker & Burton Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM B. NORTON, OF DETROIT, MICHIGAN.

MACHINE FOR DROPPING POWDERED FUSIBLE MATERIAL UPON HOT GLASS OR METAL.

No. 831,978.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed December 1, 1905. Serial No. 289,897.

To all whom it may concern:

Be it known that I, WILLIAM B. NORTON, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Machines for Dropping Powdered Fusible Material upon Hot Glass or Metal; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to a machine for dropping powdered fusible material upon hot glass or metal for the purpose of ornamenting the same.

The glass or metal object in a hot condition is presented at the proper place in the machine and powdered fusible glass that fuses at a temperature so low that it will adhere to and fuse onto the hot article is used in the form of a powder and is shaken through a stencil or series of stencils arranged to allow the powder to fall directly to those places where it is to adhere. The stencils are held in such close relation to the heated article that the falling powder retains the general outline of the stencil through which it is delivered and falls upon and fuses onto the article, retaining the ornamental configuration of the stencil.

The invention is used mainly to produce lettering on the heated article; but it may be used for any ornamental character or figure.

In the drawings, Figure 1 is a perspective of the machine. Fig. 2 is a perspective showing the side reverse to that shown in Fig. 1. Fig. 3 is a plan with some parts broken away. Fig. 4 shows a detail of an air-valve. Fig. 5 is a cross-section through the stencil-sieve.

A indicates the base of the machine, provided with adjustable plates 1, 2, and 4, all of which are held to the base adjustably to form a cage or guide in which the article to be treated will be brought accurately to place under the stencil. These are held to the base by set-screws 11, 21, 31, and 32. The foot-plates 12 and 33 are pivotally secured to the plates 1 and 2 by lugs 34 and 35 on said plates 1 and 2, so that the plates 1 and 2 may be adjusted with an angular opening between them if that position of adjustment be desired because of the shape of the article to be treated. The plate 4 is an

end abutment whose position is regulated by a screw 41, that is fixed to the plate and is axially moved by nuts 42 and 421. The nuts are held from axial movement by a lug 43. At each end of the machine there is a post. The post 5, which rises at the rear of the machine, has vertically movable on it a hinge-block 51, held by set-screw 52 and having hinged to it arms 53 of a fork, which carries a frame 34. The hinge-block 51 supports a post 55. A tension-spring 57 connects the top of the post 55 to an ear 56 on the frame and serves to normally lift the handle end of the frame 54. The frame 54 is a rectangular frame, open at the bottom and provided with a cover 45. In this rectangular frame is inserted a removable box 43, which is provided with a stencil-bottom. At about the center of the cover 45 is attached a pneumatic hammer or rapper 46, actuated by air that is introduced through air-pipe 47. The hammer serves to rap the frame and box 43 and the stencil and to shake powder from the box 43 through the stencil. The shaking takes place only when the handle 35 has been pressed down against a stop-bracket 36, that is supported by a post 37, which rises from the frame A at the front thereof. The post 5, as shown, is slabbed off or prismoidal to prevent the frame from swinging in a horizontal plane with respect thereto, and the post 37 is either slabbed off or, as is shown, provided with a groove 38, in which engages an inward-extending projection from the bracket 36 in order that the bracket and the parts intimately connected with it may retain their proper relation with respect to the frame. The bracket 36 includes a valve-casing 39, to which is connected an air-pipe 47, which leads to the hammer 46. Connected to the valve-casing is a gage 25 and a stop-cock valve 26.

In the valve-casing 39 is contained a valve 29, that is actuated by the operator through the instrumentality of the handle 35, which for the purpose of producing the desired actuation is pivoted on a vertical pin 271 and can swing to the right and must be swung to the right by the operator when the handle 35 is depressed and brought to its rest on the bracket 36. In making this swing to the right a hook 27 on the handle engages the head of a valve-stem 28, and the air-controlling valve 29 is operated to open the orifice through which the air passes by swinging the handle 35 to the right and pushing the valve-

stem 28 into the casing against the tension of springs 60 and 90. Thus the operator by a continuous movement of one hand swings the screen to place and opens the air-valve which
 5 then begins to actuate the pneumatic hammer 46. A lock-pin or steady-pin 91 extends to the front and engages between two pins 92 93, that project upward from the bracket 36. The handle remains on the rest a sufficient
 10 length of time. Then the operator lifts or releases the handle, and after moving the handle to the left the handle and frame are lifted by spring 57. The air-valve 29 automatically closes by following the movement of the han-
 15 dle to the left.

At the rear of the machine, supported by the bracket 51, is a valve-casing 62, with a valve that is actuated by the arm 53, which engages against the projecting head 63 of the
 20 valve and opens the orifice of the air-passage from air-pipe 64. The air-pipe 65, which latter terminates with a nozzle 66, lies to the rear of and slightly below the frame. The nozzle 66 is provided with a row of jet-holes
 25 that produce blasts of air across the bottom of the stencil-box 43, which keep the stencil cool, preventing the fusing of powder in the stencil.

The stencil is of fine wire between two
 30 plates 431 and 432, which plates form a bottom to the box 43, that is impervious except where openings are cut through the plates. There is an opening, as 432^a, in the bottom plate 432 and an opening, as 431^a, in the top
 35 plate 431, both of which register and form an opening to the entire box-bottom filled with fine screen-wire.

On the handle side of the machine and between the main part of the frame and the
 40 valve-stem 28 is a guard 281, that is located higher than the stem 28 and projects to or slightly beyond the end of the stem 28 when it is in the position shown in Fig. 4. The handle 35 is provided with a hook 27, that en-
 45 gages against the stem 28, and with a projection extending from the hook that engages under the projection 281, and before reaching the position of contact between the hook 27 and the stem the hook projection 282 en-
 50 gages against the overhanging projection 281, which thus guards the parts from accidental engagement before the entire frame which carries the box is completely down on its seat. After the box has reached this position the
 55 projection 282 engages under the overhanging projection 281 and holds the parts locked in position during all the time that the air-motor is in operation.

The swing of the handle on its pivot 271,
 60 which takes place when the handle is clearing the projection 281 and again when it is manually forced into engagement with the stem 28, occurs at a time when the steady-pin 91 is in engagement between the two pins 92 and
 65 93, and this swing of the handle is without

actuating influence on the box of powdered material.

In using this machine the several holding and steadying parts are properly adjusted to correspond with the article upon which the
 70 ornament is to be fused. The article in a hot condition is placed in the machine between the guides 1, 2, and 4 on the form or tool for handling, where it is held by the workman,
 75 who grasps the handling implement with one hand to hold the article in position and grasps with his other hand the handle 35 and swings the stencil-box to place. In this operation the workman opens the air-valve and
 80 admits air to the pneumatic hammer, which raps the receptacle and shakes out therefrom a quantity of powdered material that drops upon the hot metal and is fused thereon. If
 85 the hot metal be glass, the ornamental material is fused into the body of the glass to a slight extent; but for the most part it lies on the surface in a raised figure, conforming to the opening through the stencil-plate.

What I claim is—

1. A machine for ornamenting metal, consisting of a steadying-frame for the article to be ornamented, a receptacle for the ornamenting material pivotally supported there-
 90 by, a stencil-plate forming the bottom closure for the receptacle, and means adapted
 95 to be actuated by the engagement thereagainst of said receptacle whereby the same is caused to vibrate, substantially as described.

2. In a machine of the class described, in combination with an adjustable steadying
 100 device comprising a base portion and a framework rising therefrom, a receptacle provided with a stencil-bottom pivotally supported by said framework, and means adapted to be set
 105 in motion by engagement thereagainst of a projecting portion of said receptacle where-
 by vibrations of negligible displacing degree may be imparted to said receptacle, substan-
 tially as described.

3. In a machine for ornamenting hot glass
 110 or metal, in combination with a base portion provided with adjustable stops for holding the object to be ornamented in place, a frame-
 work rising therefrom, a receptacle for the ornamenting material pivotally supported
 115 by said framework, a stencil-plate forming the bottom portion of said receptacle, and a valve-controlled pneumatic terminal connected to said receptacle for imparting vi-
 120 bration thereto, adapted to be put in operation by contact thereagainst of a portion of said receptacle, substantially as described.

4. A machine for ornamenting heated ob-
 125 jects, consisting of a steadying-frame, storage and distributing means for the ornament-
 ing material adjustably supported there-
 above, and means controlled by pressure of the same thereagainst whereby vibrations of negligible displacing degree may be im-
 130 parted thereto, substantially as described.

5. A machine for ornamenting glass or metal, having in combination a containing-frame for the article to be ornamented, a receptacle provided with a stencil-bottom to contain the ornamenting material, a pneumatic hammer connected therewith, means for supplying thereto motive fluid under pressure, and a valve controlling the same, adapted to be opened by engagement thereagainst of said receptacle, substantially as described.

6. A machine for ornamenting hot metal, having in combination a base portion adapted to hold the heated article, a framework pivotally supported thereby and adapted to be moved vertically about said pivot, means whereby said framework is normally held from operative position, a receptacle for the ornamenting material having a stencil-plate for its bottom portion, and means adapted to be set in operation by pressure of said framework thereagainst whereby said framework is percussively shaken.

7. A machine for ornamenting hot metal comprising a base portion for holding the article, a receptacle for the ornamenting material, a stencil-closure forming the bottom of said receptacle, a framework pivotally secured to said base portion and adapted to

sustain said receptacle in a predetermined position with respect to the article to be ornamented, means connected with said receptacle whereby it may be vibratively actuated, and means adapted to be contacted by said framework whereby the duration and degree of the vibrations may be regulated, substantially as described.

8. In a machine for ornamenting metal, in combination with a receptacle with a stencil-plate forming the bottom portion thereof, a frame to which said receptacle is pivoted, a base portion carrying said frame and adapted to hold the article to be ornamented in position with respect to said frame and receptacle, means adapted to be actuated by engagement thereagainst of a projecting part of said receptacle whereby the same is vibrated, and means controlled by engagement thereagainst of said receptacle for directing a flow of air upon the stencil-plate when such vibration has ceased, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

WILLIAM B. NORTON.

Witnesses:

WILLIAM M. SWAN,
ELLIOTT J. STODDARD.