

No. 797,952.

PATENTED AUG. 22, 1905.

T. GRAHAM.
CAN SOLDERING MACHINE.
APPLICATION FILED MAY 8, 1905.

3 SHEETS—SHEET 1.

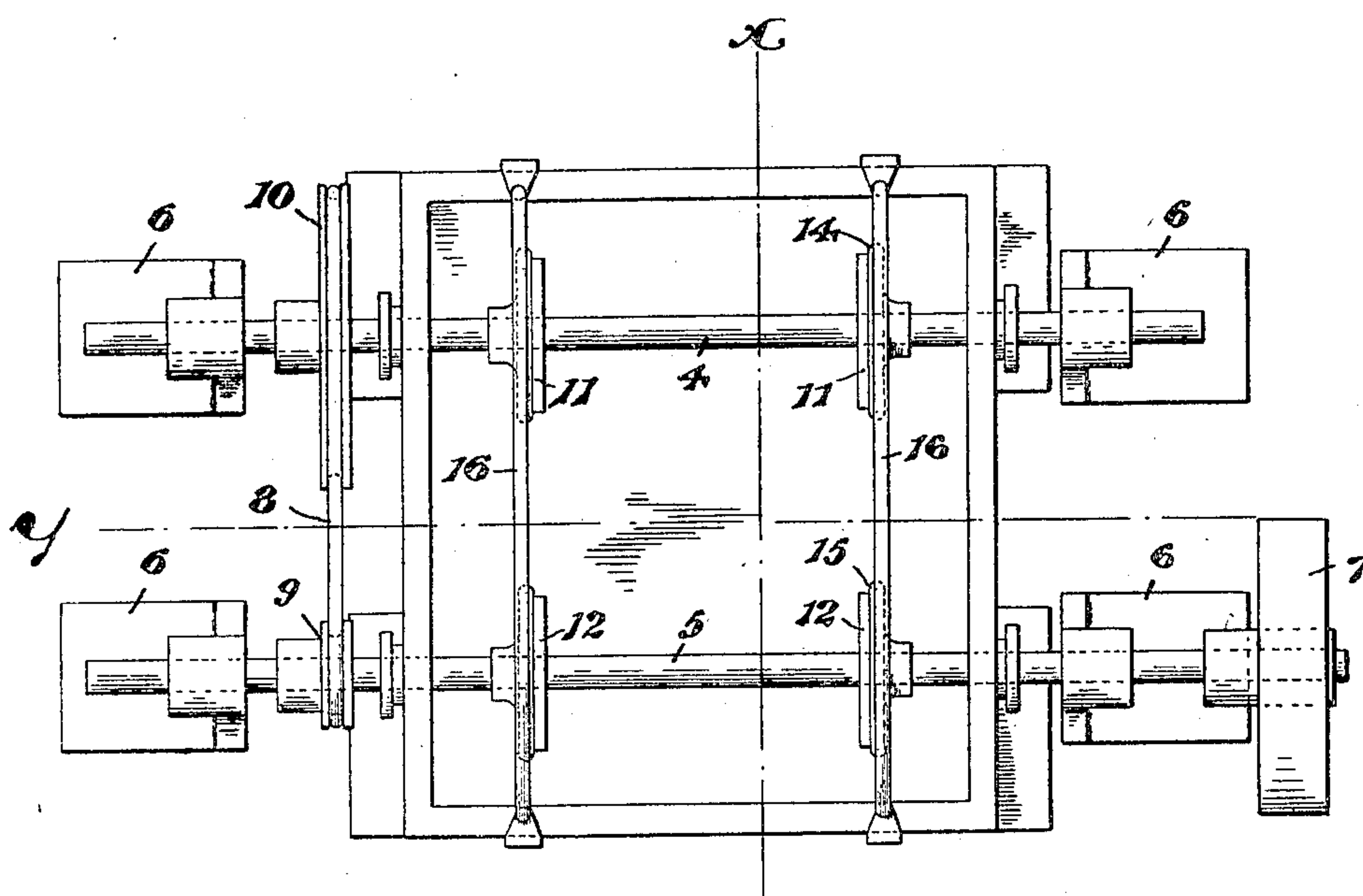


Fig. 1.

WITNESSES.

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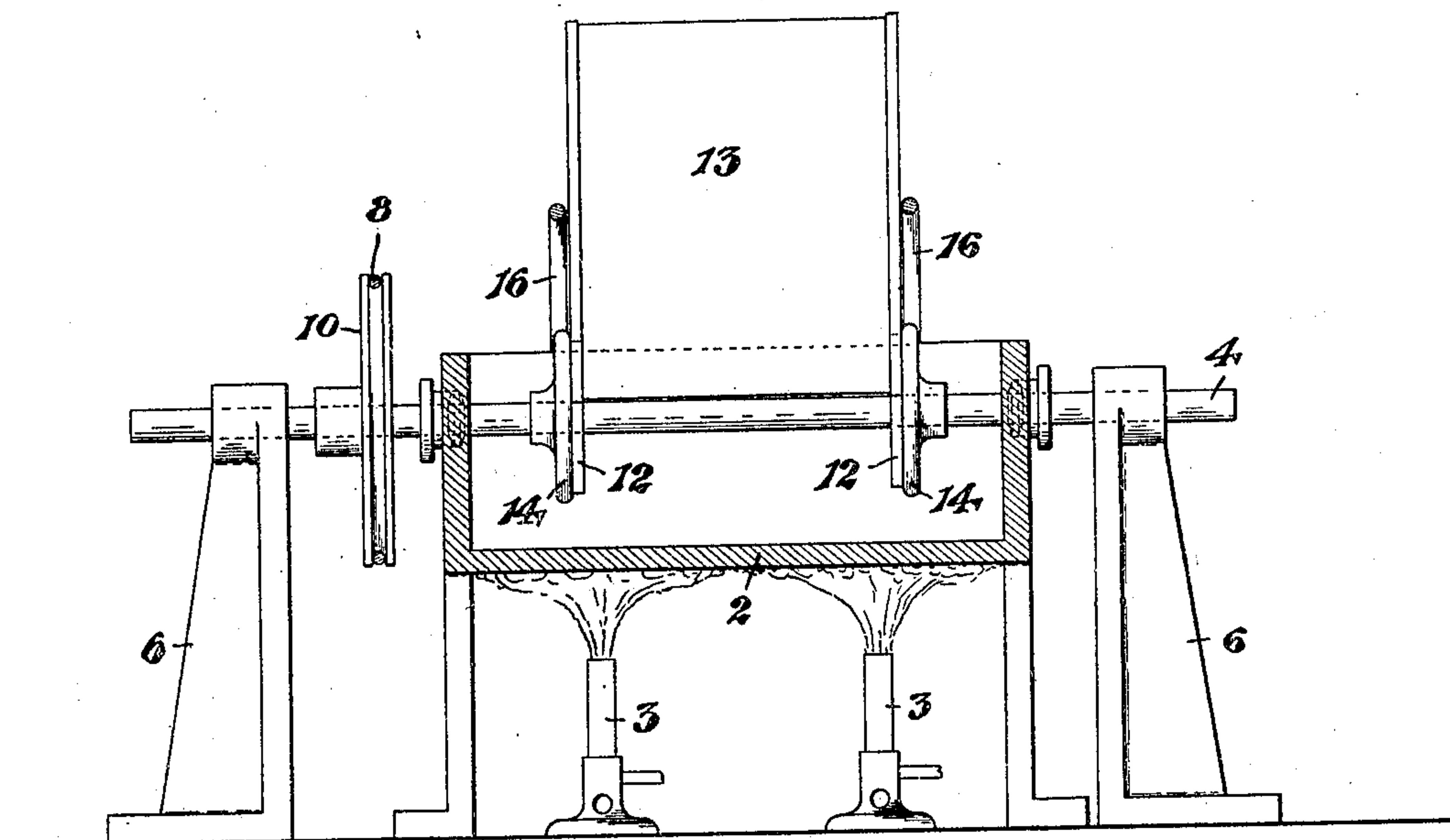
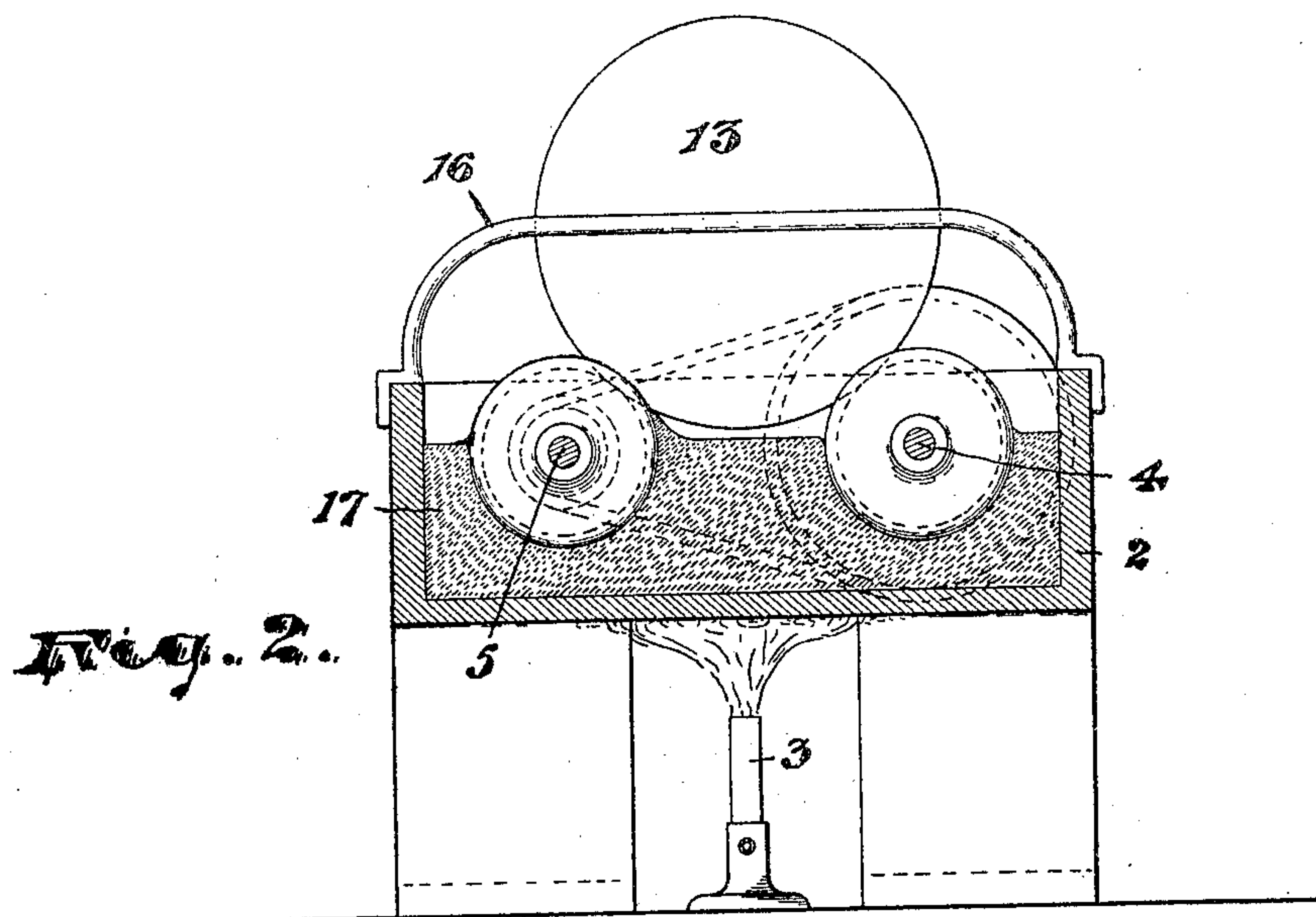


Fig. 3.

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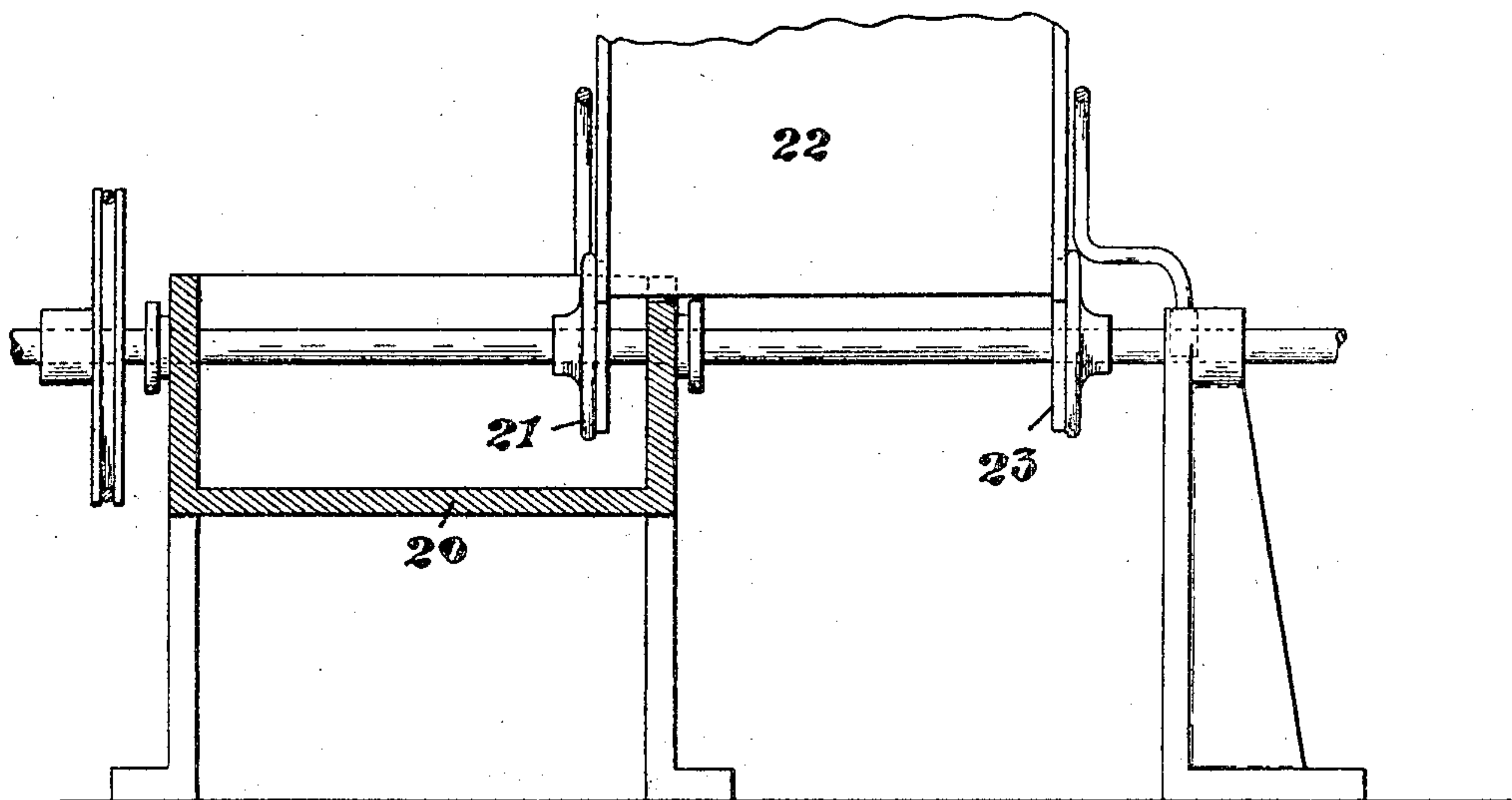


Fig. 4.

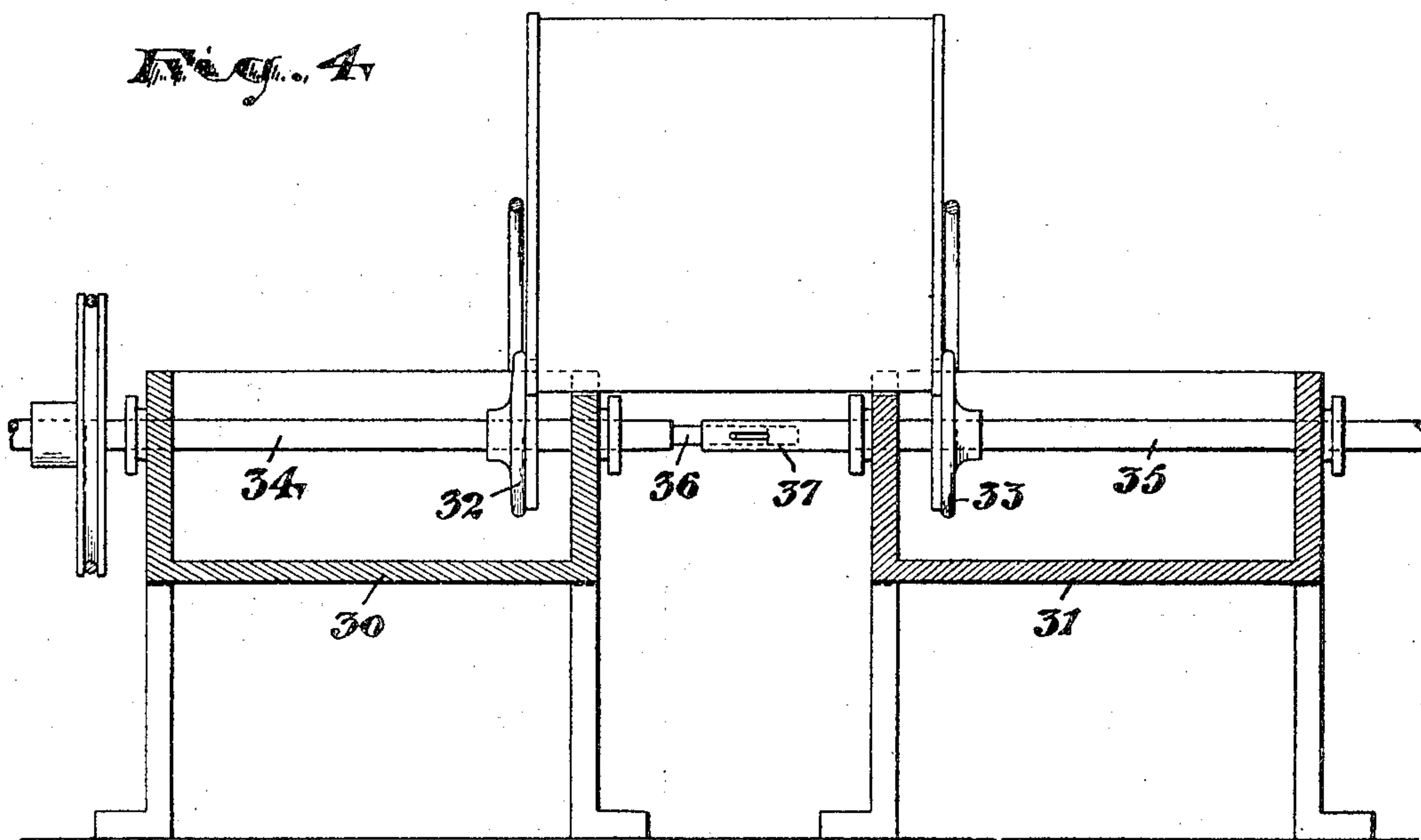


Fig. 5.

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UNITED STATES PATENT OFFICE.

THOMAS GRAHAM, OF NEWARK, NEW JERSEY.

CAN-SOLDERING MACHINE.

No. 797,952.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed May 8, 1905. Serial No. 259,303.

To all whom it may concern:

Be it known that I, THOMAS GRAHAM, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Can-Soldering Machines; and I do hereby 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 appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to that class of soldering-machines which are particularly designed for soldering the ends of tin cans in place, and more especially for small jobs or numbers of such cans where it is not feasible to maintain an apparatus for the process known as "floating" or for special cans which a "floater" cannot take care of.

The objects of the present improvements are to provide such a soldering-machine in which the tin can will be supported upon wheels adapted to be rotated, to rotate the supporting-wheels at one side of the can slowly to give motion to the can and those at the other side of the can more rapidly, so as to be turning at a different rate of speed from the can and frictionally engaging the same, to so regulate the said rates of speed of the supporting-wheels that only the more rapidly turning ones shall be depended upon to supply solder to the can, to thus supply the solder to the can with an action similar to that of a hand soldering-iron because of the rubbing relation of the said wheels to the can, to secure a simple and efficient construction, and to obtain other advantages and results, some of which may be hereinafter referred to in connection with the description of the working parts.

The invention consists in the improved soldering-machine and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Figure 1 is a plan view of my improved machine. Fig. 2 is a cross-section taken upon line *x*, Fig. 1. Fig. 3 is a longitudinal section upon line *y*, Fig. 1. Fig. 4 is a longitudinal section similar to that shown in Fig. 3, illus-

trating a modified construction in which only one end of the can is to be soldered; and Fig. 5 shows a still further modification in which the machine is adjustable to different sizes or lengths of cans.

In said drawings, 2 indicates a tank of any suitable construction adapted to contain solder, said solder being maintained in liquid condition by means of burners 3 3 or any other suitable source of heat arranged beneath said tank. At the upper part of two of the opposite side walls of said tank 2 are journaled transverse shafts 4 and 5, respectively, which shafts are substantially parallel. The ends of said shafts project beyond the outside of the tank and are journaled in brackets 6 of any suitable construction adapted to project up from the floor or bench. One of said shafts, as 5, is provided with a driving-pulley 7, and a belt 8, extending over pulleys 9 10 on the two shafts, enables movement to be transmitted to both of them. Obviously any other suitable and well-known driving means could be employed, if desired.

Upon each of the shafts 4 and 5 are mounted fixed wheels 11 and 12, respectively, lying within the tank 2, and upon the peripheries of which wheels the can 13 to be soldered is adapted to rest at its end edges where the soldering is to be done. Peripheral flanges 14 or 15 upon the said wheels engage the ends of the can to prevent its longitudinal displacement, and, furthermore, guide rods or rails 16 are adapted to extend from one side of the tank to the other adjacent to the opposite ends of the can to further hold it in position upon the wheels 11 12.

It will be understood that the wheels 11 12 are more or less submerged in the liquid solder, which is indicated by reference-numeral 17 in Fig. 2, and therefore as the machine is operated and the sets of wheels at the opposite sides of the can are driven at different speeds, as above described, the wheels 11, which turn more slowly, impart a rotary motion to the can and turn too slowly to sufficiently supply solder to said can. The other wheels 12, however, rotate with sufficient speed to centrifugally supply solder to the seams of the can, and at the same time turn sufficiently faster than the can to rub upon the same, thus closely simulating the action of a hand soldering-iron. The seams of the can are thus rapidly and effectively soldered.

When it is desired to solder only one end of the can, the arrangement shown in Fig. 4

may be employed, where 20 indicates a solder-tank having wheels 21 for one end of the can 22, located in said tank, and wheels 23 for the other end of the can, located outside of said tank. By this construction one end of the can can be soldered without affecting the other end.

In Fig. 5 I have shown a construction which is adjustable to cans of different lengths, and for this purpose two tanks 30 and 31 are employed, a set of wheels 32 for one end of the can being arranged in one tank and a set 33 for the other end being arranged in the other tank. The shafts of said wheels are then each made in sections 34 35 to telescopically connect to each other between the two tanks, as by the reduced end 36, of one shaft-section entering the socketed end 37 of the other and having a slot-and-pin connection to insure said sections turning in unison. If, therefore, a different length of can is desired to be soldered, the wheels for the ends of the can are slid apart to accommodate said can between themselves.

My improved soldering-machine is especially advantageous for small lots of cans where it would not be practicable to maintain a floater, and, furthermore, in soldering such cans as cannot be done at all by a floater—as, for instance, cans with fancy ends or tapered cans. In soldering tapered cans obviously the wheels at the opposite ends of the can may be of different sizes to properly support the can.

Having thus described the invention, what I claim as new is—

1. In a soldering-machine, the combination with a tank adapted to contain liquid solder, of shafts, wheels upon said shafts adapted to engage the sides of a can, and means for rotating said shafts at different speeds.

2. In a soldering-machine, the combination with a tank adapted to contain liquid solder, of wheels arranged in said tank and adapted to engage at different points the periphery of a can, and means for rotating said wheels at different speeds.

3. In a soldering-machine, the combination of opposite wheels adapted to support between themselves a can, a solder-tank in which one of said wheels is placed, and means for rotating said wheels at different speeds.

4. In a soldering-machine, the combination of a solder-tank, opposite wheels adapted to

support a can between themselves, one of said wheels being located in said solder-tank, and means for rotating said wheels and turning said one in the solder-tank more rapidly than the others.

5. In a can-soldering machine, the combination with a solder-tank, of a wheel in said tank, and means adapted to hold a can in engagement with said wheel and rotate the same upon an axis parallel to the axis of the wheel but at a different speed.

6. In a soldering-machine, the combination with opposite wheels adapted to support between themselves a can, means for rotating said wheels at different speeds, a soldering-tank in which the more rapidly turning wheel is submerged, and means for holding a can in position upon said wheels.

7. In a soldering-machine, the combination with a tank adapted to contain liquid solder, of wheels adapted to support between themselves a can, and means for rotating said wheels in the same direction and turning the forward set more rapidly than the rear set.

8. In a soldering-machine, the combination of independent tanks adapted to contain liquid solder, shafts extending through said tanks and being in sections which are longitudinally adjustable upon each other between said tanks, wheels upon the said shafts in the said tanks adapted to engage and support a can, and means for rotating said shafts.

9. In a soldering-machine, the combination of independent tanks adapted to contain liquid solder, shafts extending through said tanks and being in sections which are longitudinally adjustable upon each other between the said tanks, wheels upon said shafts in the said tanks adapted to engage and support a can, and means for rotating said shafts at different speeds.

10. In a can-soldering machine, the combination with a solder-tank, of a wheel in said tank, and means adapted to hold a can in engagement with said wheel and rotate the same upon an axis parallel to the axis of the wheel but at a slower speed.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of April, 1905.

THOMAS GRAHAM.

Witnesses:

RUSSELL M. EVERETT,
M. V. DOYLE.