

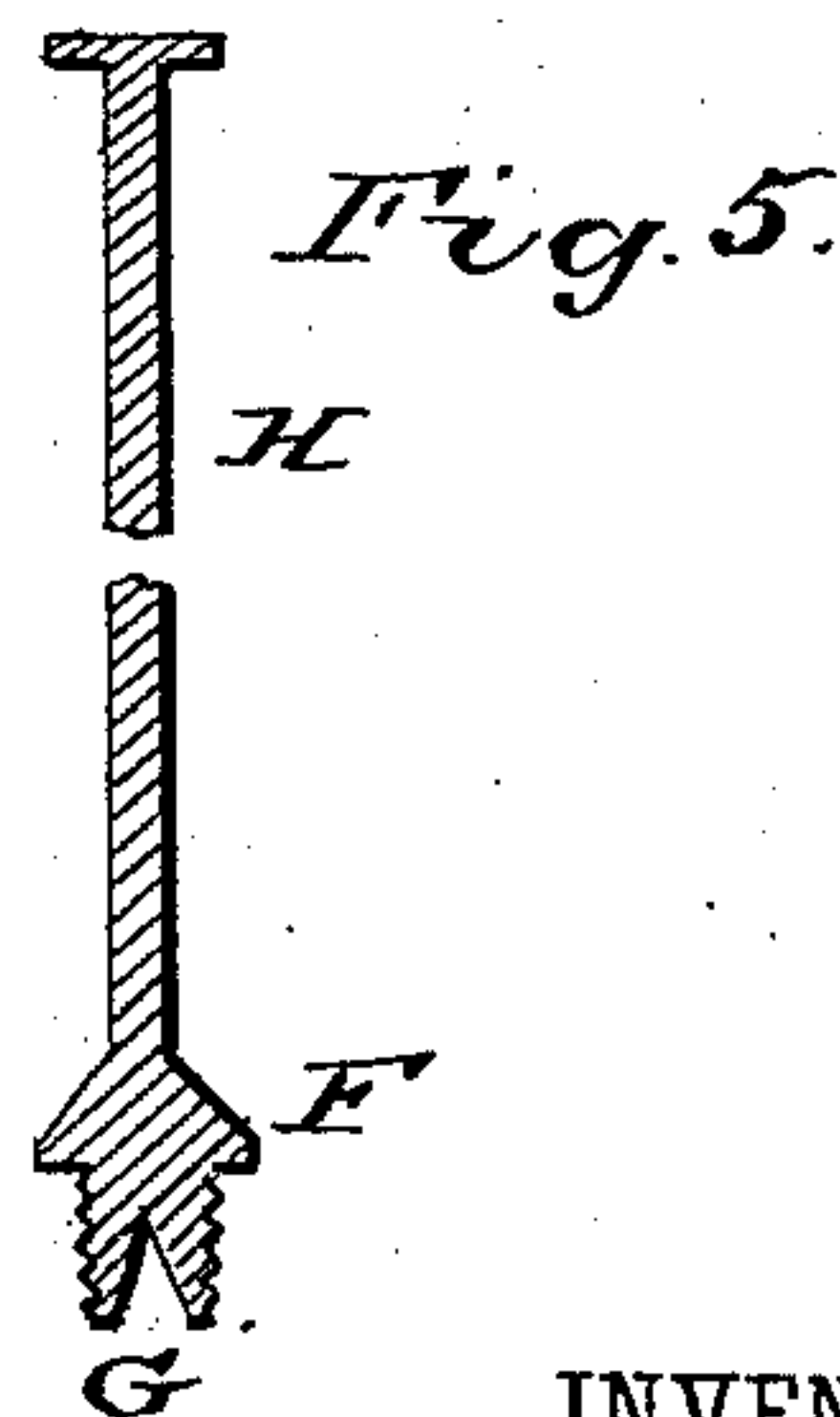
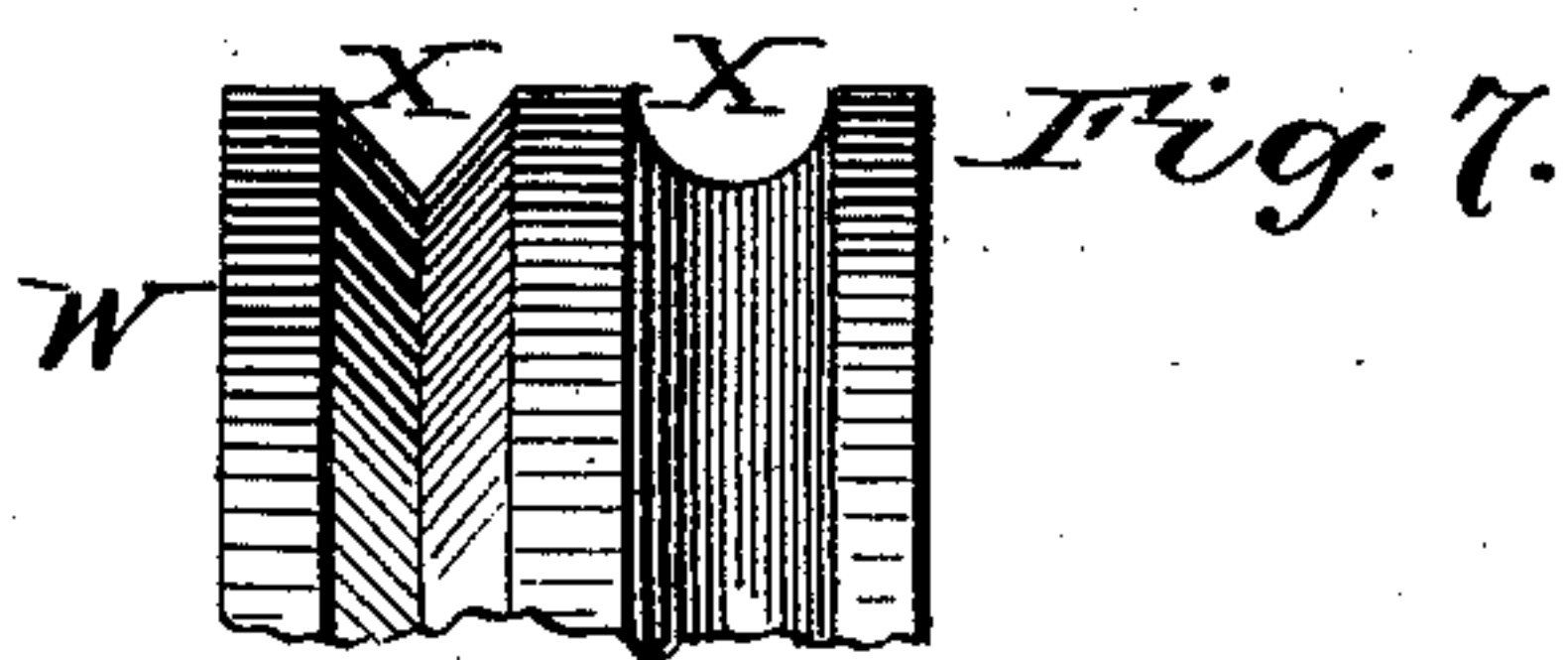
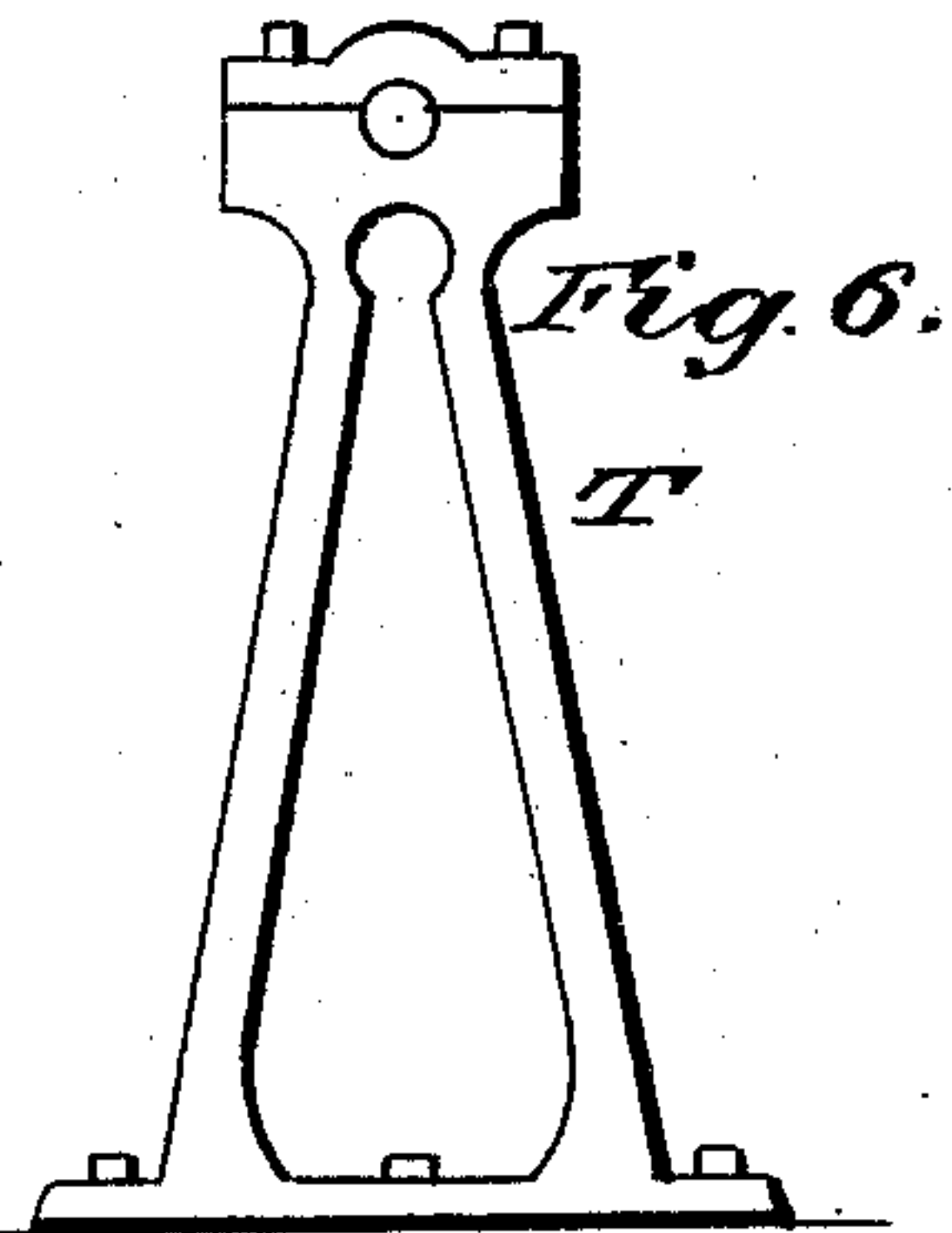
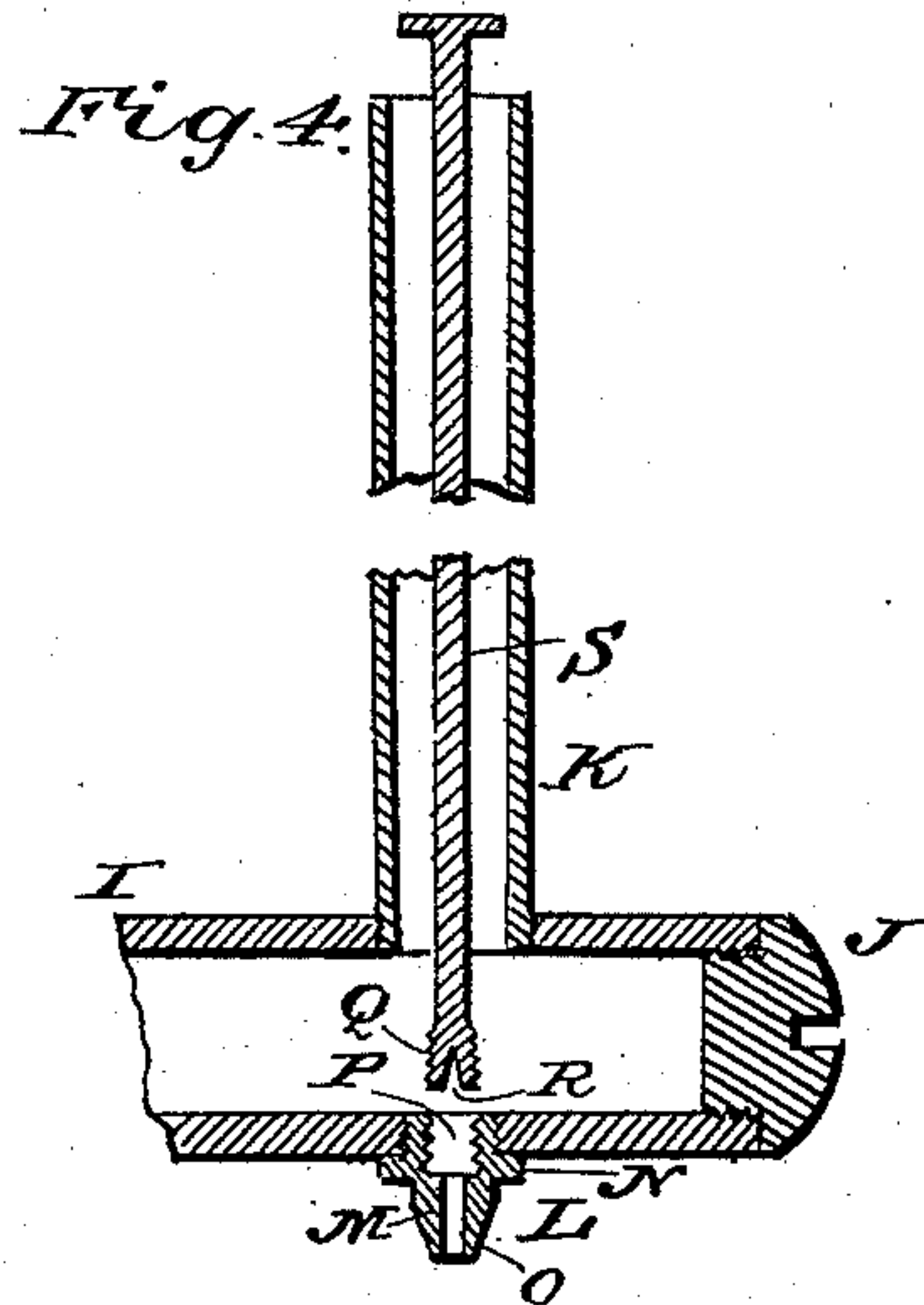
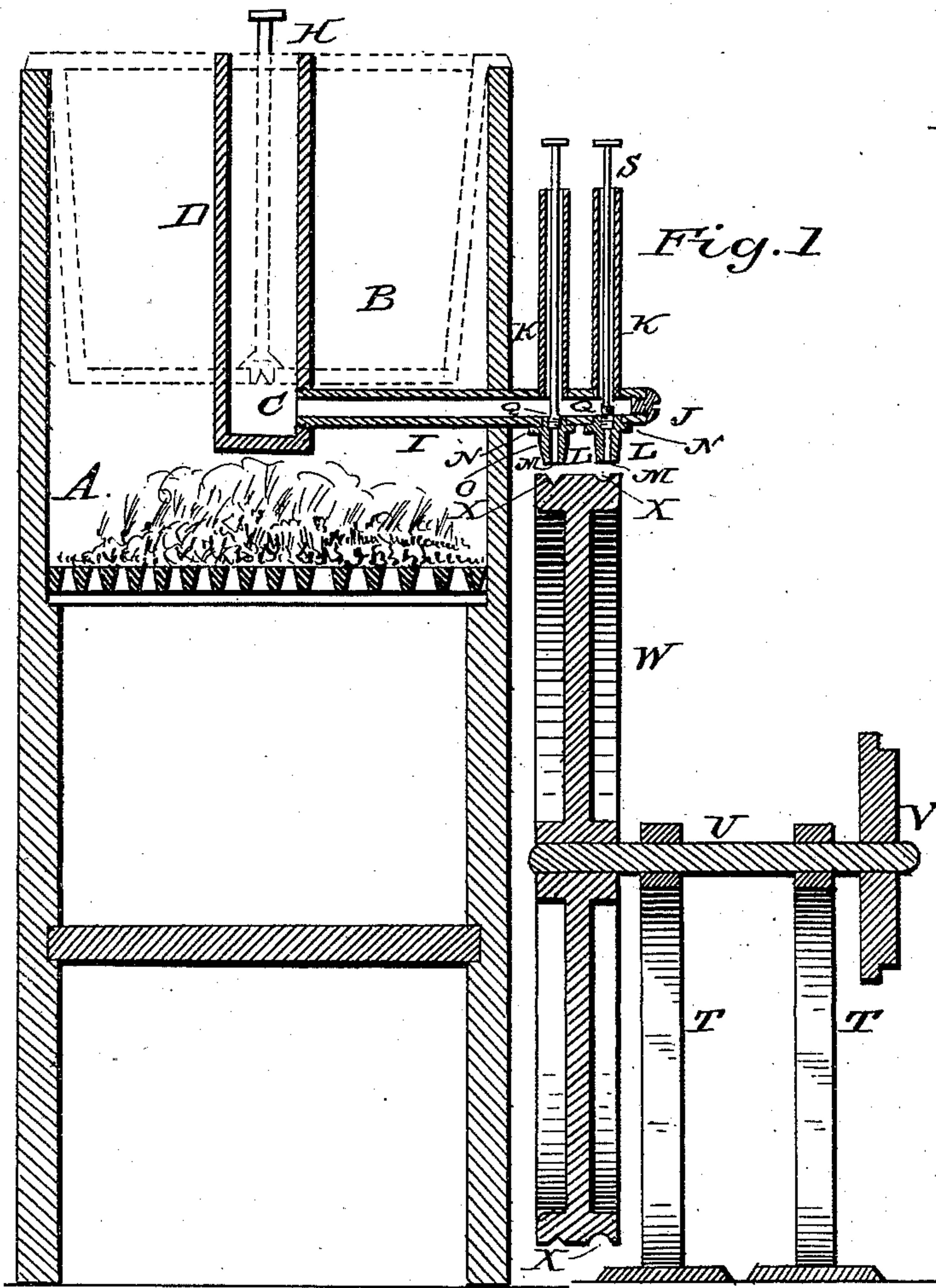
(No Model.)

2 Sheets—Sheet 1.

E. L. YOUNG & L. DYER.  
MACHINE FOR MAKING WIRE SOLDER.

No. 312,598.

Patented Feb. 17, 1885.



WITNESSES:

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*Witness*

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by *Louis Baggett & Co.* ATTORNEYS.

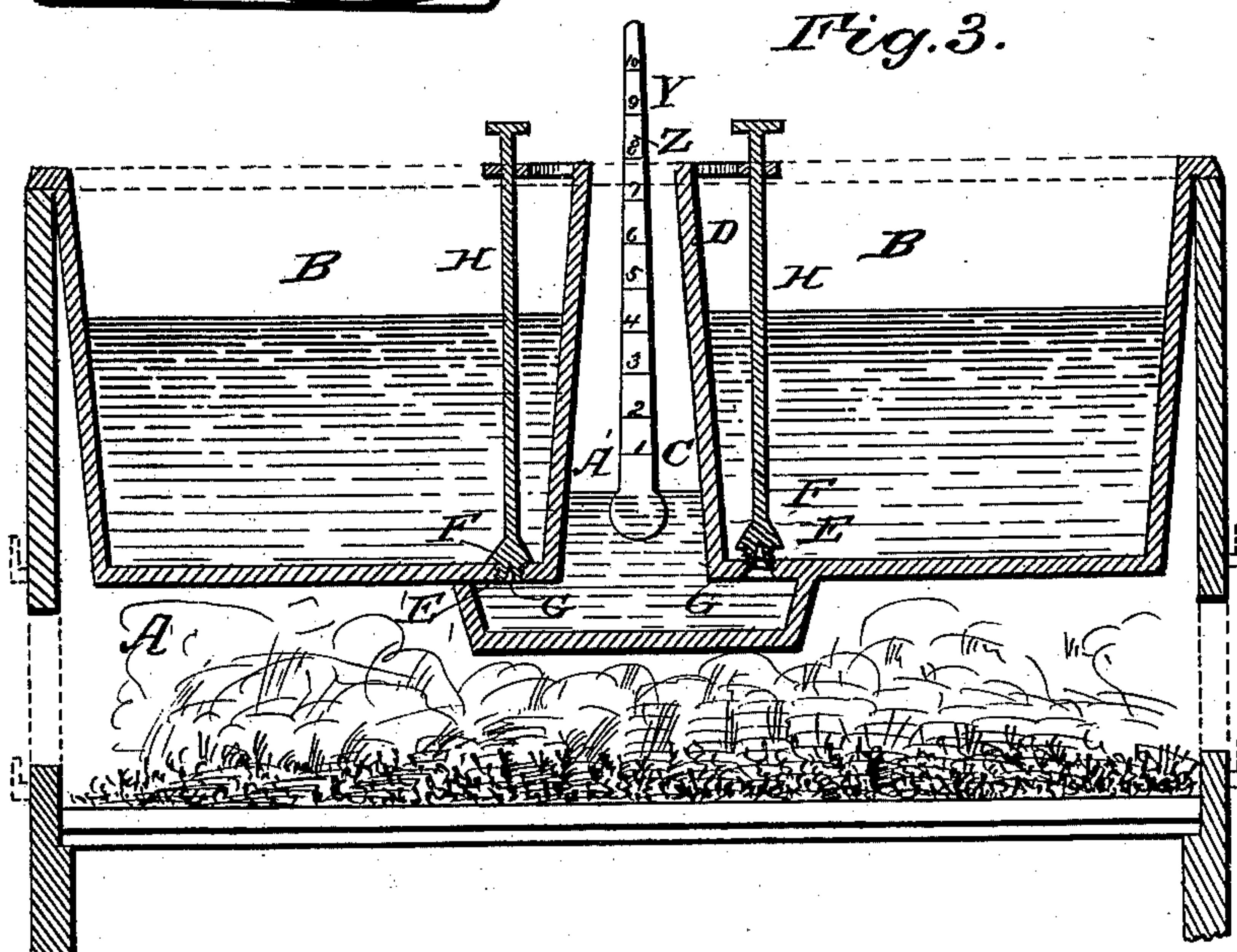
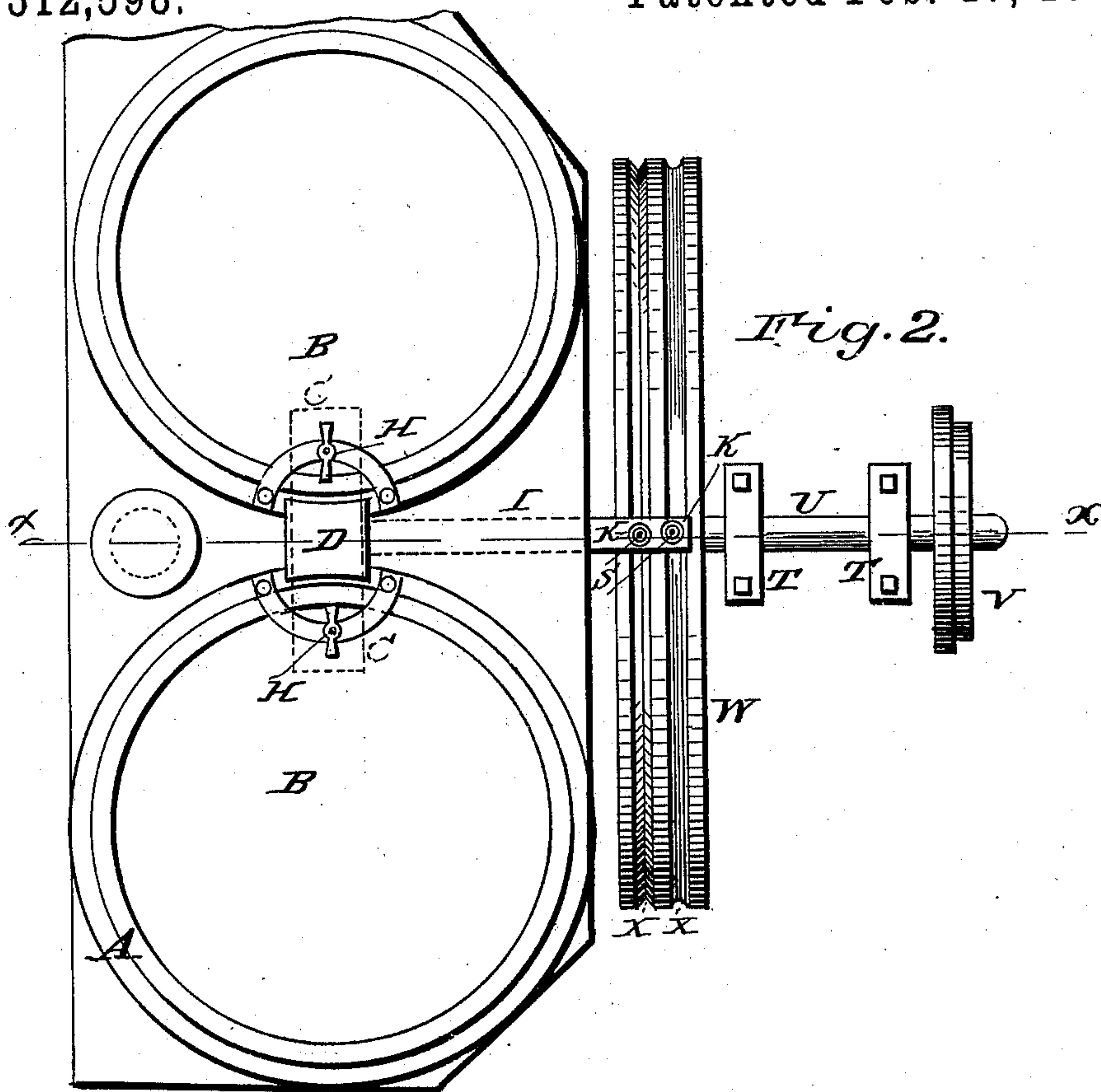
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2 Sheets—Sheet 2.

E. L. YOUNG & L. DYER.  
MACHINE FOR MAKING WIRE SOLDER.

No. 312,598.

Patented Feb. 17, 1885.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

EDMUND L. YOUNG AND LUCIUS DYER, OF MILLBRIDGE, MAINE.

## MACHINE FOR MAKING WIRE-SOLDER.

SPECIFICATION forming part of Letters Patent No. 312,598, dated February 17, 1885.

Application filed May 31, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, EDMUND L. YOUNG and LUCIUS DYER, citizens of the United States, and residents of Millbridge, in the county of Washington and State of Maine, have invented certain new and useful Improvements in Machines for Making Wire-Solder; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a central longitudinal vertical sectional view on line *xx*, Fig. 2, of our improved machine or apparatus for making wire-solder. Fig. 2 is a top or plan view of the same. Fig. 3 is a transverse vertical sectional view. Fig. 4 is a detail view, on an enlarged scale, of one of the escape-spouts. Fig. 5 is a detail view, on a large scale, of one of the valves, with its operating-rod. Fig. 6 is a front view of one of the posts or uprights supporting the axle of the molding-wheel; and Fig. 7 is a detail view, on an enlarged scale, of a portion of the rim of the molding-wheel.

The same letters refer to the same parts in all the figures.

This invention relates to an improved machine or apparatus for manufacturing wire-solder; and it has for its object to construct a device in which this kind of solder may be manufactured by a continuous operation, and in which the pressure may be regulated to any desired extent, so as to cause the molten metal to escape from the kettles or crucibles at any desired degree of speed, substantially as we shall now proceed more fully to describe, and point out in the claims.

In the drawings, A designates a suitably-constructed furnace the upper edge or rim of which is arranged to support two kettles or crucibles, B B, arranged adjoining each other, as shown, and connected by a central basin, C, having an upwardly-extending tube, D. The kettles B B are connected with the basin C by means of openings E E, which are screw-threaded, as shown, so as to receive the valves F F, which consist simply of screw-plugs having V-shaped incisions or indentations G and upwardly-extending rods or handles H, by

means of which they may be conveniently manipulated, the said handles extending upwardly through the contents of the kettles or crucibles and to a point where they may be conveniently reached and manipulated. It will be seen that by this construction by operating either of the valves the contents of either kettle may be permitted to escape at any desired rate of speed into the central basin and the tube connected therewith.

I is the tube or spout, extending from the basin C in a forward direction through the furnace and terminating some distance beyond the front wall of the latter, where it is provided with a plug, J. (Clearly shown in Fig. 4 of the drawings.) The front end of the said tube I is provided with one or more upwardly-extending necks, K K, directly below which the escape-nozzles L L are located. The said nozzles consist simply of nipples M, having flanges N, pointed ends O, and screw-threaded shanks P, which latter are threaded interiorly, so as to receive the valves Q, which latter consist of screw-threaded plugs having V-shaped recesses R, that serve to admit of the passage of the molten metal in any desired quantities through the plugs or nipples, the said valves being operated by means of the rods or handles S, extending upwardly through the tubes K.

At the front of the furnace are located the standards T T, one of which is shown in detail in Fig. 6 of the drawings, and the upper ends of which serve to support a shaft, U, carrying at its outer end a band wheel or pulley, V, to which the motive power is imparted, and having at its inner end a wheel, W, the rim or periphery of which is provided with one or more annular grooves, X X, which may be either V-shaped, U-shaped, or of any other suitable shape in cross-section, as shown in Fig. 7 of the drawings, and of which there may be any desired number corresponding with the number of escape-nipples of the tube I, and located directly under the said nipples.

Y is a gage or indicator consisting of a stem, Z, the lower end of which is provided with a float, A', and which is suitably indexed or graduated, which may be of any suitable material not affected by the heat required to melt the solder. This gage is placed in the tube D of basin C, above the upper edge or rim



of which it will project, so as to indicate at a glance the height of the molten metal in the said tube, and consequently the pressure which regulates the rate of speed at which the metal will escape from the crucible.

The operation of our invention is as follows: The metal or alloy of which the solder is to be formed is placed in the kettles or crucibles and melted, after which it is allowed to run from one of the crucibles into the basin C, where it is allowed to rise to such a height that it shall pass through the outlet-tube I at the desired rate of speed. The valve or valves Q are then opened, the molding-wheel W being meanwhile revolved by proper machinery, so as to receive in its grooves X X the molten metal as it passes from the furnace. When the first crucible has been exhausted, we draw the metal from the second one, and while this is being used a new supply may be melted in the first crucible, thus enabling us to continue the operation continuously for an indefinite length of time.

It is obvious that any suitable means may be employed for cooling the molding-wheel, in order to cause the metal poured therein to congeal almost instantaneously, after which it may be cut off in suitable lengths, or wound, twisted, or otherwise disposed of. Thus, for instance, the rim or tire of the said wheel may be made hollow, and supplied in any suitable manner with a continuous flow of cold water, which will have the desired effect.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

1. In a machine for making wire-solder, the combination, with a suitably-constructed furnace, of a pair of kettles or crucibles connecting with a central basin or receptacle having an upwardly-extending tube or flue and suitably-constructed valves, whereby the flow of molten metal from the said kettles into the said central basin may be controlled and regulated, substantially as and for the purpose set forth.

2. In a machine for making wire-solder, the combination, with a series of crucibles, of a central receptacle, suitably-arranged valves for controlling and regulating the flow of molten metal from either of the said crucibles into the central basin, and a gage or indicator arranged in a flue extending upwardly from the central basin and serving to indicate the height of molten metal in the latter, substantially as and for the purpose set forth.

3. In a machine for making wire-solder, the

combination, with a series of crucibles, of a central basin or receptacle, and screw-threaded plugs or valves working in openings that connect the crucibles with the central basin, and provided with V-shaped incisions and with operating rods or handles that extend upwardly through the contents of the crucibles to a point at which they may be conveniently reached and manipulated, substantially as and for the purpose set forth.

4. In a machine for making wire-solder, the combination, with a series of crucibles, of a central basin or receptacle connected with each crucible of the series, and an escape tube or passage extending from the said basin outwardly through the furnace, and provided at its outer end with spouts or nipples and with upwardly-extending tubes adapted to accommodate the operating rods or handles of valves serving to close or to regulate the flow of molten metal through the said nipples, substantially as set forth.

5. In a machine for making wire-solder, the combination, with suitable melting devices and valves for regulating the flow of the molten metal, substantially as described, of an escape-tube extending through the furnace, and provided at its front end with flanged internally-threaded nipples and plugs or valves for the latter, having V-shaped incisions, and provided with operating-rods that extend upwardly through tubes upon the upper side of the escape-passage, substantially as set forth.

6. In a machine for making wire-solder, the combination of a smelting-furnace, a series of crucibles, a central basin or receptacle communicating with each crucible of the series, having an upwardly-extending flue, a gage or indicator placed in the said flue, means for regulating the flow of metal from the crucibles into the central basin, an escape-passage extending from the central basin outwardly through the furnace, escape-nozzles at the front end of the said passage, suitable regulating-valves, and a molding-wheel arranged under the said nozzles, and having suitably-shaped grooves corresponding therewith, substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

EDMUND L. YOUNG.  
LUCIUS DYER.

Witnesses:

LYCURGUS WASGATT,  
GEORGE B. LEIGHTON.