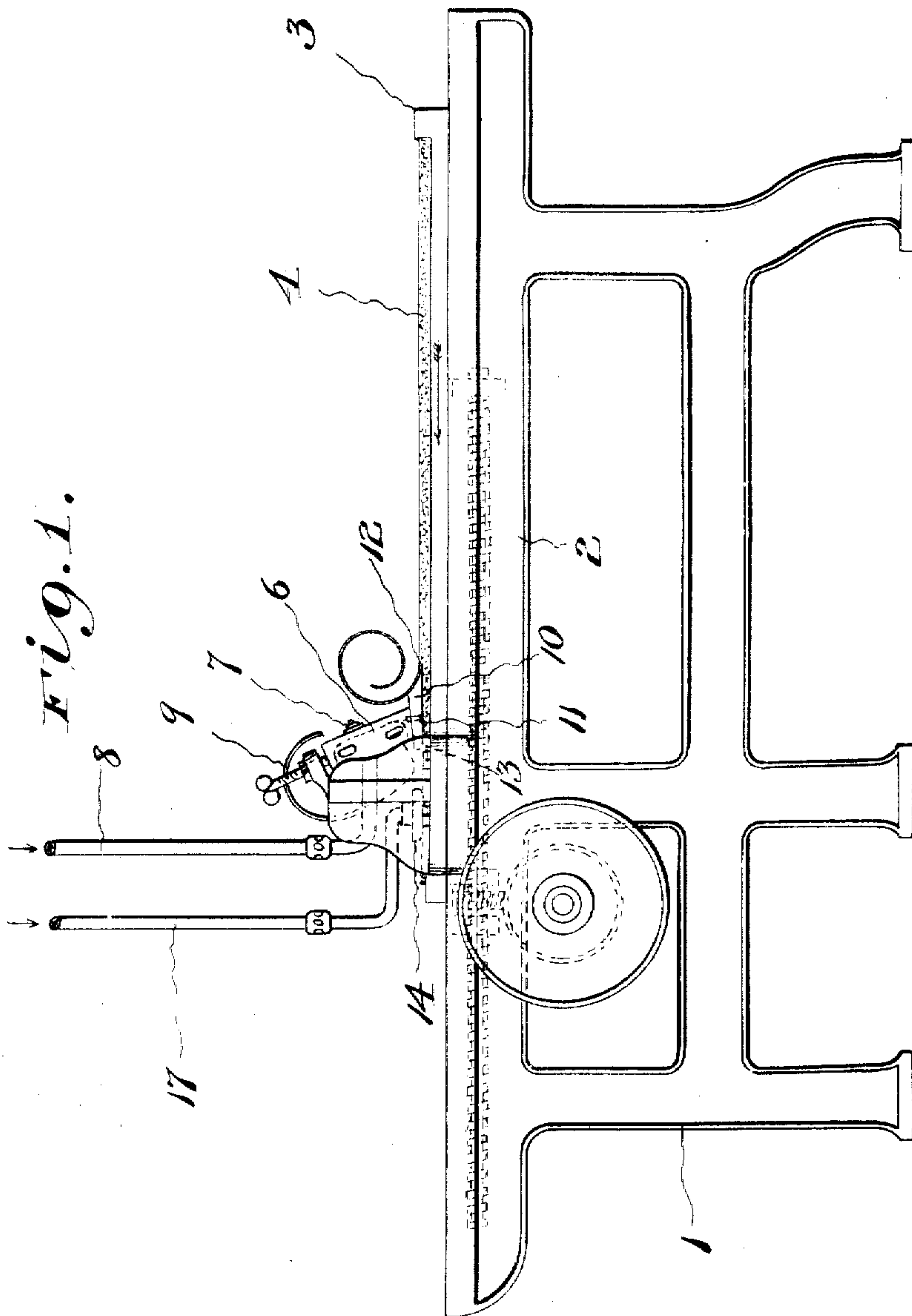


G. E. DUNTON.
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APPLICATION FILED MAR. 3, 1909.

936,871.

Patented Oct. 12, 1909.
3 SHEETS—SHEET 1.



Witnesses

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Fig. 2.

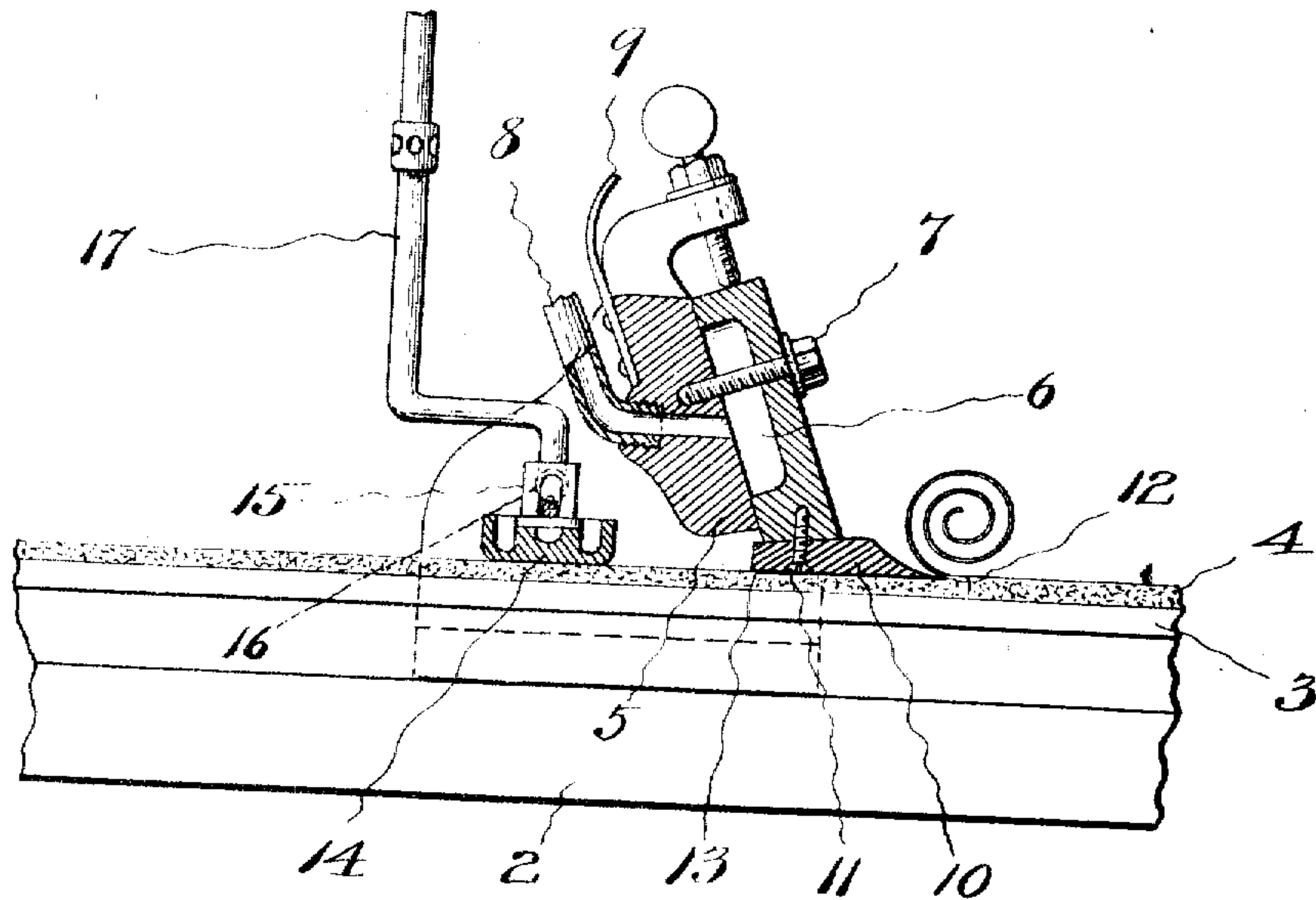


Fig. 4.

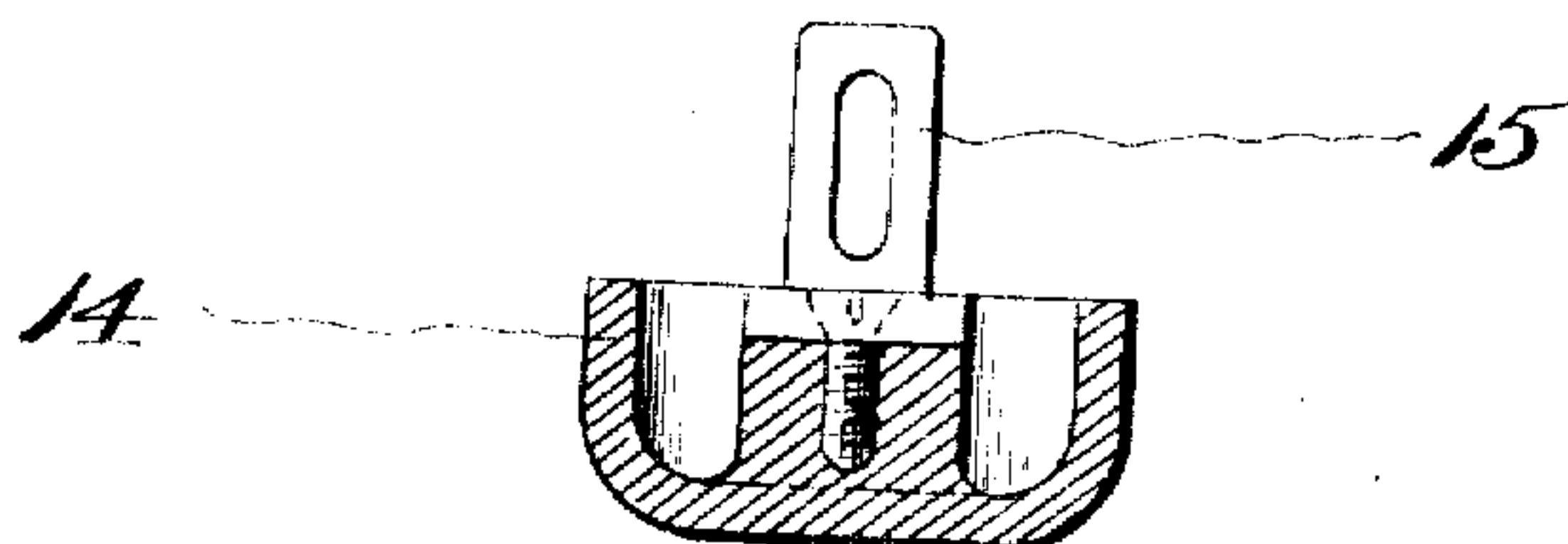
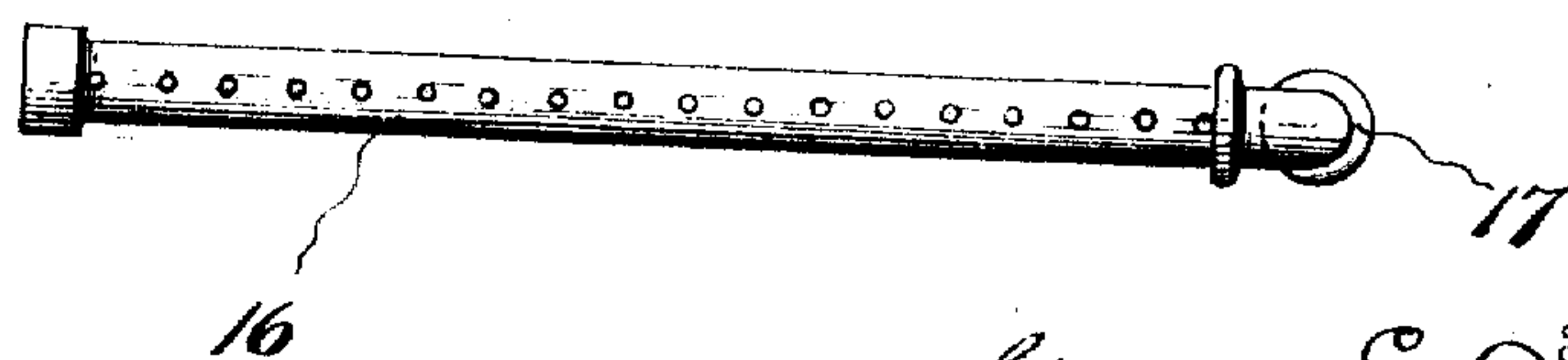


Fig. 5.



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Fig. 3.

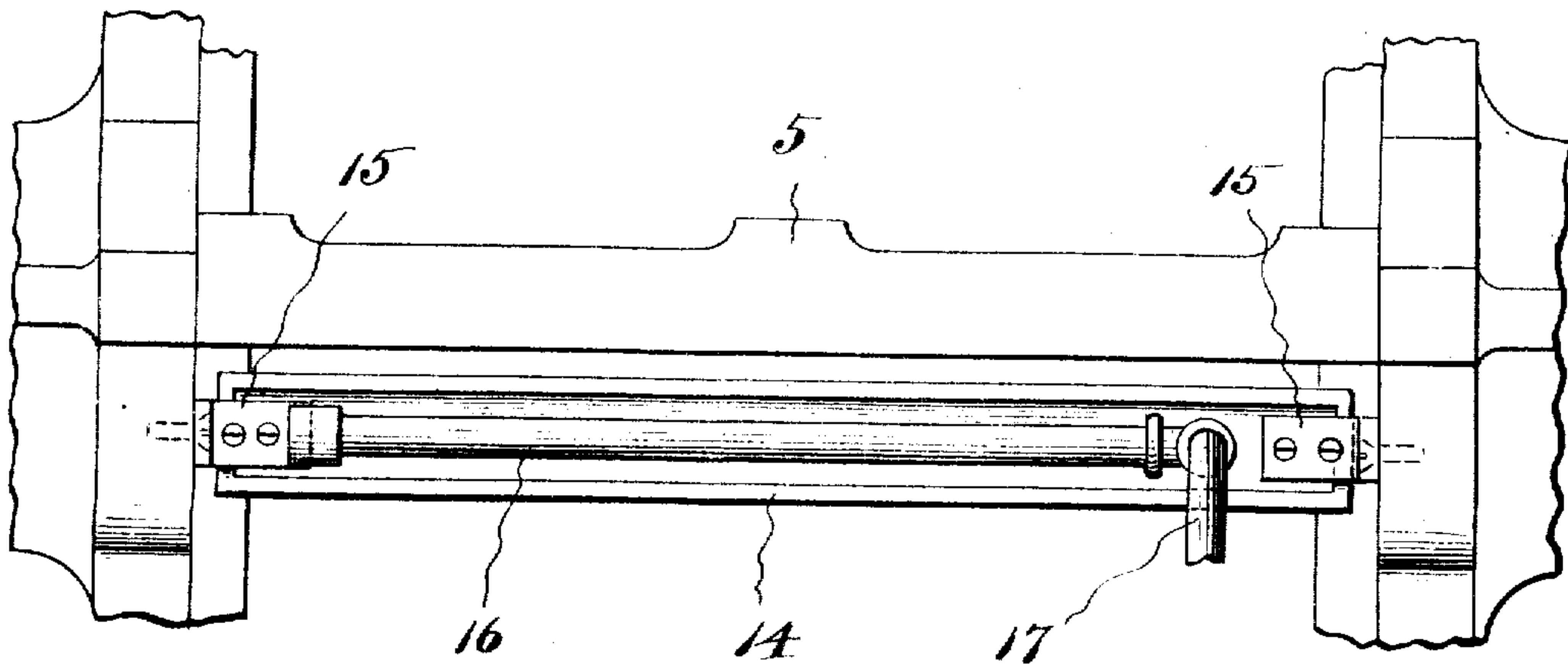


Fig. 6.

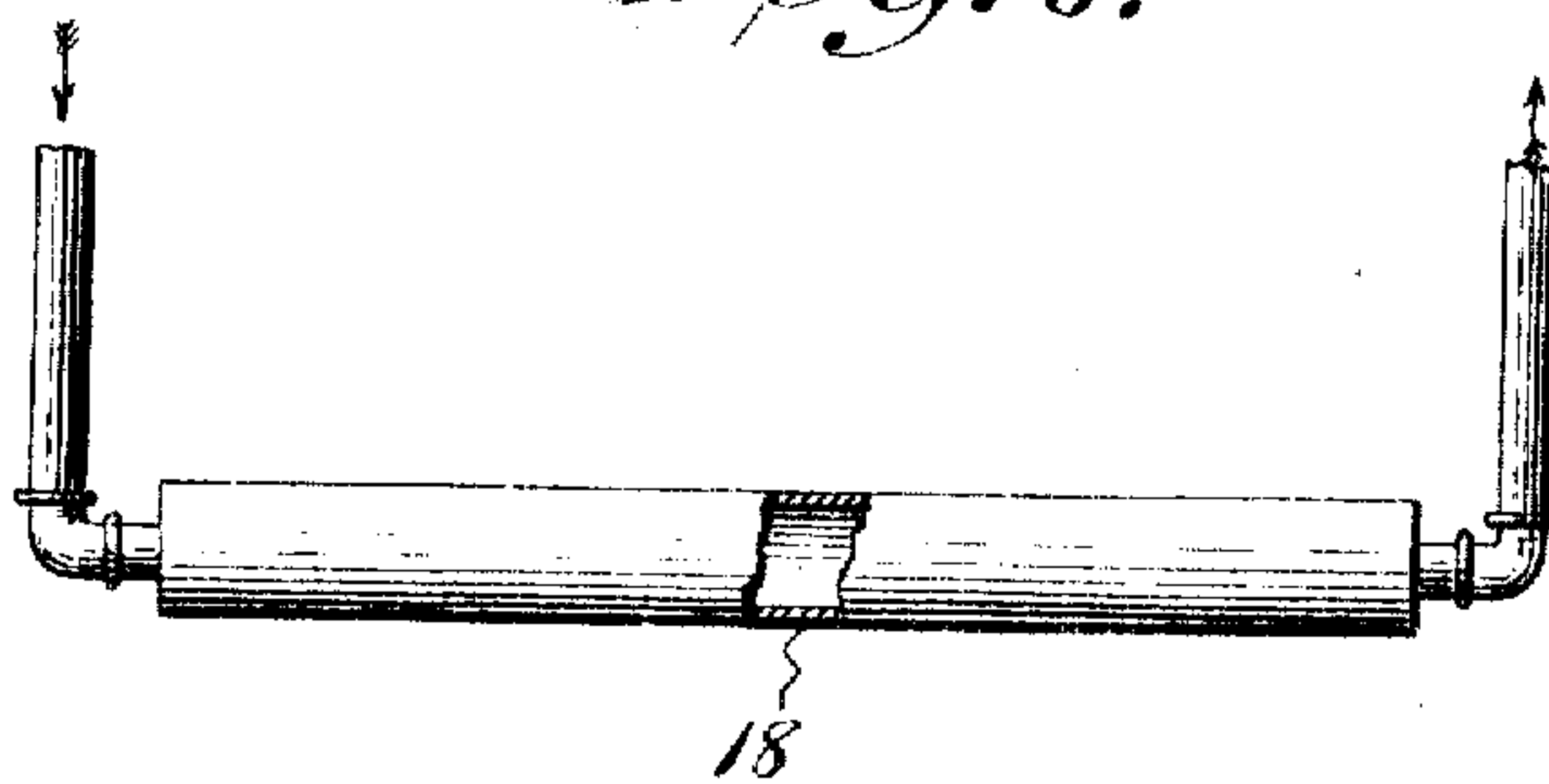
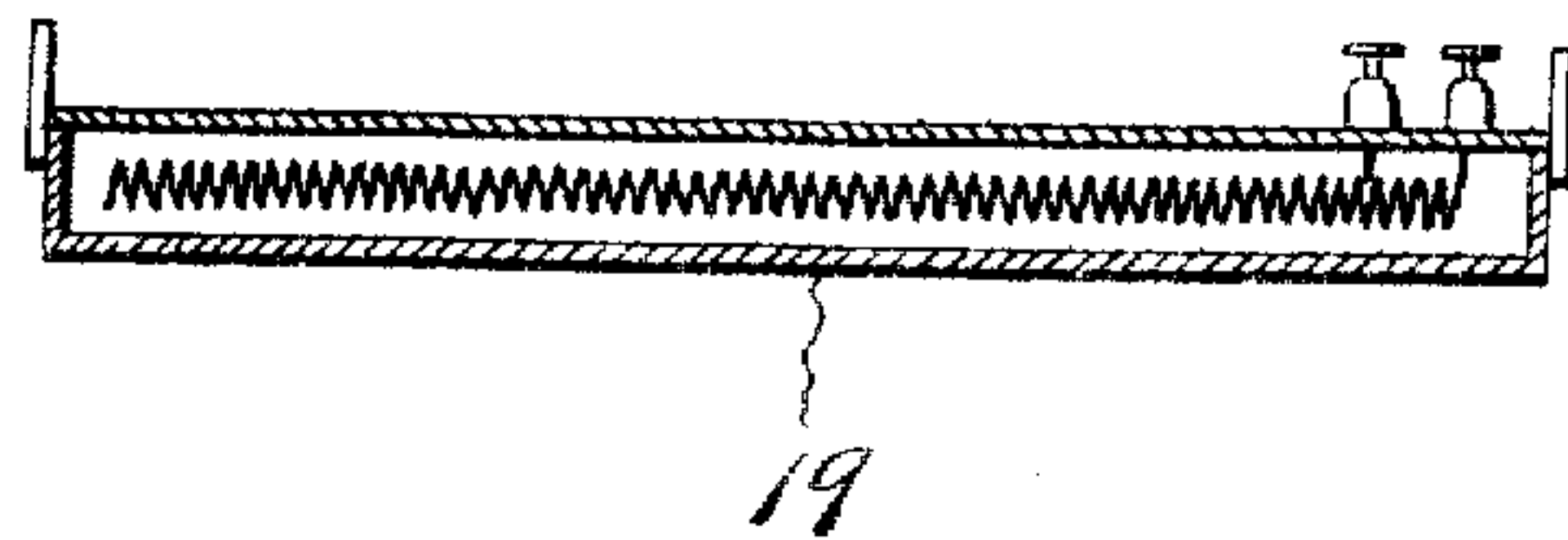


Fig. 7.



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UNITED STATES PATENT OFFICE.

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METHOD OF PREPARING MOLDS FOR ELECTROTYPES.

936,871.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed March 3, 1909. Serial No. 481,118.

To all whom it may concern:

Be it known that I, GEORGE E. DUNTON, residing at New York city, county of New York, State of New York, a citizen of the United States, have invented certain new and useful Improvements in Methods of Preparing Molds for Electrotypes; and I do 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.

My invention relates to an improved method of preparing molds for electrotypes, and more especially to a method of polishing and shaving or planing the surfaces of wax molds used by electrotypers in the molding of their forms.

It has for its object the shaving or planing either by heated or unheated means the surface of the mold, which may be made of wax or other suitable material, and polishing or burnishing said shaved surface, as it is shaved, with heated means which is separate from the shaving or planing means but designed to be used in connection therewith, thus combining the shaving or planing and polishing in one operation and producing a mold with a perfectly smooth, level and even surface, free from pits, indentures or other imperfections, and imparting to the surface of the wax a polished or burnished appearance.

It further has for its object to provide means whereby the mold is held in place during the operation of shaving or planing and polishing its surface.

It still further has for its object to provide a method for preparing molds for electrotypes which is simple and inexpensive and which accomplishes the desired result perfectly.

The method now universally used is as follows:—The wax case, which is a thin sheet of copper or electrotypes metal, having been filled is placed on a table having a rim along its edges and melted wax or other suitable composition having been poured over the surface of the case, it is allowed to cool, set and become hard and then subjected to the knife of a wax shaving machine. By this method all the molds are made to one standard thickness and are primarily given what has been desired to be a smooth surface, but after being subjected to the scraping action of the knife due to its relative position to the bed of the machine and to the

fact that it has not been heated, the scraped surface of the wax will be rough and if the knife has been nicked or gapped along its so called "cutting edge" the surface will be streaked, each gap leaving a little ridge along the surface of the wax in the direction in which the knife is carried or the mold travels. It is then generally necessary to again scrape these molds, especially if they are used for the molding of halftones or other fine cuts, by hand or to "flame" them by passing an open flame of gas over the surface of the wax. This latter method has a very decided disadvantage in that it leaves the surface of the wax full of minute pits, which become very pronounced when examined through the magnifying glass. Each of these pits fills with molding lead more or less of which it will retain leaving minute rough spots over the surface of the electrotypes plate later on. These methods of re-scraping or flaming are not only unsatisfactory, but they are expensive as the operation consumes considerable time to either flame or scrape each mold by hand.

By my method which in the main is to polish, burnish or iron out any imperfections or uneven places in the surface of the mold and give it a polish or gloss after it has been shaved or planed I employ heated polishing means which although it is separate from the shaving or planing means is situated in proximity to the same.

Referring to the drawings which illustrate an apparatus for carrying out my method:—Figure 1 is a side elevation. Fig. 2 a detail sectional view of the shaving or planing means and the polishing burnishing or ironing means arranged to be heated by gas. Fig. 3 a top plan view of the polishing burnishing or ironing means. Fig. 4 a cross section of the polishing means as shown in Fig. 2 on an enlarged scale. Fig. 5 is a detail view of the perforated burner for use when the polishing means is to be heated by gas. Fig. 6 is a detail view of a modified form of polishing means adapted to be heated by steam. Fig. 7 is a detail view of a modified form of polishing means adapted to be heated by electricity.

In the drawings in which like numerals of reference denote like parts throughout the several views, 1 represents the apparatus or machine by which I carry out my method, which comprises a framework 2 provided with a reciprocally movable bed or table 3

which is designed to carry a wax mold 4, said framework having a bridge piece 5 extending across the same. To the face of the bridge piece a hollow heating chamber 6 is secured by means of cap screws 7, gas being fed to the same by means of a pipe 8, from any desired source of supply, which when ignited heats said chamber, and 9 is a hood or shield which covers the gas flame and prevents it from being blown out. The heating chamber 6 has a knife 10 secured on its under side by means of suitable screws 11 and heat is transmitted thereto from said heating chamber. Steam, electricity or any other heating medium may be substituted for the gas flame for heating the chamber 6, which heats the knife, or the knife may be heated direct.

The front of the cutting edge 12 of the knife 10 is elevated or raised slightly above its rear edge 13 so that the knife has a tendency to cut in a plane with its under surface, which is upward, which prevents the knife from scraping or pulling the surface of the wax and causes the rear edge of the knife to be pressed upon the surface of the wax mold 4 and to hold said mold down firmly. If the knife was pitched downward toward its cutting edge the tendency would be to pull the wax mold up on to the knife instead of shaving off its surface.

The polishing, burnishing or ironing of the surface of the mold is accomplished by means of a plate or bar 14 adjustably connected, at each end, to brackets 15 extending upwardly from the framework 2, said plate or bar being heated by means of a perforated gas burner 16 which directs the flame against the upper surface of the same, 17 being a pipe for feeding gas to said burner. The polishing means shown in Fig. 6 comprises a hollow roller 18 provided with a steam inlet pipe at one end and a steam outlet pipe at the other end, while the polishing means shown in Fig. 7 comprises an electrically heated chamber 19. The heated polishing means is shown in the form of a plate or bar, a chamber and a roller or cylinder but any other device which is capable of being heated and which will polish or burnish can be used. The heated polishing means may either be permanently secured to the apparatus or machine and the mold moved back and forth under the same, by mechanical means or by hand, or the mold

may be stationary and the polishing means moved over the mold by mechanical means or by hand.

The operation is as follows:—The knife 10 shaves off a portion of the wax mold in the form of a shaving and as the mold passes under the polisher or burnisher 14 polishes or burnishes, smooths or irons the surface of the wax mold by slightly softening the surface and smoothing it down. The bed or table 3 reciprocates on the framework under the knife and polisher and when one mold is finished and removed the bed is returned to its first position ready for other molds.

What I claim is:—

1. The method of preparing molds for electrotypes consisting in forming the mold and allowing it to cool, shaving the surface of the mold and then polishing the surface of said mold with heated polishing means which is separate from the shaving means, substantially as described.

2. The method of preparing molds for electrotypes consisting in forming the mold and allowing it to cool, shaving the surface of the mold with heated means and then polishing the surface of said mold with heated polishing means which is separate from the heated shaving means, substantially as described.

3. The method of preparing molds for electrotypes consisting in simultaneously shaving and polishing the surface of the mold, the polishing means being heated and separate from the shaving means, substantially as described.

4. The method of preparing molds for electrotypes consisting in forming the mold and allowing it to cool, simultaneously shaving and polishing the surface of the mold with heated means, the heated polishing means being separate from the heated shaving means, substantially as described.

5. The method of preparing molds for electrotypes consisting in shaving the surface of the mold and then polishing it with heated polishing means which is separate from the shaving means, substantially as described.

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

GEORGE E. DUNTON.

Witnesses:

H. BECKER,
N. FAIRCHILD.