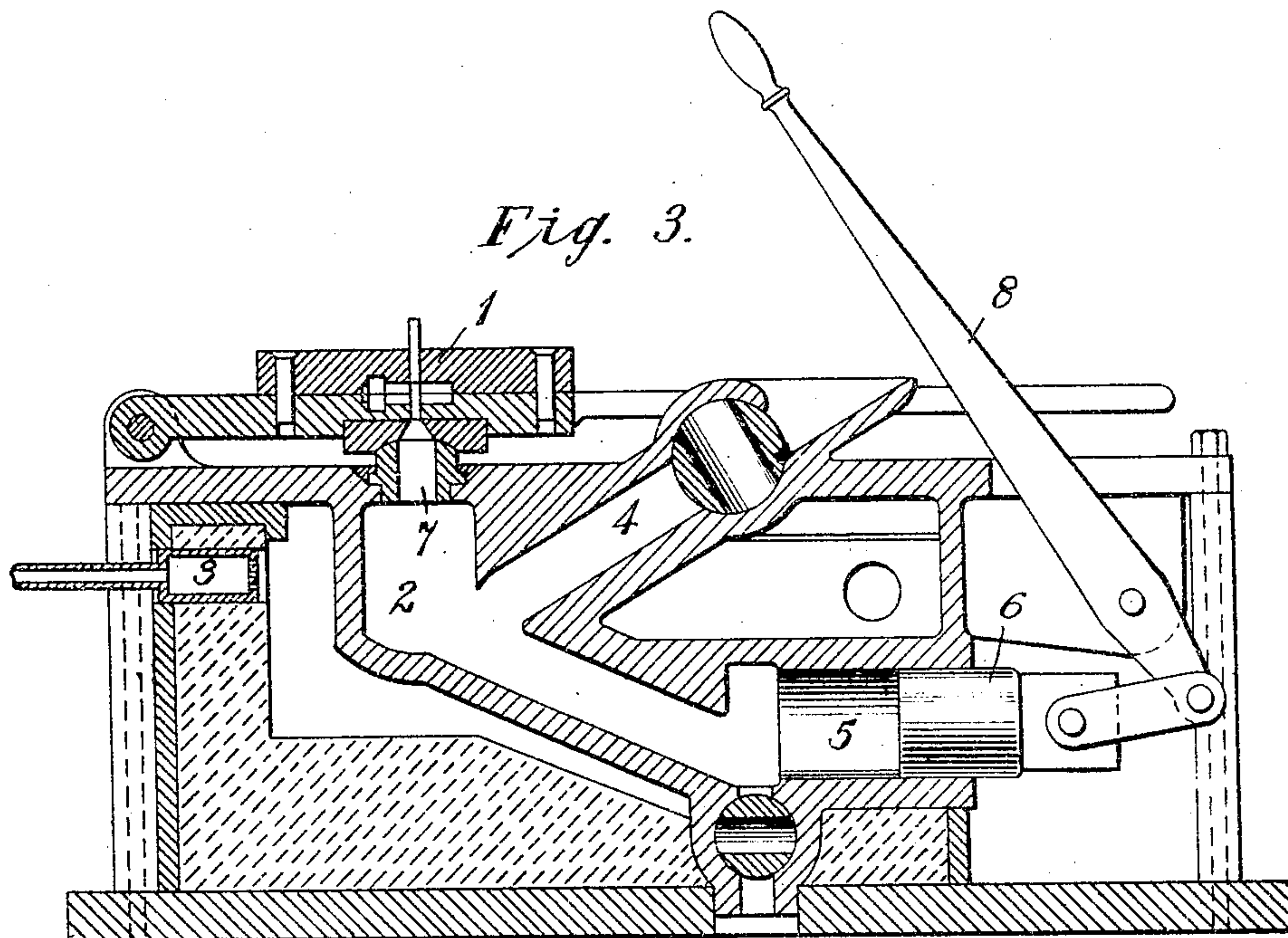
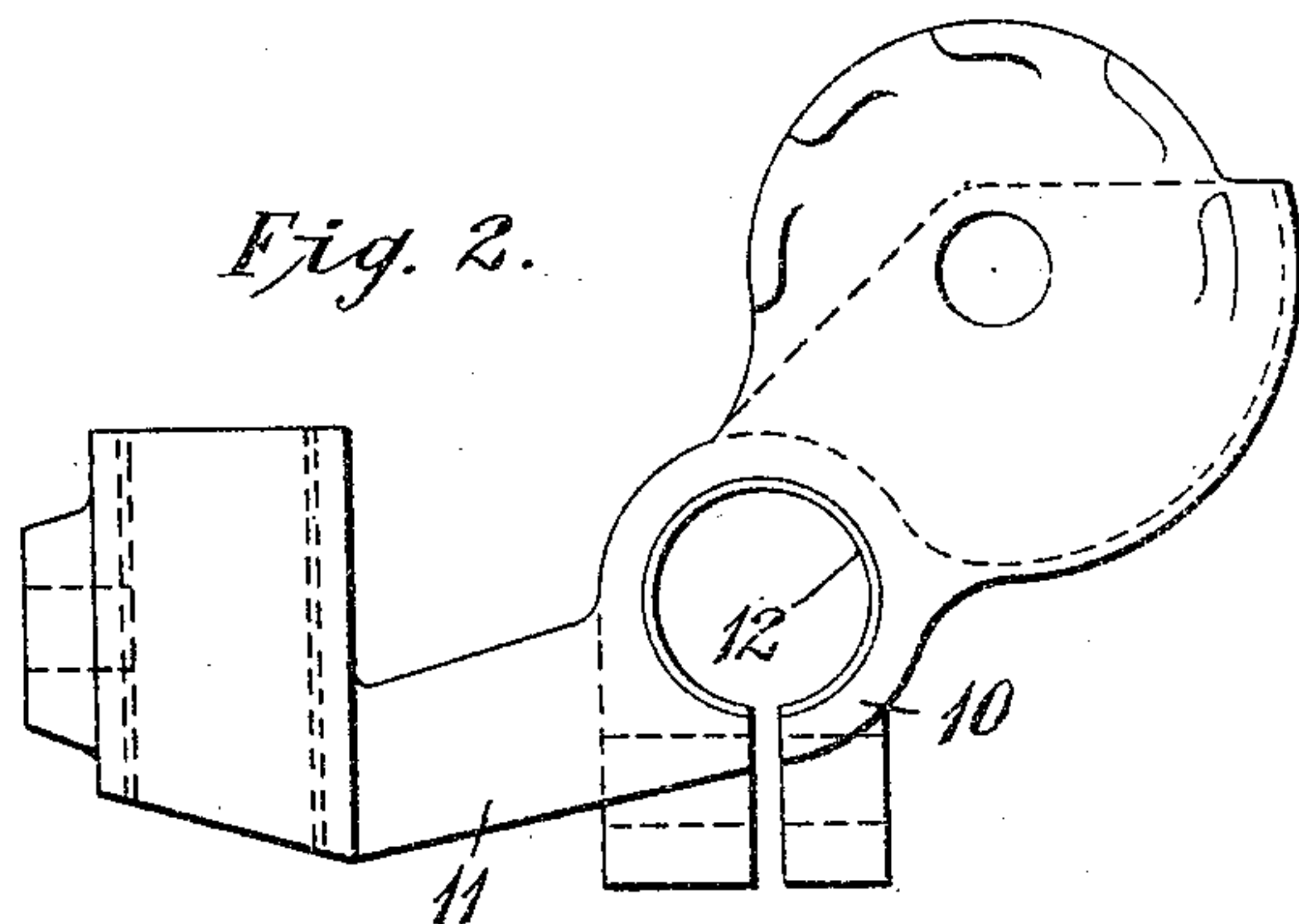
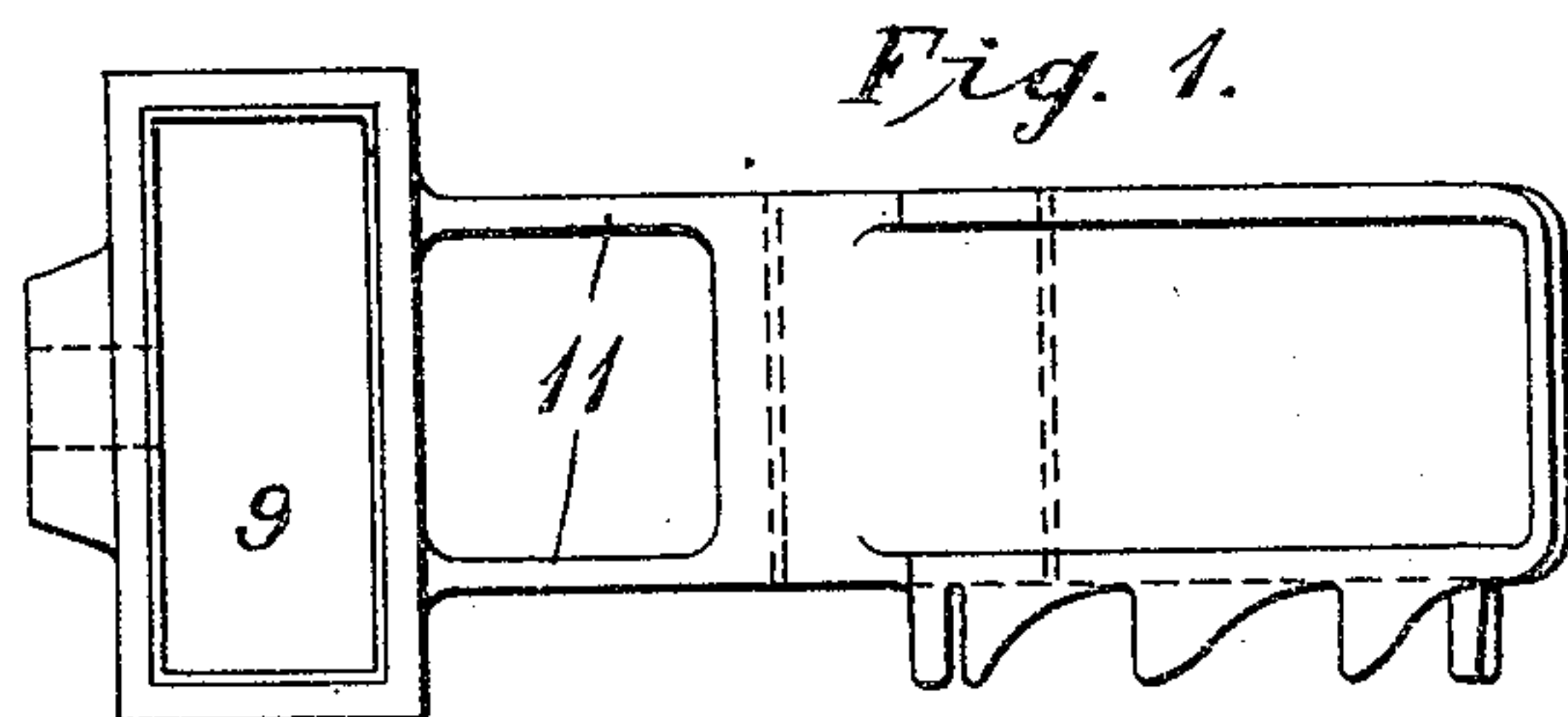


J. M. BARR.
 PROCESS OF MANUFACTURING PARTS OF BRUSH HOLDERS AND SIMILAR DEVICES.
 APPLICATION FILED JAN. 11, 1909.

969,511.

Patented Sept. 6, 1910.



WITNESSES:

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JOHN M. BARR, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

PROCESS OF MANUFACTURING PARTS OF BRUSH-HOLDERS AND SIMILAR DEVICES.

969,511.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed January 11, 1909. Serial No. 471,645.

To all whom it may concern:

Be it known that I, JOHN M. BARR, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Processes of Manufacturing Parts of Brush-Holders and Similar Devices, of which the following is a specification.

My invention relates to the manufacture of brush holders and similar electrical appliances, and it has for its object to provide a novel process of constructing the aforesaid parts that shall be inexpensive in performance and productive of specially accurate results.

In order to avoid the expense of machining cast metal parts, a die casting process of forcing molten metal into steel dies or molds, under heavy pressure, has heretofore been employed. While very satisfactory results may be secured in this way, the composition of the metal of which the castings are made is obviously restricted, in a general way, to such alloys as are free from porosity, have only a slight shrinkage and produce a body having a close, fine grain. The alloys usually employed contain zinc, among other well known metallic ingredients. For general purposes, the metal castings so produced are not rendered less serviceable by reason of the zinc, but, if these alloys are used in the manufacture of the parts of brush holders and other electric devices which conduct electric current, the zinc is volatilized and the surfaces become pitted.

According to my novel process of manufacture, I provide a lining of copper, brass or other suitable material for the surfaces of the device which are engaged by current-carrying parts, such as a carbon contact brush, and secure the lining in position by molding it in place by the die casting process above referred to. By this means, the lining material is smoothed out and accurately and firmly located in the desired position by contact with the surfaces of the die against which it is forced by the molten alloy that constitutes the body of the casting and which is forced into the mold by means of a plunger or force pump, in accordance with the methods used in die casting.

My invention is illustrated in the accompanying drawings, in which—

Figures 1 and 2 are, respectively, a plan

and an elevation of a brush holder part showing the location of the lining which I utilize in my process of manufacture. Fig. 3 is a sectional elevation of a well known type of die casting machine.

Referring first to Fig. 3 of the drawings, the device illustrated comprises a mold 1 which is placed over the melting pot 2 in a horizontal position, a gas burner or heat producer 3, a charging chute 4, a cylinder 5 communicating with the melting pot, and a piston 6 operating in the cylinder. A communication is established from the melting pot to the mold through a nozzle 7, and, when the metal in the pot is heated to the proper temperature, the piston is forced into the cylinder by means of a lever 8, and the molten metal is thereby forced rapidly through the nozzle 7 into the mold which is completely filled before the metal begins to cool. The shape of the mold will, of course, depend upon the desired form of the casting to be produced. Instead of the usual cores, steel rods or blocks are employed for producing such holes as are found in the brush holder hereinafter described for the reception of the carbon brush and for the usual supporting rod or bar. The mold is then removed and opened and the process repeated.

Referring now to Figs. 1 and 2, the brush holder part illustrated comprises a box 9 in which a carbon brush or current collector may be adjustably supported, a clamping member 10 which is adapted to fit over a stationary rod or bar and side members 11 which join the box 9 to the clamping member 10. The surface of the clamping member which is adjacent to the supporting rod or bar and the inner surface of the box 10 are lined with coatings or surfaces 12 of sheet copper or brass which are so wrapped around the core rods or blocks in the mold during the casting process as to become integral with the casting. If thin linings were inserted in ordinary molds they would become part of the casting, but they would not keep their shape sufficiently to be of service without machining. However, when thin sheet metal linings are used in my process, pressure produced in the molten metal is sufficient to smooth out and to shape the linings accurately to the core members.

I desire that variations from the process described which do not depart from the

spirit of my invention shall be included within its scope.

I claim as my invention:

1. The process of manufacturing parts of electrical appliances that comprises the following steps: placing impressionable sheet metal parts adjacent to the walls of a molding die to constitute linings for the electric contact surfaces, and then forcing molten metal into the molding die under sufficient pressure to form the linings.

2. The process of manufacturing parts of electrical appliances that comprises the following steps: placing impressionable sheet metal parts of high conductivity adjacent to

the walls of a die or mold to constitute linings for the electric contact surfaces, and then forcing molten metal suitable for die casting into the die or mold under pressure, thereby forcing the lining parts against the walls of the die or mold to accurately form the surfaces of the lining and to make the same integral with the casting.

In testimony whereof, I have hereunto subscribed my name this 31st day of December, 1908.

JOHN M. BARR.

Witnesses:

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BIRNEY HINES.