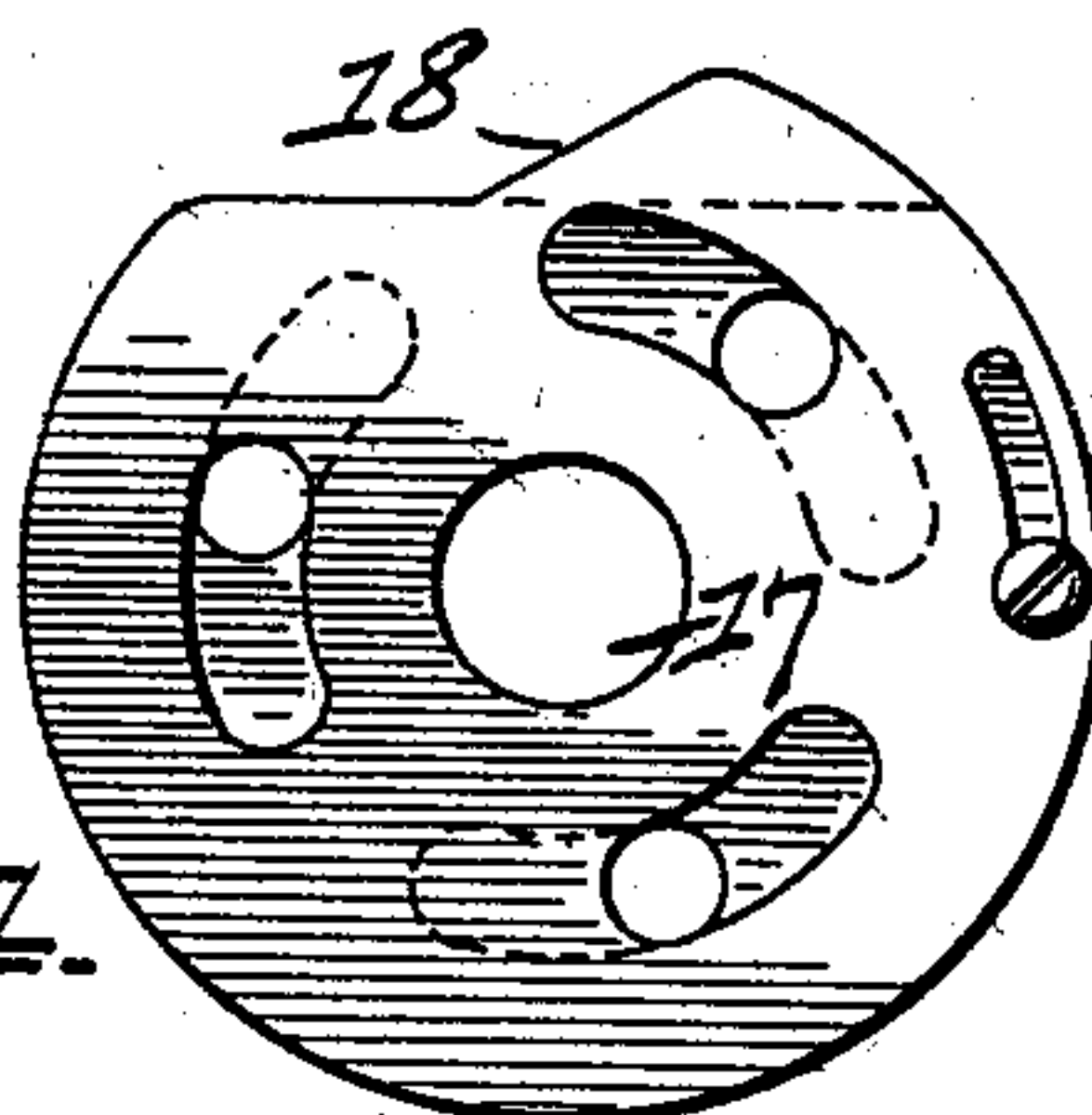
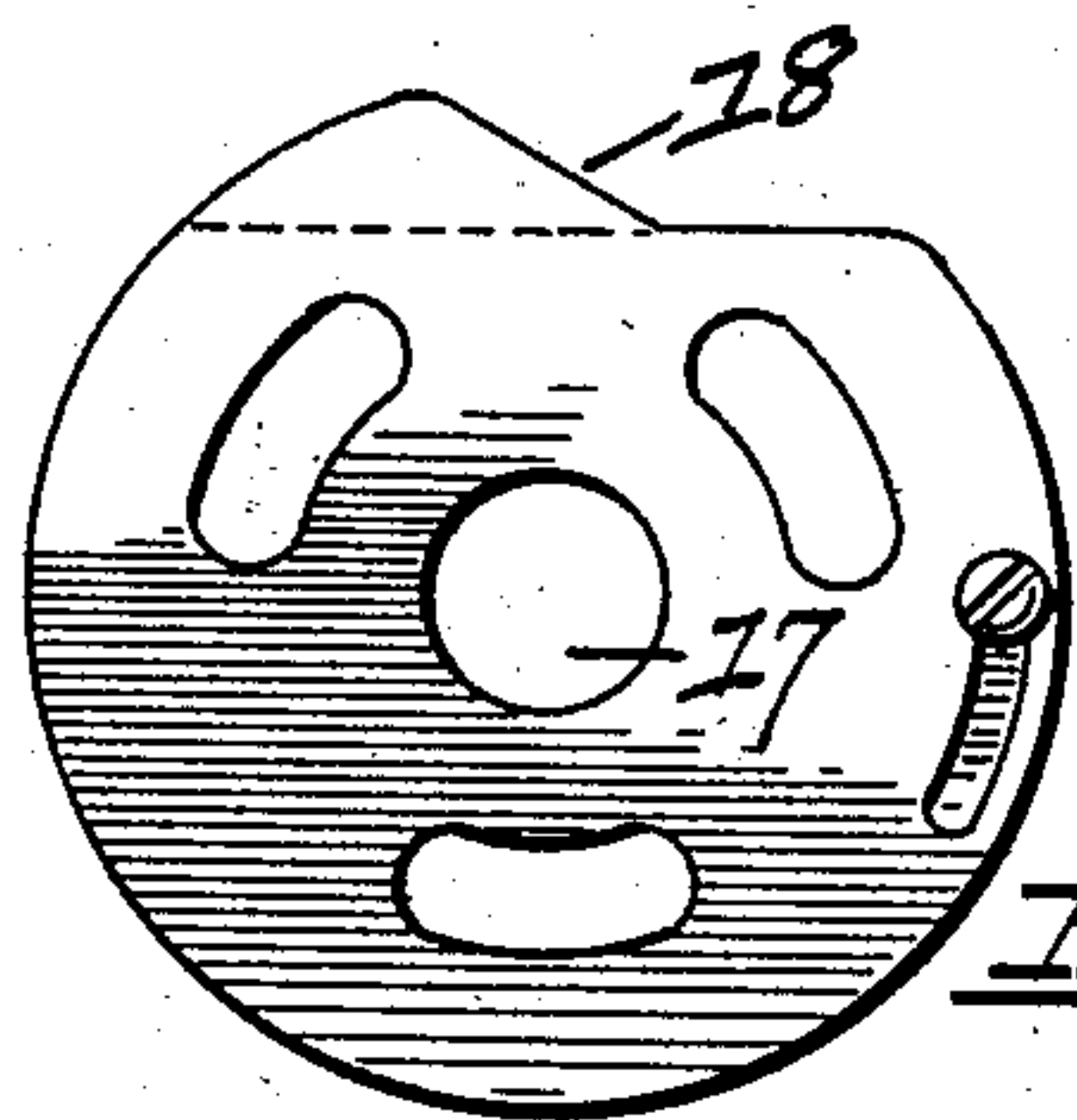
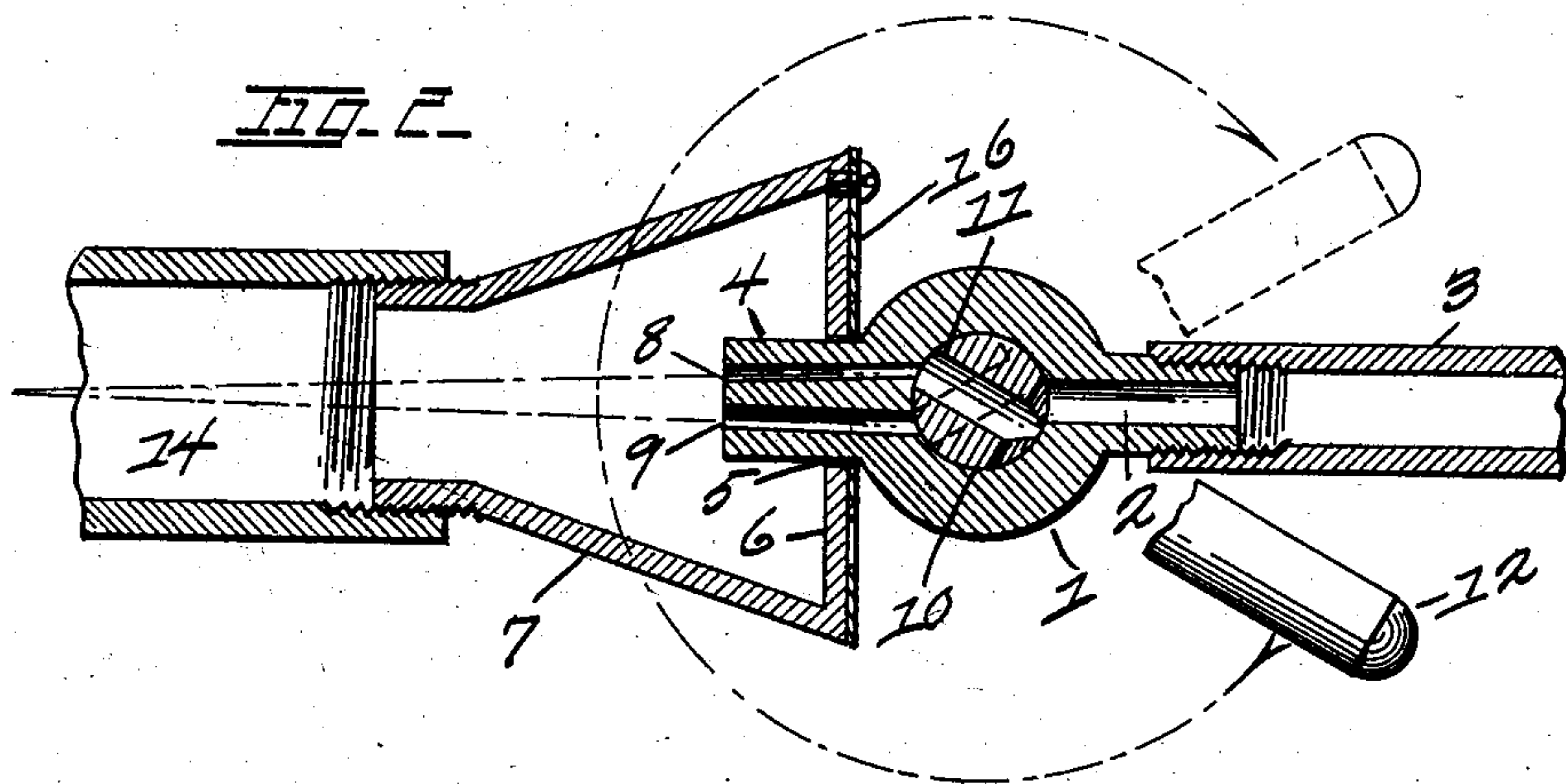
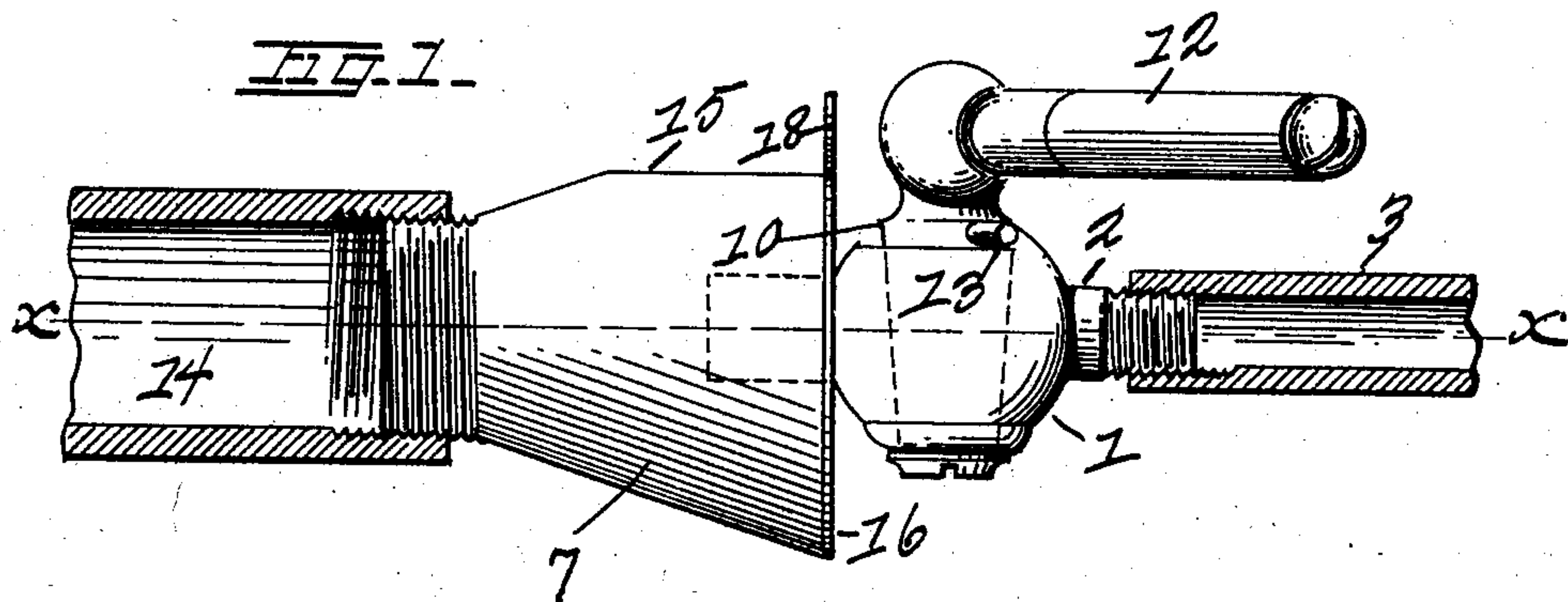


No. 720,134.

PATENTED FEB. 10, 1903.

W. E. GUESE.
CONVERTIBLE GAS MIXER.
APPLICATION FILED NOV. 19, 1902.

NO MODEL.



WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM E. GUESE, OF TOLEDO, OHIO, ASSIGNOR OF ONE-HALF TO GEORGE A. FOX, OF TOLEDO, OHIO.

CONVERTIBLE GAS-MIXER.

SPECIFICATION forming part of Letters Patent No. 720,134, dated February 10, 1903.

Application filed November 19, 1902. Serial No. 131,949. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. GUESE, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Convertible Gas-Mixers; 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.

My invention has reference to a convertible gas supplying and mixing device for vapor-burners, and is especially adapted for use upon gas-ranges, hot-plates, &c., in communities where both natural and artificial gas is employed as a heating agent for cooking purposes. Gas users have found it expedient to use both natural and artificial gas in gas-ranges and other gas-consuming apparatus, owing to the fact that the pressure of natural gas is often so greatly reduced that the same cannot be used for cooking purposes. In such an exigency the supply of natural gas is shut off and artificial gas is used in its stead, the pipe connections leading to the burners of the gas apparatus being arranged as a common carrier both gases, each of which may be used independently of the other. In constructing my invention I provide separate orifices for the injection of the gases into the mixer, an orifice of small diameter being arranged to carry natural gas and one of larger diameter to carry artificial gas. In a convertible device of this character it becomes necessary when changing from the use of one gas to that of the other to alter the size of the air-inlet openings into the mixer, the same being reduced for natural gas and enlarged for artificial gas. In my device the changing of the orifices and the alteration in the size of the mixer-openings are effected by the simple operation of the valve controlling the supply of gas to each burner. My device is so simple in arrangement that any one may operate the same without manipulation or the exercise of mechanical skill. I deem this requirement essential for the operation of a device of this character, the same being as a rule operated by persons possessing no knowledge whatever of simple mechanical operations.

The invention comprises certain novel fea-

tures of construction and the arrangement of the parts hereinafter shown, described, and claimed.

In the drawings, Figure 1 is a side elevation showing my invention. Fig. 2 is a section on line *xx*, Fig. 1. Fig. 3 is a face view of the mixer, showing the perforated plate in position to admit a maximum quantity of air. Fig. 4 is a like view showing the perforated plate in altered position to admit a minimum quantity of air.

Referring to the parts, 1 is a valve-body provided with a nipple 2 at one end for the attachment of a gas-supply pipe 3, which carries either natural or artificial gas. The forward end 4 of the valve-body projects through a central perforation 5 in the face 6 of a mixer 7.

8 and 9, respectively, are orifices or passages provided in the valve-body for natural and artificial gas.

10 is a tapered valve-plug having a transverse perforation 11, adapted to communicate with either of the orifices 8 or 9, and 12 is a handle by means of which the plug is turned in the valve-body.

13 is a pin projecting laterally from the plug 10, adapted to engage suitable shoulders upon the valve-body to arrest the movement of the plug. The extent of this movement is indicated by the arrow, Fig. 2, the valve-handle being movable in either direction. The orifices 8 and 9 converge in the valve-body, as shown, so that the gases upon being discharged from their respective orifices will be directed centrally of the pipe 14, leading the mixed air and gas to a burner.

The mixer, as shown, is preferably cone-shaped, having its upper portion cut away, as at 15, to permit the unobstructed movement of the valve-handle. The face 6 of the mixer is provided with equidistant arc-shaped perforations to admit air to the interior of the mixer-chamber, and in close contact with the face 6 is a sheet-metal plate or disk 16, provided with perforations coincident with the perforations in the mixer-face 6, and said plate is also provided with a central perforation 17, through which the forward end of the valve-body projects. The plate 16 has an angular portion thereof cut away, as shown

at 18, to permit engagement thereof by the valve-handle.

In Figs. 1 and 2 the parts are shown in position for burning natural gas, the same entering through the supply-pipe 3 and discharging through the smaller orifice 8, the perforation in the plug communicating with the orifice. The valve-plug and operating-handle being in the position shown, the plate 16 will assume the position in Fig. 4, the air-inlet openings into the mixer being reduced to admit a minimum quantity of air. Should the pressure of the natural gas be reduced so as to be insufficient for use, the valve-handle is operated as indicated by the arrow, Fig. 2. The natural-gas supply having been turned off and the artificial gas turned on, the latter will be discharged through the enlarged orifice 9, the passage through the plug having been altered, as shown in dotted lines, to communicate therewith. As the valve-handle is operated to change the orifices in its movement over the mixer the same will engage the portion 18 of the plate 16 and alter its position to that shown in Fig. 3. To operate the valve so as to shut off the supply of gas to the burner, the valve-handle is made to take a position at right angles to the longitudinal axis of the valve-body, so that the passage for gas through the valve-plug will be closed.

The value of my invention in its application to gas apparatus as a convertible device for using either natural or artificial gas will be apparent.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A convertible device for supplying natural or artificial gas to vapor-burners, comprising a mixer-chamber having perforations for the admission of air, a plate having coincident perforations adapted to register with

the perforations in the mixer-chamber, and a valve projecting into the mixer-chamber having independent orifices for natural and artificial gas, and provided with an operating-handle adapted to engage the aforesaid plate, substantially as described.

2. A convertible device for supplying natural and artificial gas to vapor-burners, comprising a mixer having perforations for the admission of air, a plate having coincident perforations adapted to register with the perforations in the mixer, a valve projecting into the mixer having two separate orifices of small and large diameter respectively for natural and artificial gas, and a handle for operating said valve adapted to engage the perforated plate on the mixer, substantially as described.

3. In a convertible gas supplying and mixing device for vapor-burners, a mixer having a perforated flat face, a rotatable plate having coincident perforations to register with the perforations in the mixer-face and having an angular portion thereof cut away, in combination with a valve-body provided with converging orifices of small and large diameter respectively for natural and artificial gas, a plug fitted within the valve-body having a transverse perforation to communicate with either of the orifices therein, a handle for operating the plug, and a stop arranged upon the plug adapted to engage shoulders upon the valve-body to insure a movement of the plug-handle to engage the cut-away portion of the perforated mixer-plate, when the valve is operated to change the orifices, as shown and described.

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

WILLIAM E. GUESE.

Witnesses:

CARL H. KELLER,
WILLIAM A. CASE.