

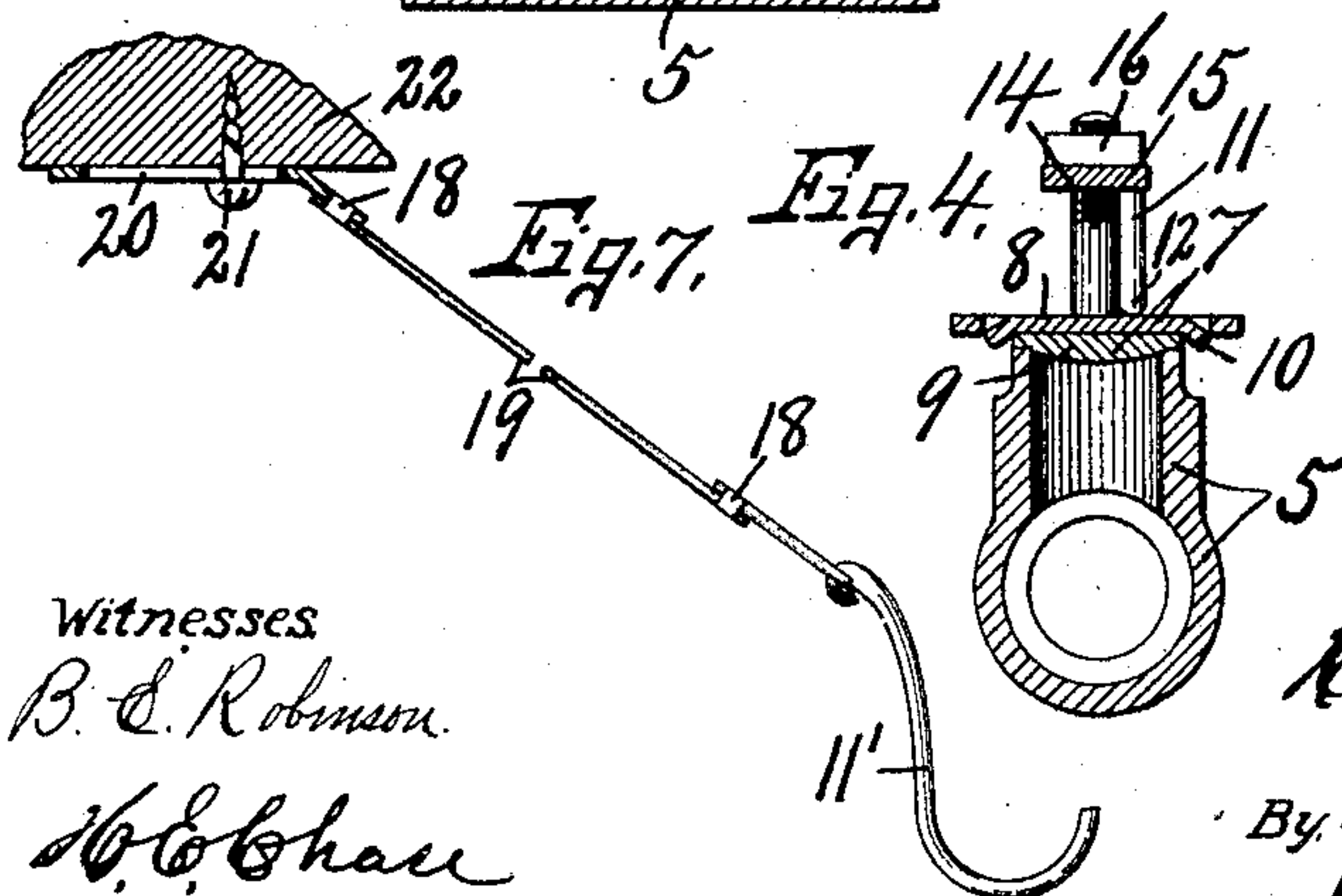
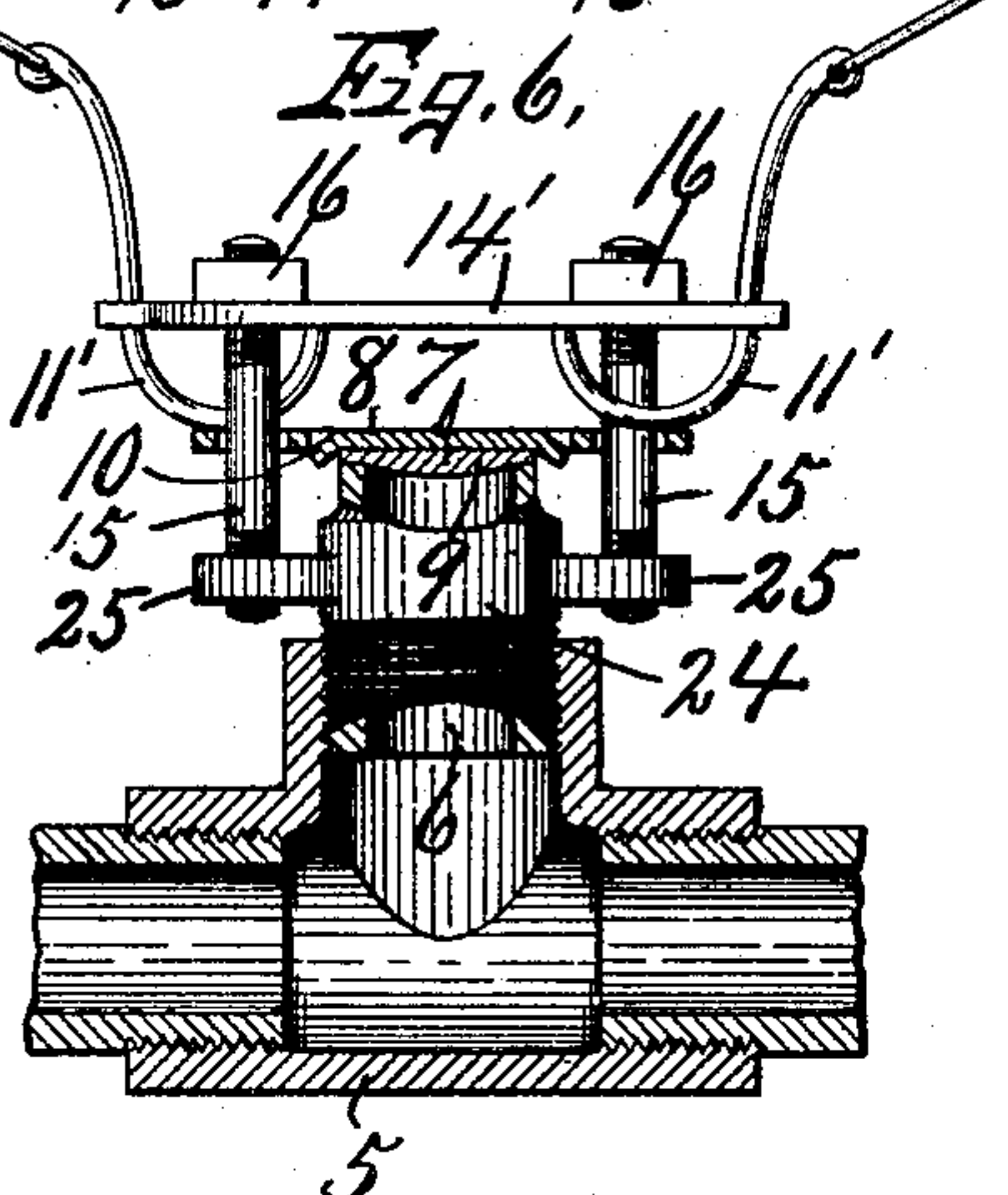
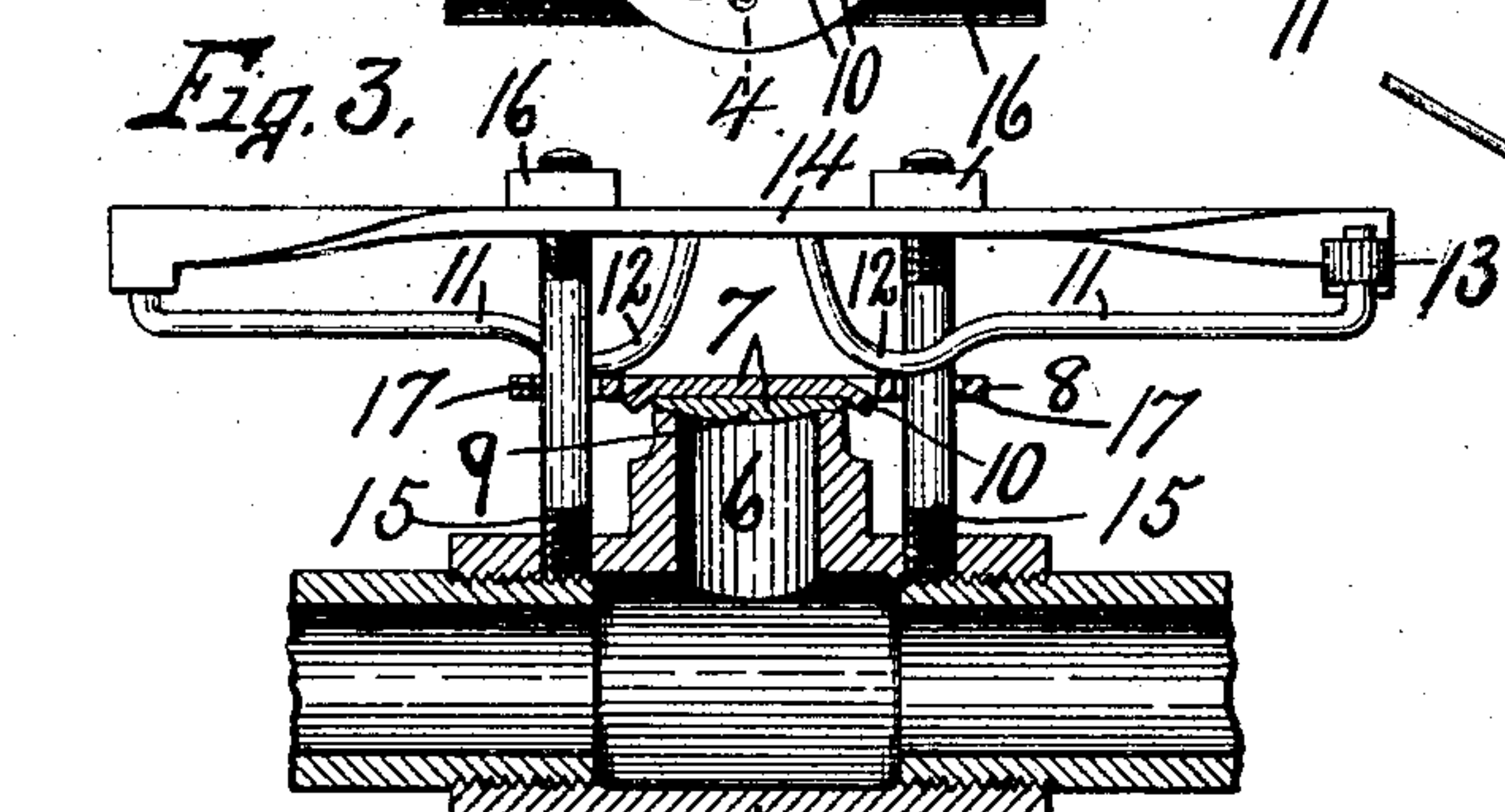
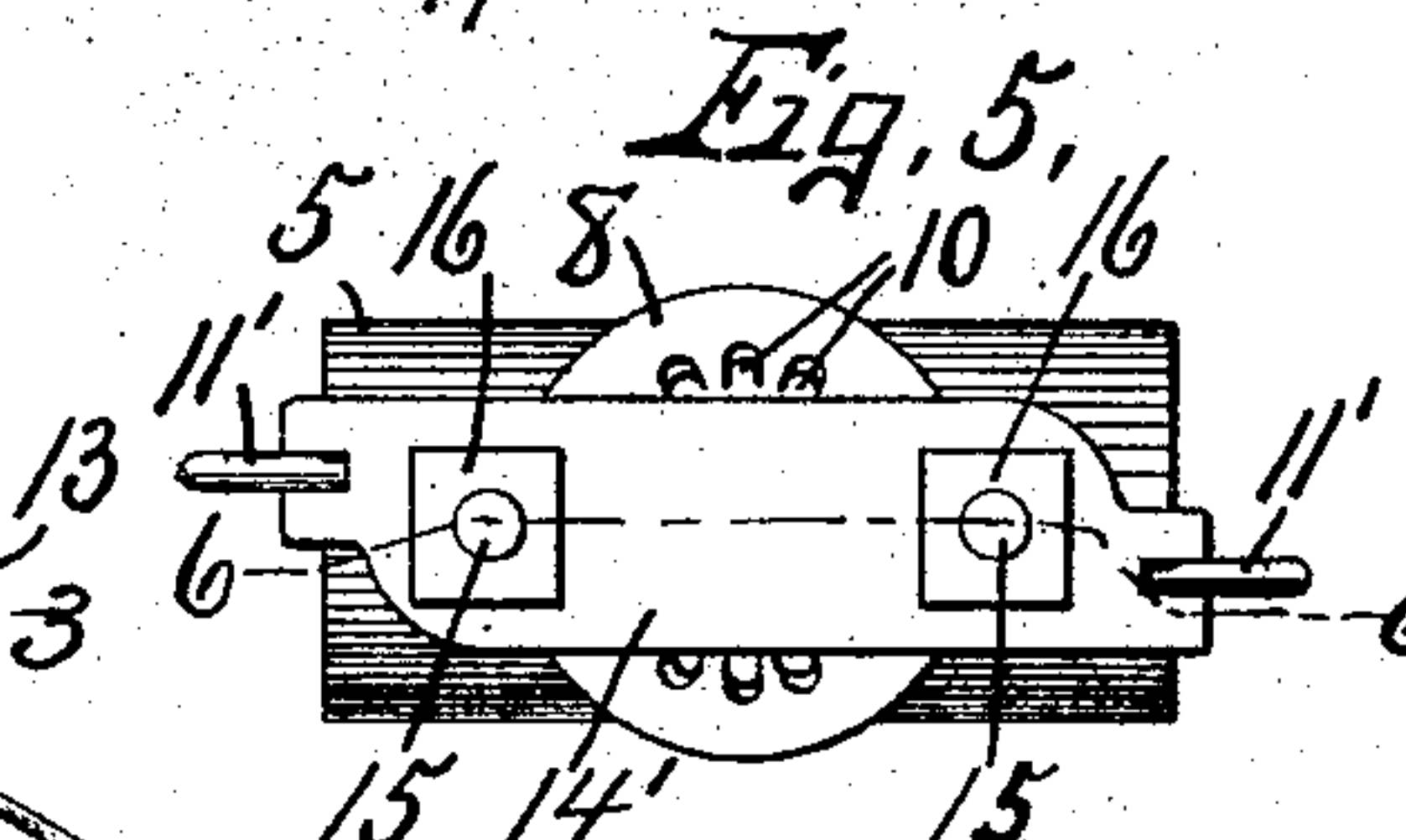
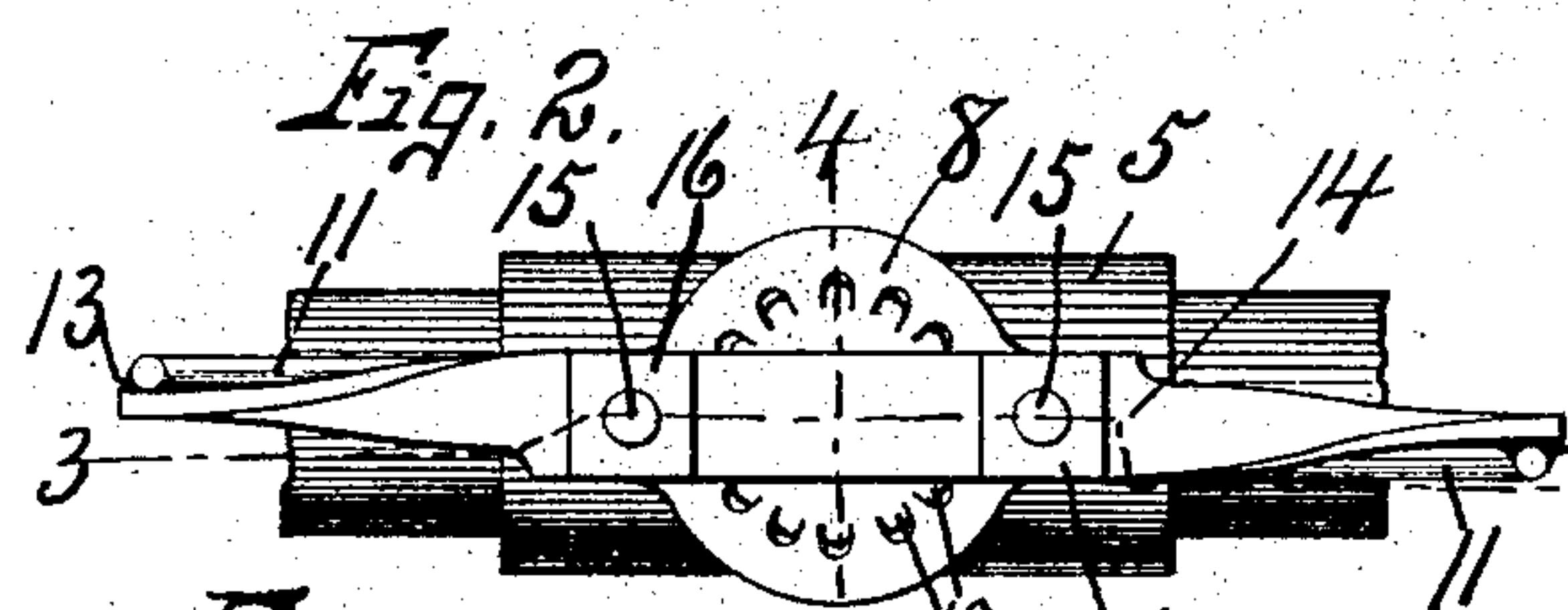
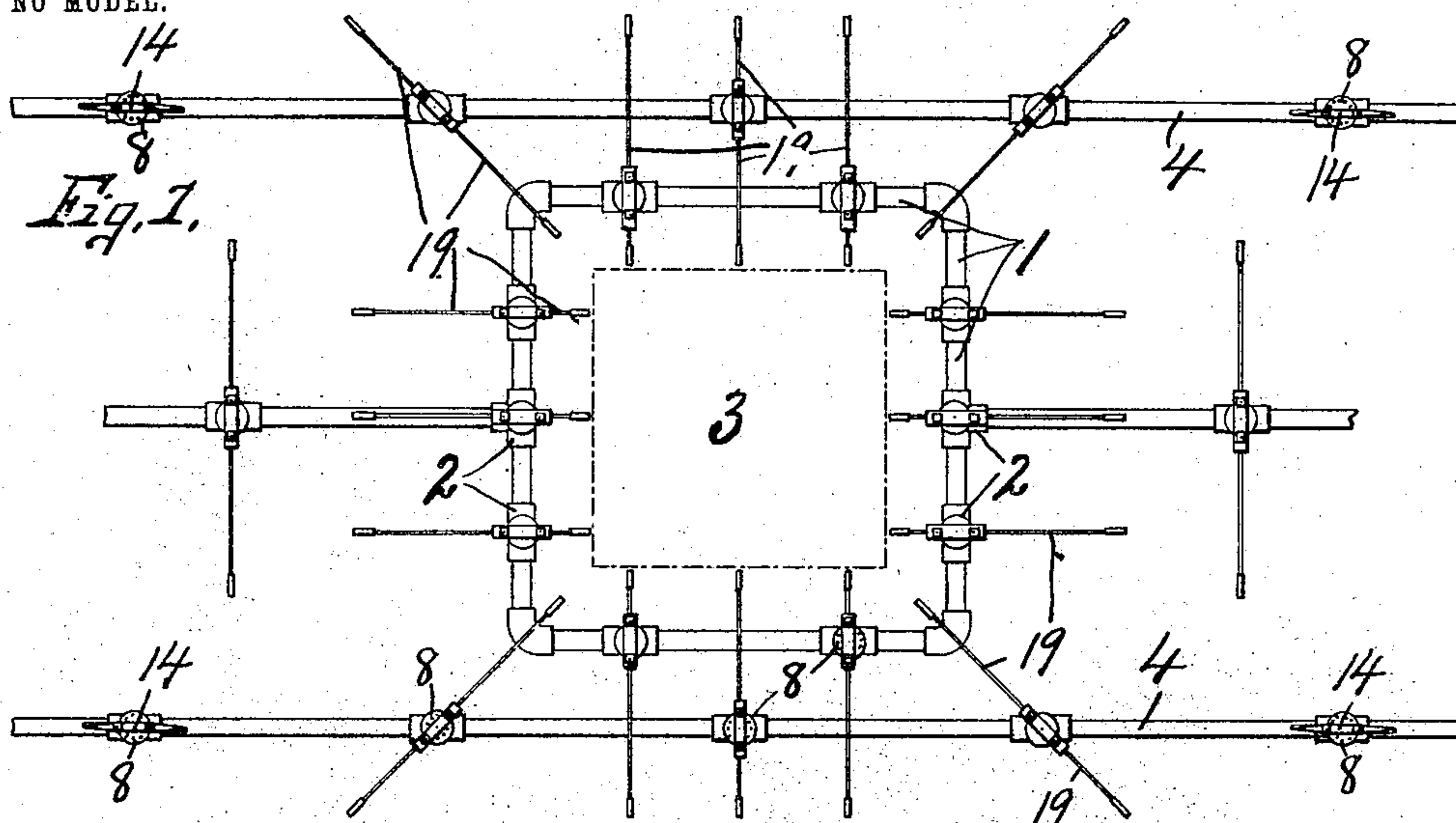
No. 764,743.

PATENTED JULY 12, 1904.

H. W. MARTIN.  
AUTOMATIC FIRE EXTINGUISHER.

APPLICATION FILED NOV. 12, 1903.

NO MODEL.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 764,743, dated July 12, 1904.

Application filed November 12, 1903. Serial No. 180,825. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN W. MARTIN, of Ilion, in the county of Herkimer, in the State of New York, have invented new and useful  
 5 Improvements in Automatic Fire-Extinguishers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in  
 10 automatic fire-extinguishers, and refers more particularly to that class in which the discharge-opening is closed by a suitable stopper which is normally held in its closed position by movable detents and fusible connections  
 15 exterior to the pipe-fitting in which the discharge-opening is formed.

The primary object of this invention is to provide a tiltable stopper or closure for the discharge-opening and to hold the same by  
 20 detents engaged therewith at opposite or different sides of the opening, said detents being held in their operative positions by fusible connections also located at different sides of the openings either in proximity to or remote  
 25 from the sprinkler, so that in case of fire, which might operate to fuse one of the connections and release the corresponding detent, the water in the distributing-pipe will automatically tilt the stopper to expose the side of  
 30 the opening toward the fire, and thereby direct the water where needed without opening the other side, and thus prevent the water from doing any serious damage where the fire does not exist.

35 Other objects will appear in the following description.

In the drawings, Figure 1 is a top plan of a portion of a water-distributing system equipped with my invention, showing particularly its application to the protection of an  
 40 elevator-shaft or stair-well. Fig. 2 is a top plan of one of the detached sprinklers. Figs. 3 and 4 are sectional views taken, respectively, on lines 3-3 and 4-4, Fig. 2. Fig. 5 is a top  
 45 plan of a modified form of my invention. Fig. 6 is a sectional view taken on line 6-6, Fig. 5. Fig. 7 is a detail view of one of the connec-

tions seen in Figs. 5 and 6 for holding the stopper in operative position.

Similar reference characters indicate corresponding parts in all the views.

In order to demonstrate the practicability of my invention, I have shown a portion of a water-distributing system, which consists in  
 this instance of a series of pipes or nipples 1  
 55 and fittings 2, connected together to form a rectangular closure which surrounds an elevator-shaft, as 3, and additional conduits 4, which are here shown as disposed at opposite sides  
 of the elevator-shaft and provided with suitable fittings to receive the sprinklers presently described. 60

The distributing system which surrounds the elevator-shaft is usually supplied with water from a different source from that which  
 65 supplies the conduits 4; but it is evident that they may both be supplied from the same source, if desired.

It is well known that elevator-shafts and stair-wells afford a draft for any fire which  
 70 may have originated in the building and that the flame is often concentrated at this point, thereby cutting off the exit from the occupants of the building and frequently resulting in  
 great loss of life, and in order that a sufficient  
 75 quantity of water may be directed into the shaft or well in case of fire it is preferable to have this system separate from the general distributing system of the building. Therefore it is preferably connected to a separate  
 80 source of supply independent from that which feeds the main system.

The sprinklers employed in each system are substantially the same, and each consists of a  
 T 5, having a discharge-opening 6, which is  
 85 normally closed by a stopper or cap 7. This cap preferably consists of a flat metal plate 8 and a suitable packing 9, which is interposed between the plate 8 and end face of the walls  
 of the discharge-opening 6, said plate being  
 90 formed with a circular row of deflecting-shoulders 10, surrounding the outer end of the discharge-opening 6 and packing 9 for spreading the water laterally and downwardly when



the stopper is released or tilted. This stopper or cap 7 is normally held in its closed position by two or more movable detents 11, in this instance two, which engage the top face of the plate at opposite sides of the discharge-opening 6, the inner or engaging ends 12 being preferably cam-shaped, and their outer ends extend in opposite directions from the plate and are connected at 13 by soft solder or other fusible material to opposite ends of a horizontally-disposed bar 14, said bar extending across the outer end of the discharge-opening 6 and cap 7, and its intermediate portion is clamped to the T 5 by bolts or studs 15 and nuts 16, the bolts or studs being preferably screwed into the T at opposite sides of the stem or branch of the T and extend upwardly through openings 17 in the ends of the plate 8, thus guiding the cap or stopper 7 and holding it from lateral displacement. The cam portions 12 of the detents 11 extend inwardly and upwardly and are engaged by the lower face of the bar 14, so that when the bar is clamped in place by the nuts 16 the cam portions 12 are clamped between said bar and the adjacent face of the plate 8, and thus operate to hold the cap or stopper 7 in its closed position.

Although I have described the outer ends of the detents 11 as secured to the outer ends of the bar 14 by a material which is fusible under a low degree of temperature, it is obvious that these ends may be extended indefinitely in opposite directions away from the discharge-opening and merely secured to or connected to portions of the building or other supports—as, for instance, to the ceiling of the building—and in Figs. 5, 6, and 7 I have shown detents 11', which are connected by soft solder, as 18, or other material which is fusible at a low temperature to anchor rods or braces 19 and 20, one of the latter, as 20, being secured at 21 to a portion of the ceiling 22 of a building. When the detents 11' are thus secured the clamping-bar, as 14', is preferably shorter, but operates in exactly the same manner as that seen in Figs. 2 to 4, inclusive, for forcing the detents 11' against the upper face of the cap 7 to normally hold it in its closed position; but instead of mounting the cap directly against the outer end of the stem of the T I have shown it as engaged with the outer end of a bushing 24, which is inserted into the key and is provided with ears 25 for receiving the screw studs or bolts 15 which hold the plate 14 in operative position.

Suppose now that a fire exists in the building at one side of one of the sprinklers sufficient to melt one of the fusible connections between one of the detents 11 and the adjacent end of the arm 14. In such case this detent 11 would be immediately released and the pressure of the water against the cap or

closure 7 would automatically tilt or open the side of the cap adjacent to the released detent and nearest to the fire. Therefore the water would escape through the open side of the outlet against the lower face of the plate or cap 7 and deflecting-shoulders 10 and would therefore be thrown toward and upon the fire, whereas the other side would remain closed and prevent the escape of the water in the opposite direction. This is an extremely important feature of my invention, owing to the fact that the water is automatically thrown in the direction of the fire and is prevented from being discharged in the opposite direction in case the heat is insufficient to fuse the other detent connection, and much of the damage which is done by water is thereby obviated. In like manner should one of the fusible connections which holds one of the detents 11' in operative position become melted said detent 11' would immediately be released and the cap 7 would open or tilt in that direction, and therefore the water would be thrown toward the fire.

It is apparent that the bar or clamping-plate 14 may be extended indefinitely in opposite directions, so that the fused connection between the detents 11 and said bar may be located in proximity to or remote from the discharge-opening of the sprinkler; but when the fusible connections are located a considerable distance from the sprinkler the devices seen in Figs. 5, 6, and 7 are preferably used.

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

1. In an automatic fire-extinguisher, a water-containing pipe having a discharge-passage, and mechanism for closing the passage including fusible connections at different sides of the passage whereby the fusing of one of the connections causes a partial release of the mechanism to open a part of the passage nearest the fused connection.

2. In an automatic fire-extinguisher, a water-containing pipe having a discharge-opening, a closure for the opening tiltable to open different sides of the passage, detents at different sides of the passage to hold the closure in its closed position, and fusible connections operating to hold the detents in operative position, the fusing of one of the connections causing the release of its detent and permitting the water to tilt the closure and open the passage at the side nearest the fused connection.

3. In an automatic fire-extinguisher, a water-containing pipe having a discharge-opening, a closure for the opening tiltable to open different sides of the passage, separate devices operatively connected to engage the closure at different sides of the passage, said devices including fusible ties, the fusing of

one tie releasing the adjacent side of the closure, and the water tilting the closure which latter deflects the water laterally from the side of the passage toward the fused tie.

5 4. In an automatic fire-extinguisher, the combination with a pipe having a discharge-opening, of a tiltable closure for the opening, and separate fusible ties at different sides of

the opening operatively connected to hold the closure in its closed position.

In witness whereof I have hereunto set my hand this 5th day of November, 1903.

HERMAN W. MARTIN.

Witnesses:

H. E. CHASE,

MILDRED M. NOTT.