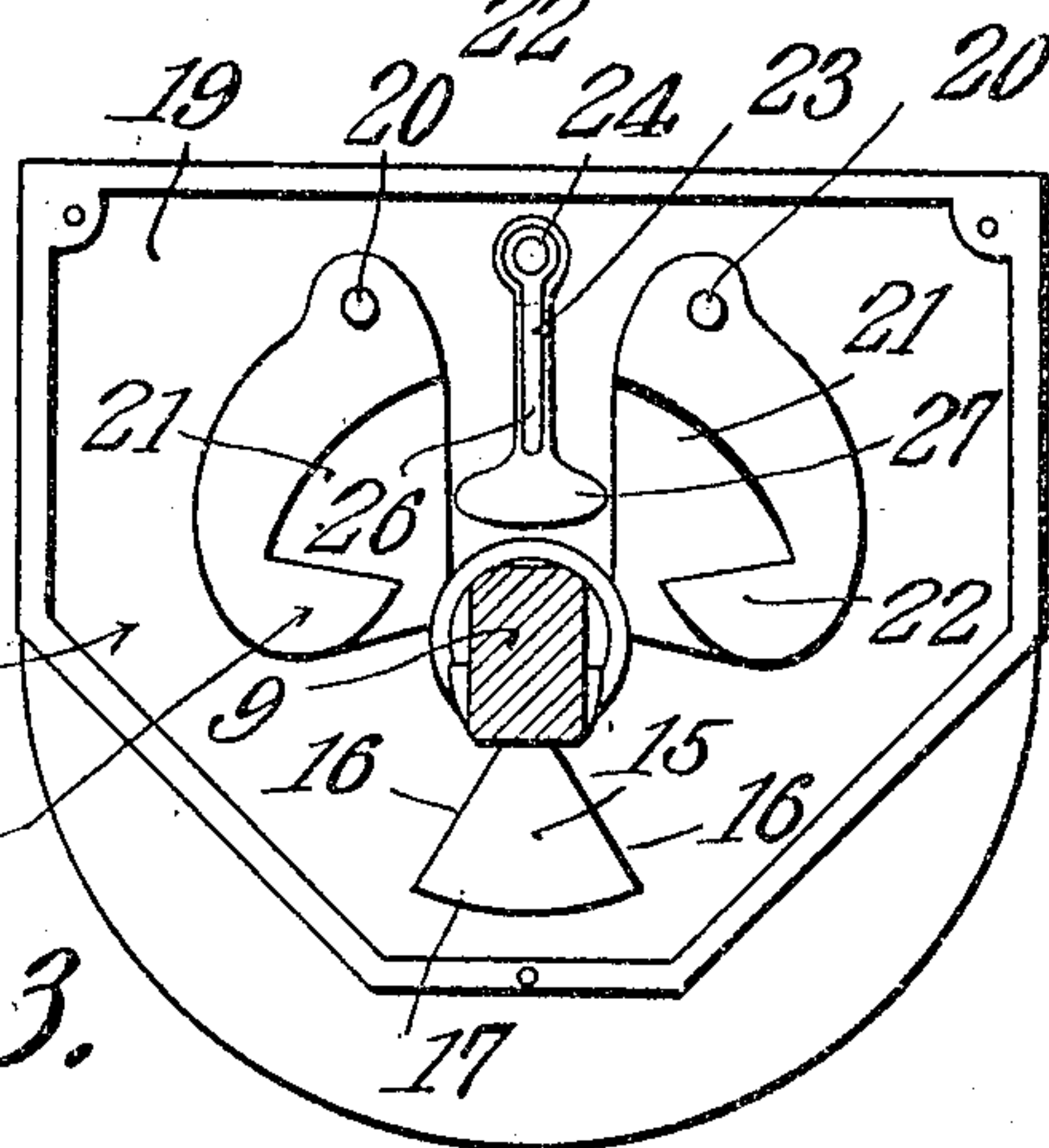
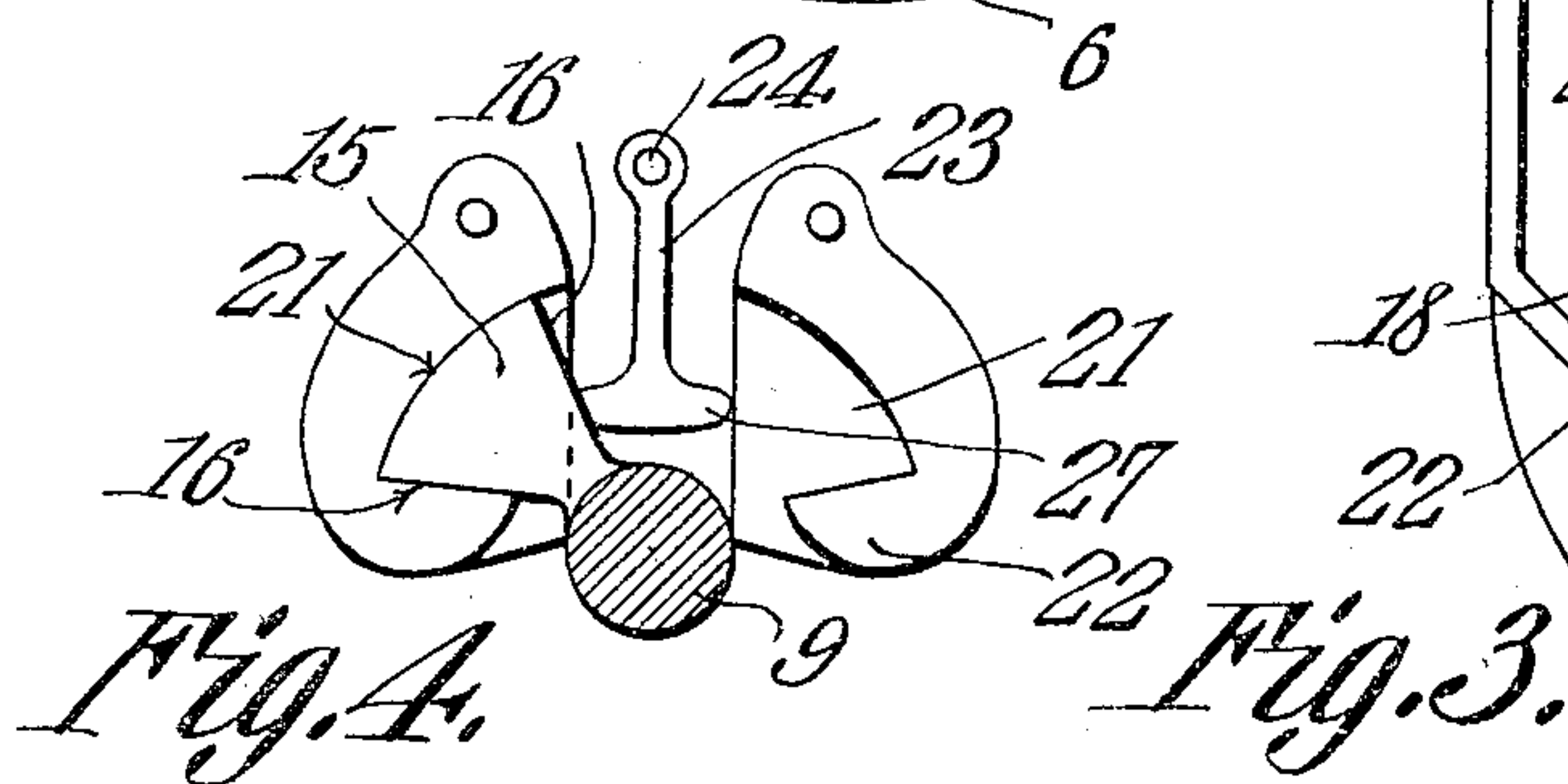
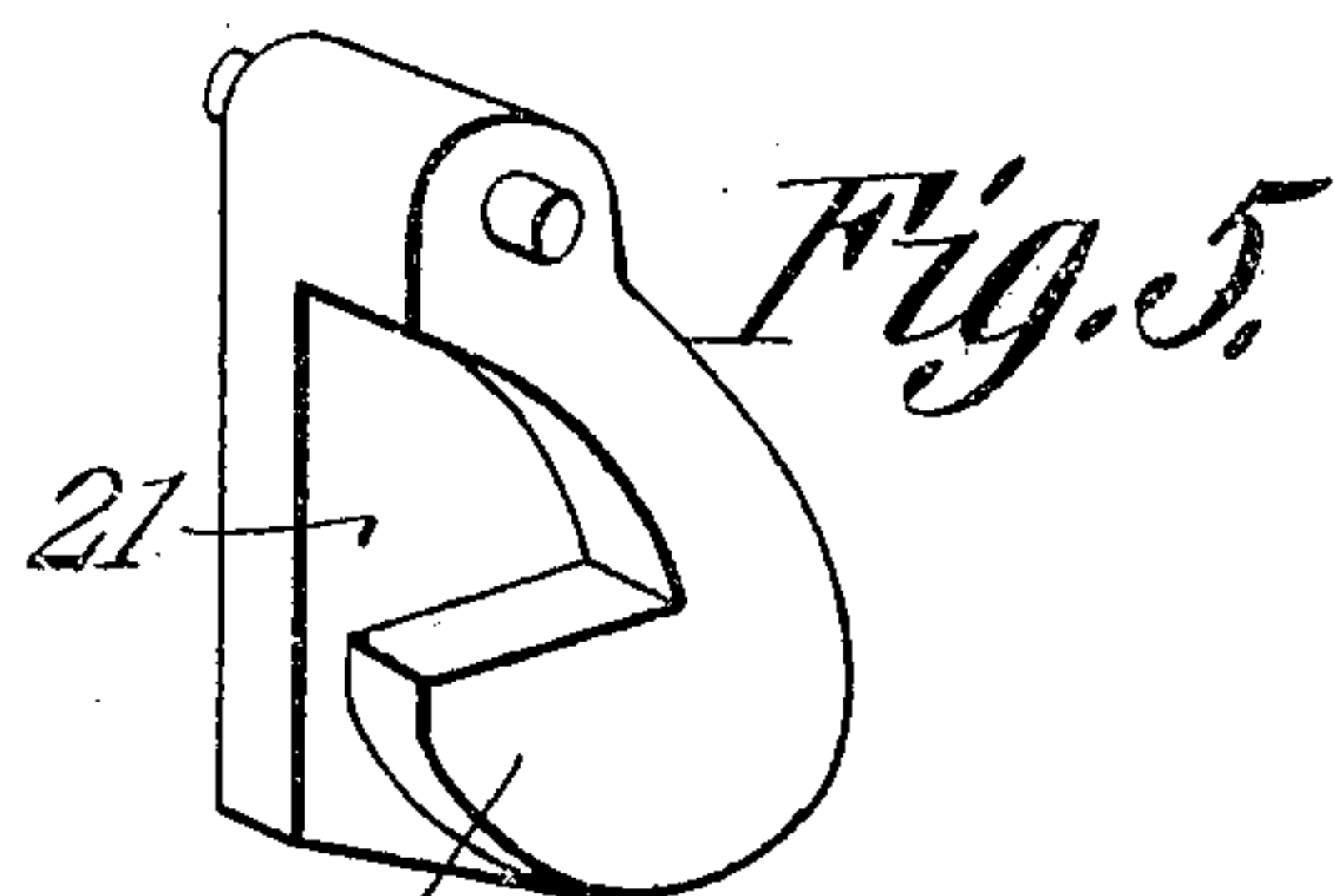
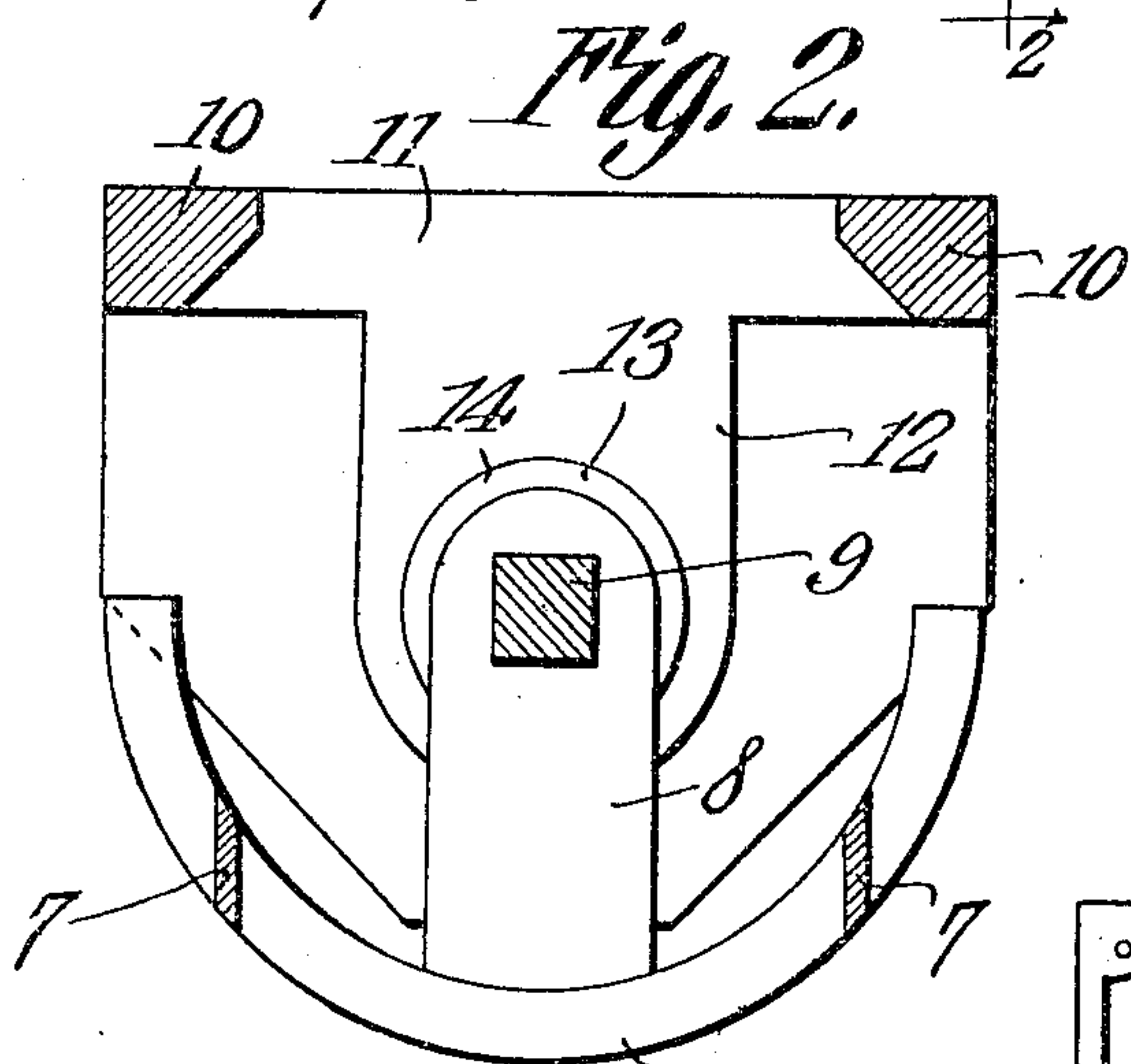
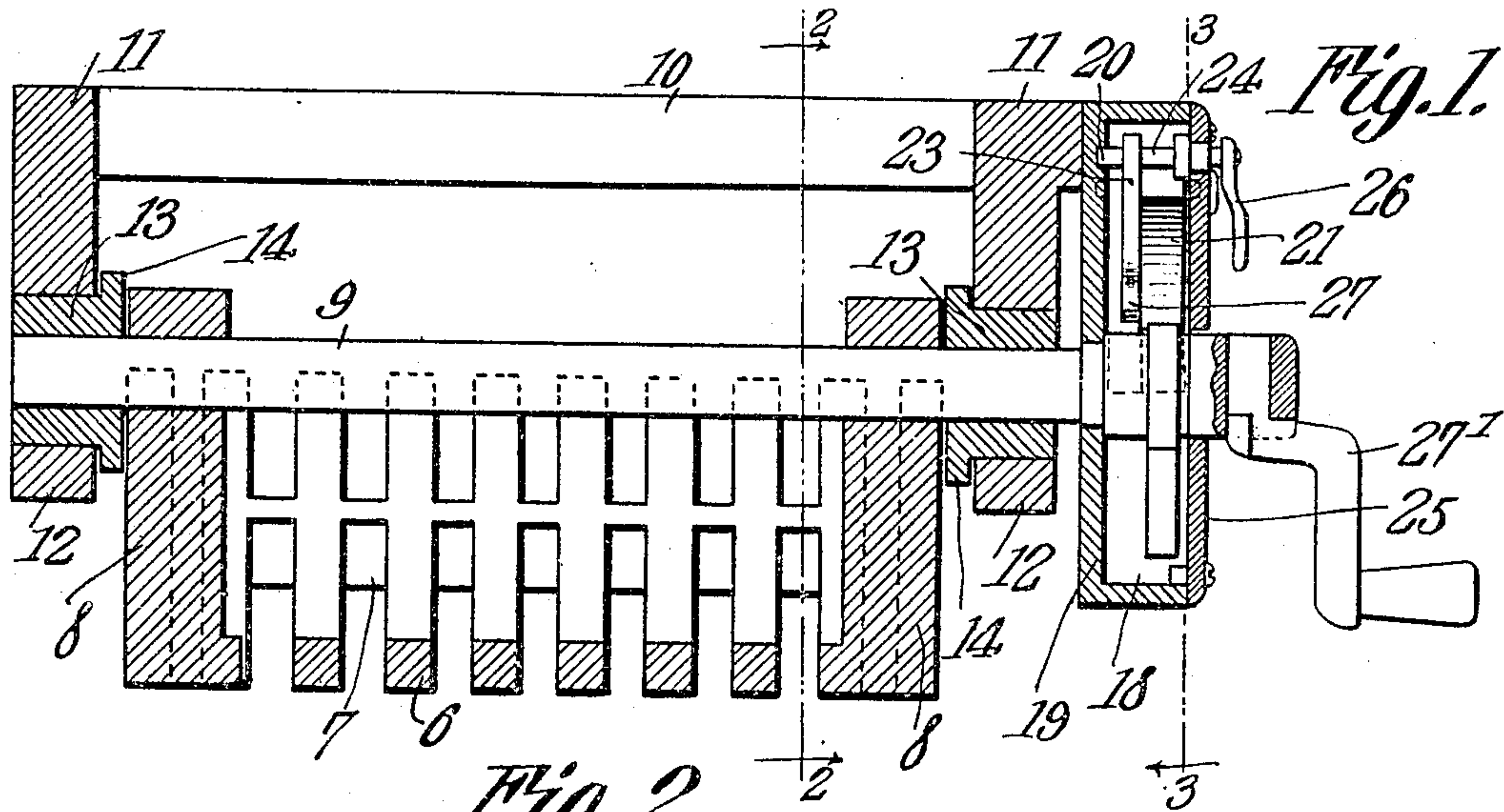


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 ROTARY GRATE.
 APPLICATION FILED FEB. 1, 1909.

927,730.

Patented July 13, 1909.



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THEODORE KAUFMAN, OF ANNA, ILLINOIS.

ROTARY GRATE.

No. 927,730.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed February 1, 1909. Serial No. 475,411.

To all whom it may concern:

Be it known that I, THEODORE KAUFMAN, a citizen of the United States, residing at Anna, in the county of Union and State of Illinois, have invented a new and useful Rotary Grate, of which the following is a specification.

The present invention is designed to provide a rotary grate which may be turned one complete revolution, and also a grate of this kind which may be swung to different positions, and locked in such positions.

The invention also has for its object to provide improved means for operating the grate as stated, and also to provide a grate which is characterized by simplicity of structure, and which works smooth and easy.

With the foregoing objects in view, the invention consists in a novel construction and arrangement of parts to be hereinafter described and claimed, reference being had to the drawing hereto annexed, in which:

Figure 1 is a central longitudinal sectional view of the grate, and its support and operating means. Fig. 2 is a cross section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1 showing the grate operating and locking means in elevation. Fig. 4 is a view similar to the preceding showing the parts in another position. Fig. 5 is a perspective view of one of the latches hereinafter referred to.

The grate is concave, or of a basket form as is clearly shown in Fig. 2 of the drawings, the bars of the grate being indicated by the reference numeral 6. The grate is formed in one piece, the grate bars being spaced apart and connected by the cross-bar 7. The ends of the grate are formed with hangers 8 having polygonal or square openings to receive a shaft 9 on which the grate is hung, the shape of said shaft in cross section corresponding to the shape of the openings in the hangers 8, so that the grate may rotate with the shaft.

The support for the grate and its shaft comprises an open frame consisting of longitudinal bars 10, and end bars 11. From the end bars, depend hangers 12 provided with alined openings in which are rotatably mounted bushings 13 through which the shaft 9 extends, said bushings being necessary for the rotation of the shaft, for the reason that the same is angular in cross section as already described. The bushings are

formed at one end with annular flanges 14 which engage the inner faces of the hangers 12, and the grate fits between these ends of the bushings, whereby it is held against lengthwise movement on the shaft 9. The flanges 14 also prevent the bushings from slipping out of the openings in the hangers 12.

The grate and its associate parts, herein described, can be quickly assembled, and by the manner in which the parts are mounted, the grate is made to work smooth and easy.

In order that the shaft 9 may be rotated to dump the grate, as well as to hold the same in different positions, the following mechanism is employed: From the shaft 9 projects a wing 15 having diverging opposite side edges 16 and a convex or curved edge at its outer end. The wing is thus in the shape of a cam, and it is for a purpose to be presently described. The wing as well as the other parts operating therewith, to be presently described, are inclosed in a housing located at one end of the supporting frame of the grate, this housing being indicated by the reference numeral 18. To the rear wall 19 of the housing is pivoted as indicated at 20, a pair of plates 21 having a portion of their outer faces shaped to form oppositely presented hooks 22 which are located on opposite sides of the shaft 9, in the path of the wing 15, the hook-shaped portions of the plates lying in the same plane as the wing. The hooks serve as latches for locking the shaft, and two of such hooks are provided in order that the shaft may be locked when it is swung either to the right or to the left. I therefore provide means for locking the grate in two positions. Between the plates 21 is mounted a latch releasing member comprising an arm 23 mounted on a rock shaft 24 having its bearings in the rear wall 19 of the casing 18, and the front wall 25 thereof, said shaft extending to the outside of the last-mentioned wall, and being fitted with an operating handle 26. The arm 23 has a terminal enlargement 27, and works between the plates 21 to the rear of the plane of the hook-shaped portions 22 thereof and it is out of the path of the wing 15.

The shaft 9 is provided with a removable crank handle 27', and the front wall 25 or cover of the housing is removable so that access to the mechanism inclosed therein may be had.

By the mechanism herein described, it will be seen, that when the shaft 9 is rotated in either direction, the curved surface 17 of the wing, upon engaging the first one of the 5 hooks 22 encountered, swings the same to one side and clears it, and when the next hook is reached, it drops thereinto as shown in Fig. 4, whereby the shaft will be locked against rotating any further in this direc- 10 tion, and the grate will be held in tilted position. It will be noted from Fig. 4 that the curved surface 17 of the wing 15 conforms to the inner surface of the shank of the hook, and is adapted to snugly fit there- 15 against, and the sides 16 fit the bill of the hooks. By thus shaping the parts, it will be seen that the shaft will be securely locked and the grate will be effectually prevented from dropping back until the hook is swung 20 clear of the wing, which is done by operating the rock shaft 24 through the handle 26, to engage the end 27 of the arm 23 with the edge of the plate, whereupon the grate drops to its normal position. By thus operating 25 the arm 23, it will be seen that the grate can be turned to make one complete revolution, thus dumping all fire ashes and clinkers. By swinging the grate either to the right or the left, and locking the same, as already de- 30 scribed, the clinkers can be worked out without dumping the entire contents of the grate, thus saving the fire.

The grate herein described will burn wood, hard or soft coal, or coke, and it can 35 be built to fit large or small furnaces, bake ovens, and all kinds of cooking stoves and ranges.

What is claimed is:

1. In a grate, a rotary shaft, a grate mount- 40 ed thereon, a wing projecting from the shaft, pivoted hook-shaped latches mounted independently on opposite sides of the shaft and located in the path of the wing, and means for disengaging the hooks.

45 2. In a grate, a rotary shaft, a grate mount- ed thereon, hook-shaped latches pivotally

and independently mounted on opposite sides of the shaft, a wing projecting from the shaft, said wing being shaped to swing one of the hooks to clear the same, and to 50 be engaged by the other hook, when swung in either direction, and means for disengaging the hooks.

3. In a grate, a rotary shaft, a grate mount- ed thereon, a wing projecting from the shaft, 55 latches comprising plates pivotally mounted on opposite sides of the shaft, and having one of their faces shaped to form hooks which are in the path of the wing, and a latch releasing member working between the 60 plates outside the plane of the hooks, and engageable with said plates for swinging the same clear of the wing.

4. In a grate, a rotary shaft, a grate mount- ed thereon, a cam-shaped wing projecting 65 from the shaft, latches comprising plates pivotally mounted on opposite sides of the shaft, and having one of their faces shaped to form hooks, which are in the path of the wing, and a latch releasing member working 70 between the plates outside the plane of the hooks, and engageable with said plates for swinging the same clear of the wing.

5. In a grate, a rotary shaft, a grate mount- ed thereon, hook-shaped latches pivotally 75 mounted on opposite sides of the shaft, a wing projecting from the shaft, said wing being shaped to swing one of the hooks to clear the same, and to be engaged by the other hook, when swung in either direction, 80 and also having its outer edge shaped to fit the shank of the hook, and its side edges to fit the bill thereof, and means for disengaging the hooks.

In testimony that I claim the foregoing as 85 my own, I have hereto affixed my signature in the presence of two witnesses.

THEODORE KAUFMAN.

Witnesses:

C. F. WINTERS,
EDNA MAY GRAY.