

(No Model.)

H. ELLIOT.
SWITCH STAND.

No. 590,015.

Patented Sept. 14, 1897.

Fig. I.

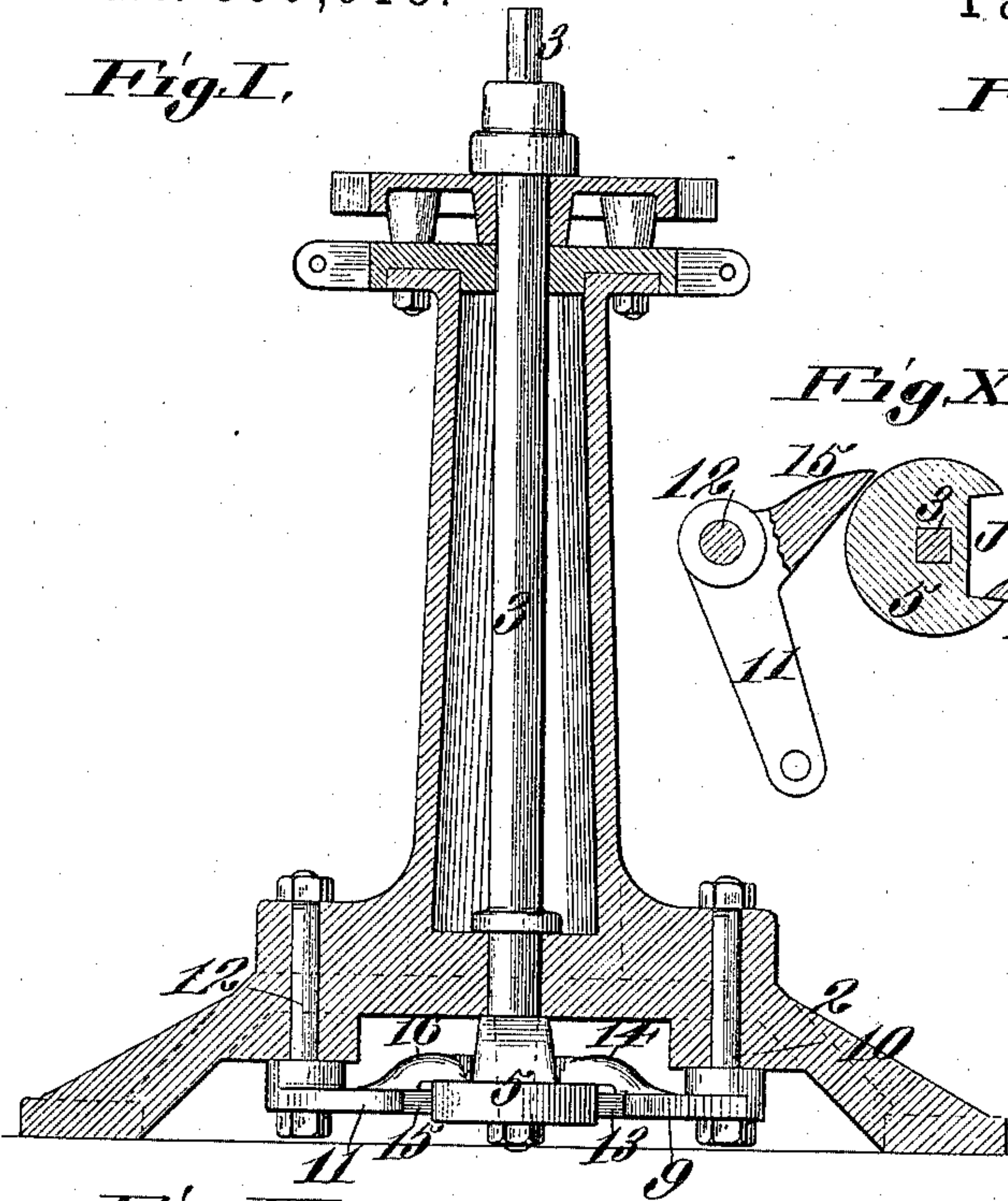


Fig. II.

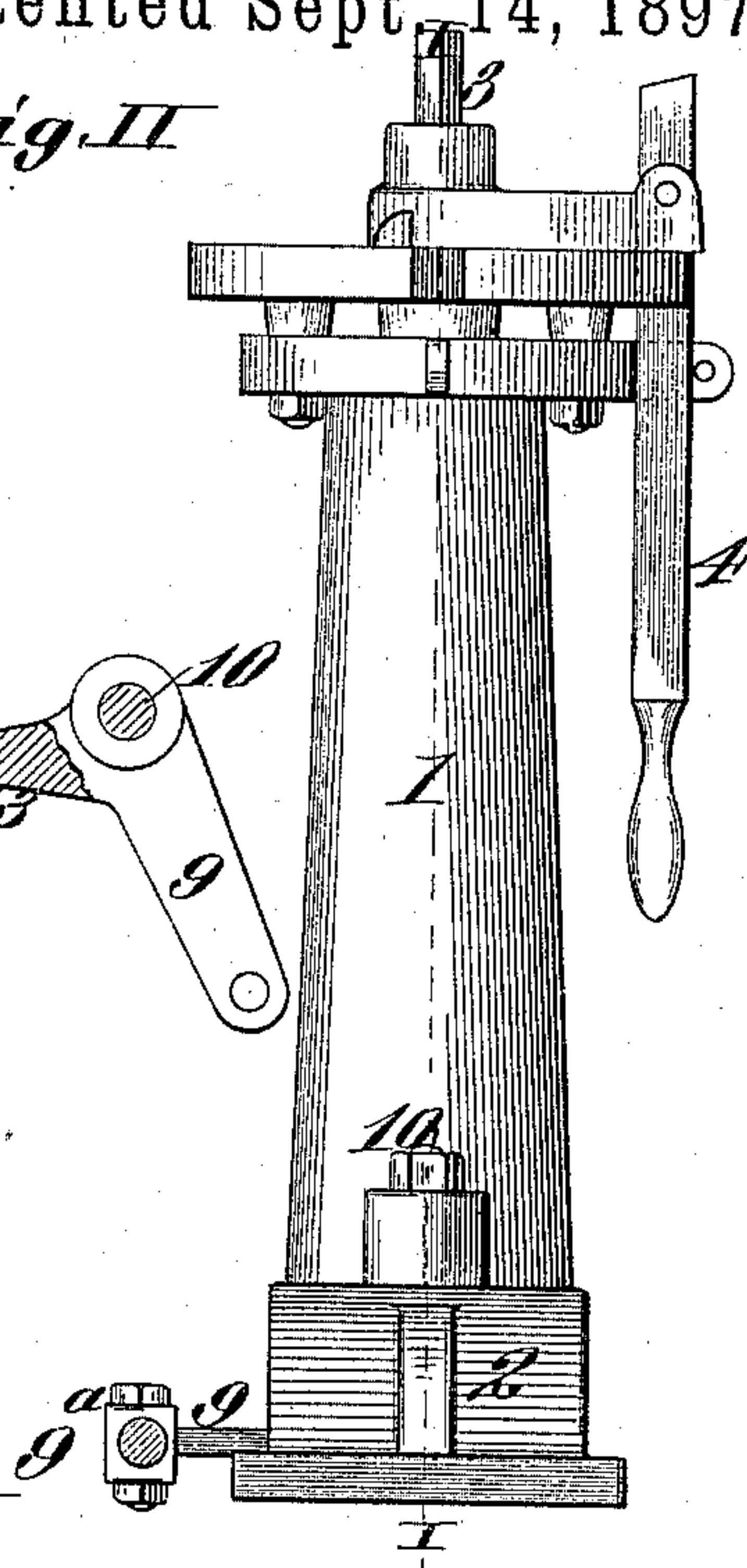


Fig. X.

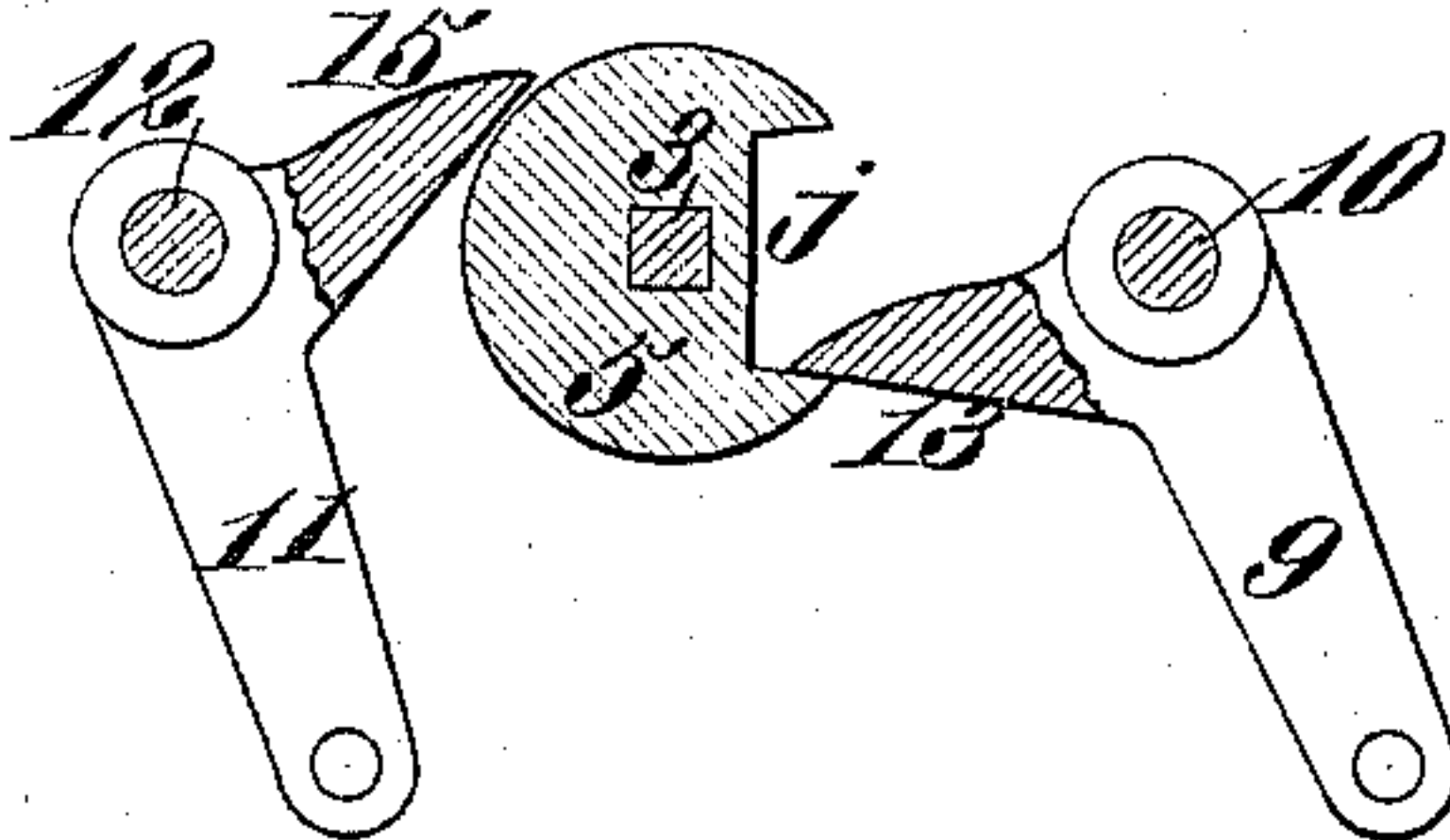


Fig. III.

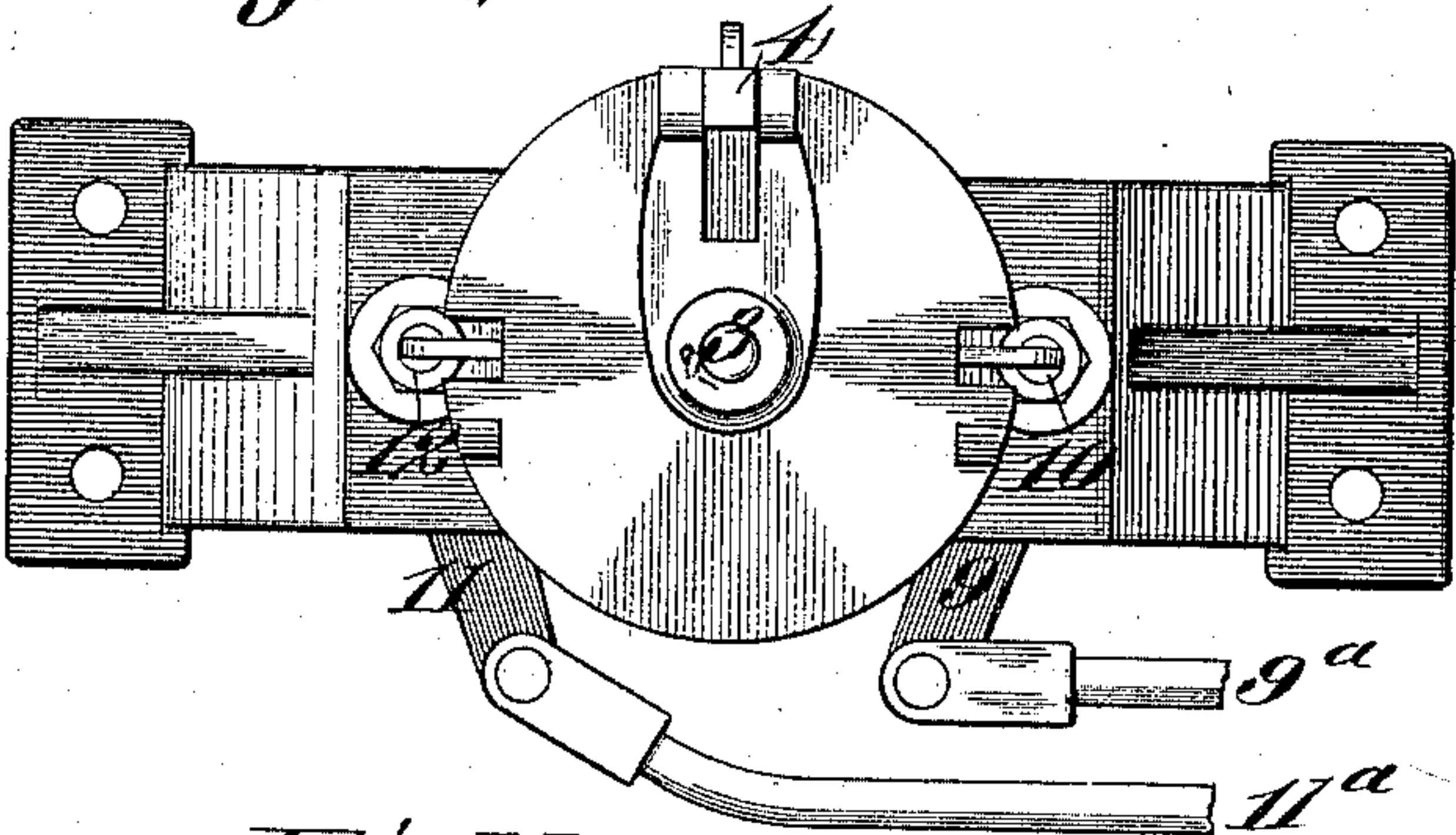


Fig. IV.

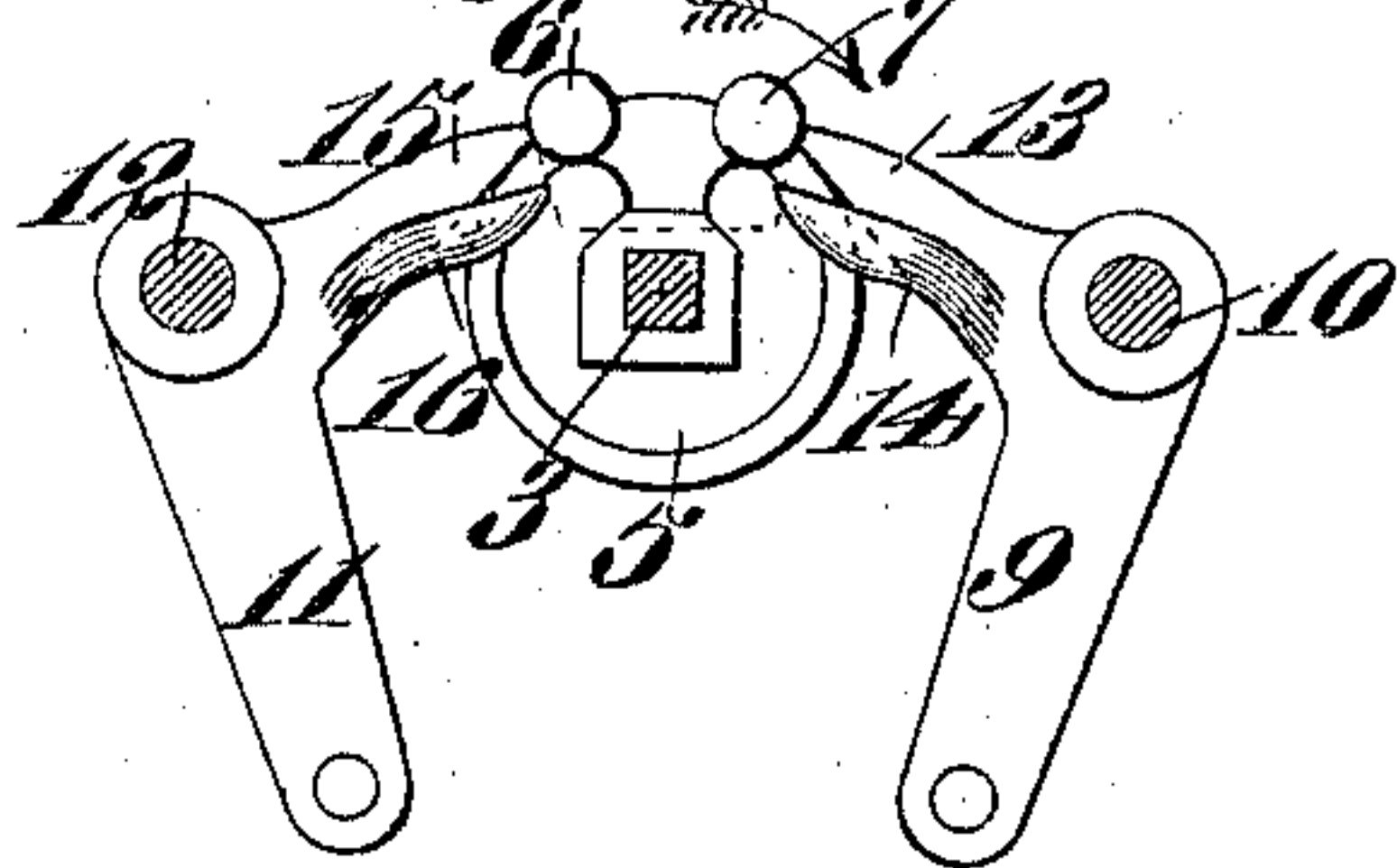


Fig. V.

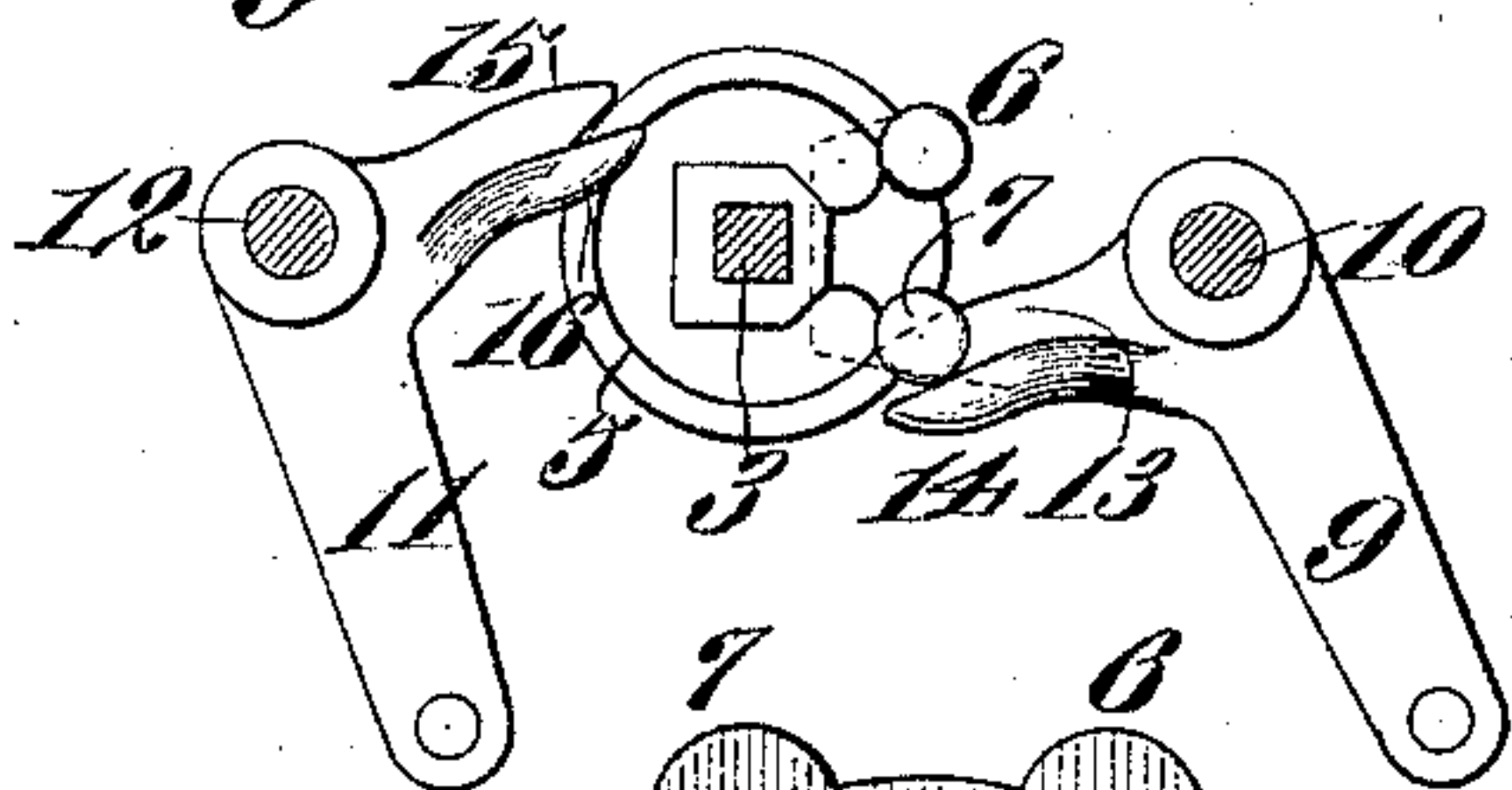


Fig. VI.

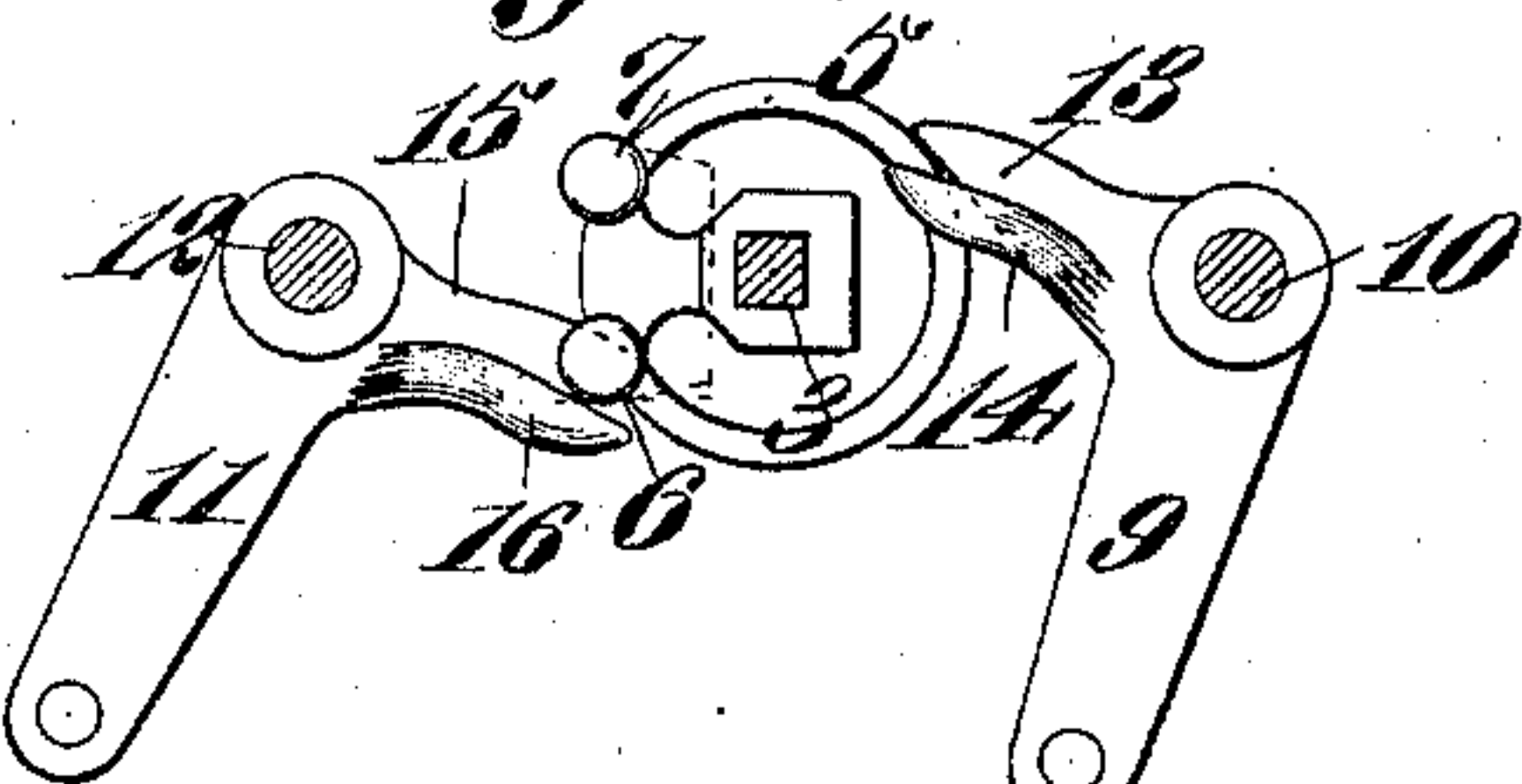


Fig. VII.

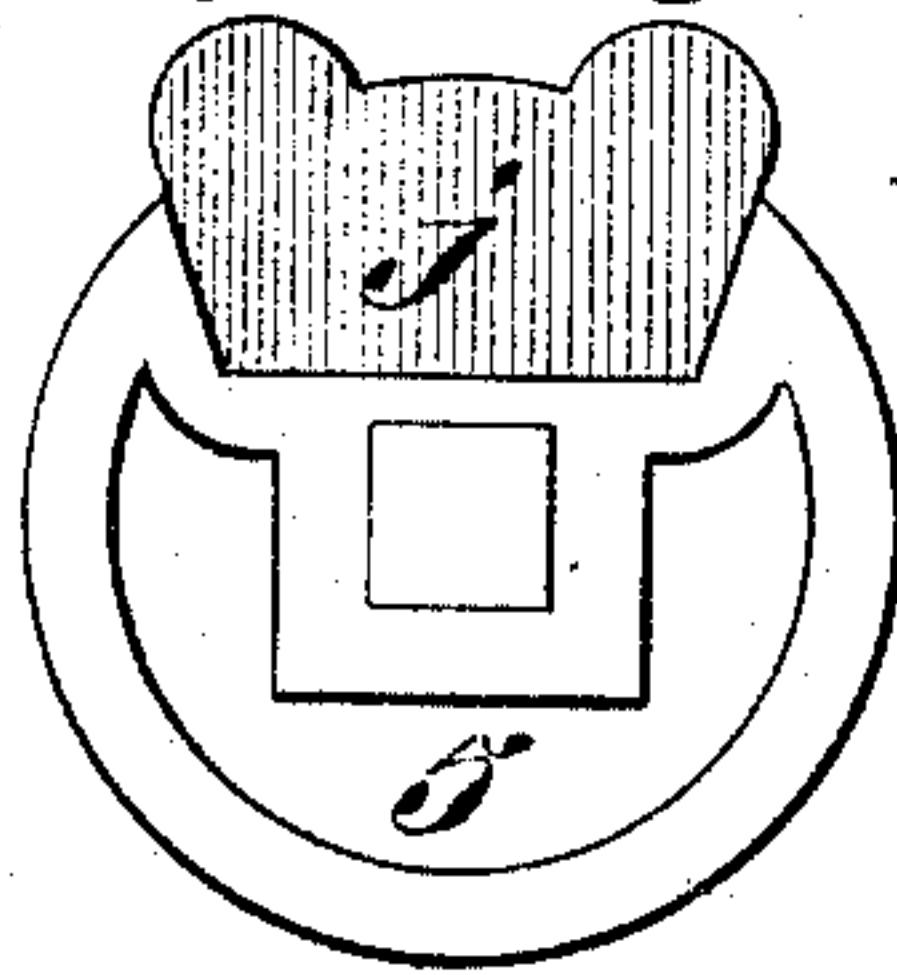


Fig. VIII.

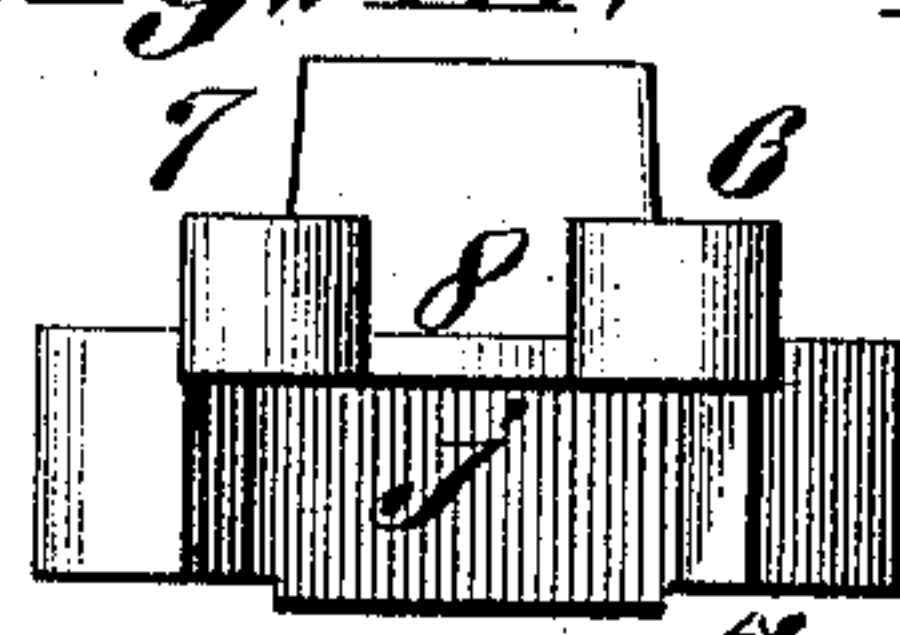


Fig. IX.



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UNITED STATES PATENT OFFICE.

HENRY ELLIOT, OF ST. LOUIS, MISSOURI.

SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 590,015, dated September 14, 1897.

Application filed July 6, 1897. Serial No. 643,648. (No model.)

To all whom it may concern:

Be it known that I, HENRY ELLIOT, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Switch-Stands, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in the class of switch-stands shown and described in Patent No. 537,807, issued April 16, 1895, to Joseph P. Hasty. The stand is designed for the purpose of moving a three-throw switch, as in said Hasty patent, or for throwing a plurality of switch-points and movable frog-points, such as are set forth in Patent No. 560,981, issued May 26, 1896, to the Elliot Frog and Switch Company, assignee of William H. Elliot.

The object of my invention is to construct a switch-stand of this character which will have but little lost motion and by the use of which such switches and frog-points as referred to may be operated with comparative ease.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a vertical section of a switch-stand embodying my invention, the section being taken on line I I, Fig. II. Fig. II is an elevation. Fig. III is a top or plan view. Figs. IV, V, and VI are diagram views illustrating the operation of the device. Fig. VII is a bottom view of the operating-disk. Fig. VIII is a front elevation of the operating-disk. Fig. IX is a side view of one of the operating-levers. Fig. X is a detail sectional view of the disk and levers.

Referring to the drawings, 1 represents the body of the switch-stand, which is provided with a suitable supporting-base 2, and through which the operating-shaft 3 passes.

The shaft is provided with the usual moving and locking lever 4, by which the shaft is turned and then locked in position. On the lower end of the shaft 3 is a disk 5, corresponding to the disk J of the Hasty patent and having the notch or recess *j* of the Hasty patent. This disk, however, when made in accordance with my invention is provided,

further, with a pair of raised projections 6 7, formed upon a ledge 8 of the disk that lies over the recess *j*, as shown clearly in Fig. VIII.

9 represents a lever pivoted to the switch-stand or other support to one side of the disk 5, as shown at 10, Fig. I, and 11 represents a lever pivoted to the stand or other support to the other side of the disk 5, as shown at 12, Fig. I. The outer ends of these levers are provided with rods 9^a and 11^a, respectively, these rods corresponding to the rods *d* and *d'* of the Hasty patent, and they may be connected either to the switch-points, as in the Hasty patent, or to the rock-shafts 9 and 10 of the Elliot patent referred to. The inner end of the lever 9 is provided with a lower prong 13 and an upper prong 14, and the inner end of the lever 11 is provided with a lower prong 15 and an upper prong 16, as shown in Figs. VI and IX. The lower prong of each lever is adapted to enter the recess or notch in the disk 5 and to be engaged by the adjacent end wall of said recess when the disk is turned, and the upper prongs of the levers are adapted to be engaged by the pins or projections 6 7.

In operation the disk is turned by revolving the shaft 3 by means of the lever 4. Assuming the parts to be in the position shown in Figs. III and IV, which is the position they occupy when the main track is open, and assuming that it is desired to move the switch or frog points with which the lever 9 is connected, the shaft 3 is revolved or turned in the direction of the arrow, Fig. IV. The pin 7 will come against the prong 14 of the lever 9 and cause the lever to be moved to the position shown in Fig. V, the prong 13 entering the recess or notch *j* as the parts are moved. This throws the switch or frog points to their desired operative position, and when it is desired to open the track again the shaft and disk are turned back from the position shown in Fig. V to the position shown in Fig. IV, and when thus turned the adjacent wall of the notch or recess *j* engages the prong 13 and moves the lever back from the position shown in Fig. V to the position shown in Fig. IV. When the parts are thus moved, there is no movement imparted to the lever 11. Assuming now the switch or frog points connected

to the lever 11 are to be moved, the shaft 3 is turned to the opposite direction to that indicated by the arrow in Fig. IV and the pin or projection 6, coming against the prong 16 of the lever 11, moves the lever from the position shown in Fig. IV to the position shown in Fig. VI, and when it is desired to move these parts back to the position shown in Fig. IV the adjacent wall of the notch or recess *j* engages the prong 15, and the lever is thus moved with and by the disk.

With such a construction as I have described there is very little lost motion in the turning of the shaft 13, and the bearing-point between the prongs of the levers and the parts of the disk that engage them being well out on the ends of the prongs at a considerable distance from the pivots of the levers the switch and frog points may be moved in either direction with comparative ease and with much less exertion than is required where the point of contact between the disk and lever is near the pivot of the latter, as shown, for instance, in Fig. VII of the Hasty patent, where the projection or pin *j'* engages the lever near the pivot of the lever. I am thus enabled to get a bearing between the disk and the levers at a considerable distance from the pivots of the latter by providing each lever with a pair of prongs or contact-points on different elevations and providing the disk with contact-points—to wit, the walls of the recess and the projections 6 7—for engaging the levers that are on different elevations or on elevations respectively corresponding to the elevations of the prongs on the levers.

I claim as my invention—

1. In a switch-stand, the combination of an

operating-shaft, a disk secured to the shaft and provided with contact-points arranged at different elevations, and a pivoted lever provided with prongs arranged at different elevations, and adapted to be engaged by the said contact-points on the disk, substantially as set forth.

2. In a switch-stand, the combination of an operating-shaft, a disk secured to the shaft and provided with an upper and lower pair of contact-points, and pivoted levers provided with upper and lower prongs, substantially as and for the purpose set forth.

3. In a switch-stand, the combination of an operating-shaft, a disk secured to the shaft and provided with a notch or recess on one side, and a pair of pins or projections on the other side, said notch and pins forming contact-points, and a pair of pivoted levers each provided with an upper and lower prong adapted to be engaged respectively by the contact-points of the disk, substantially as set forth.

4. In a switch-stand, the combination of an operating-shaft, a disk secured to the shaft and having a recess in its lower face, and a pair of pins or projections on its upper face, and pivoted levers arranged on opposite sides of the disk; each lever being provided with a prong, the lower prong adapted to enter said recess in the disk, and the upper prong adapted to be engaged by one of said studs or projections, substantially as set forth.

HENRY ELLIOT.

In presence of—

E. S. KNIGHT,
E. C. MOORE.