

(No Model.)

3 Sheets—Sheet 1.

W. MOLLER.
AMALGAMATOR.

No. 272,741.

Patented Feb. 20, 1883.

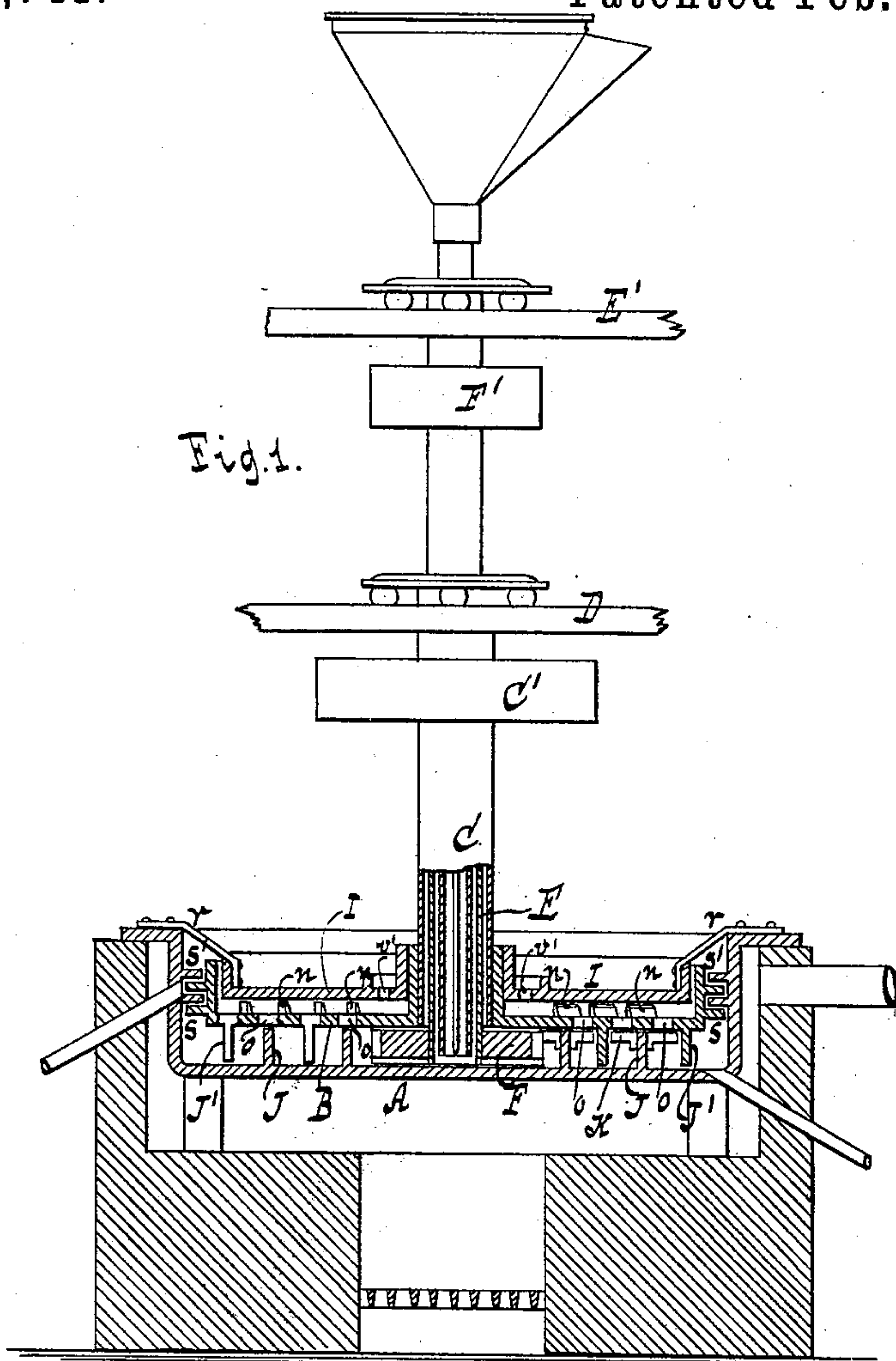
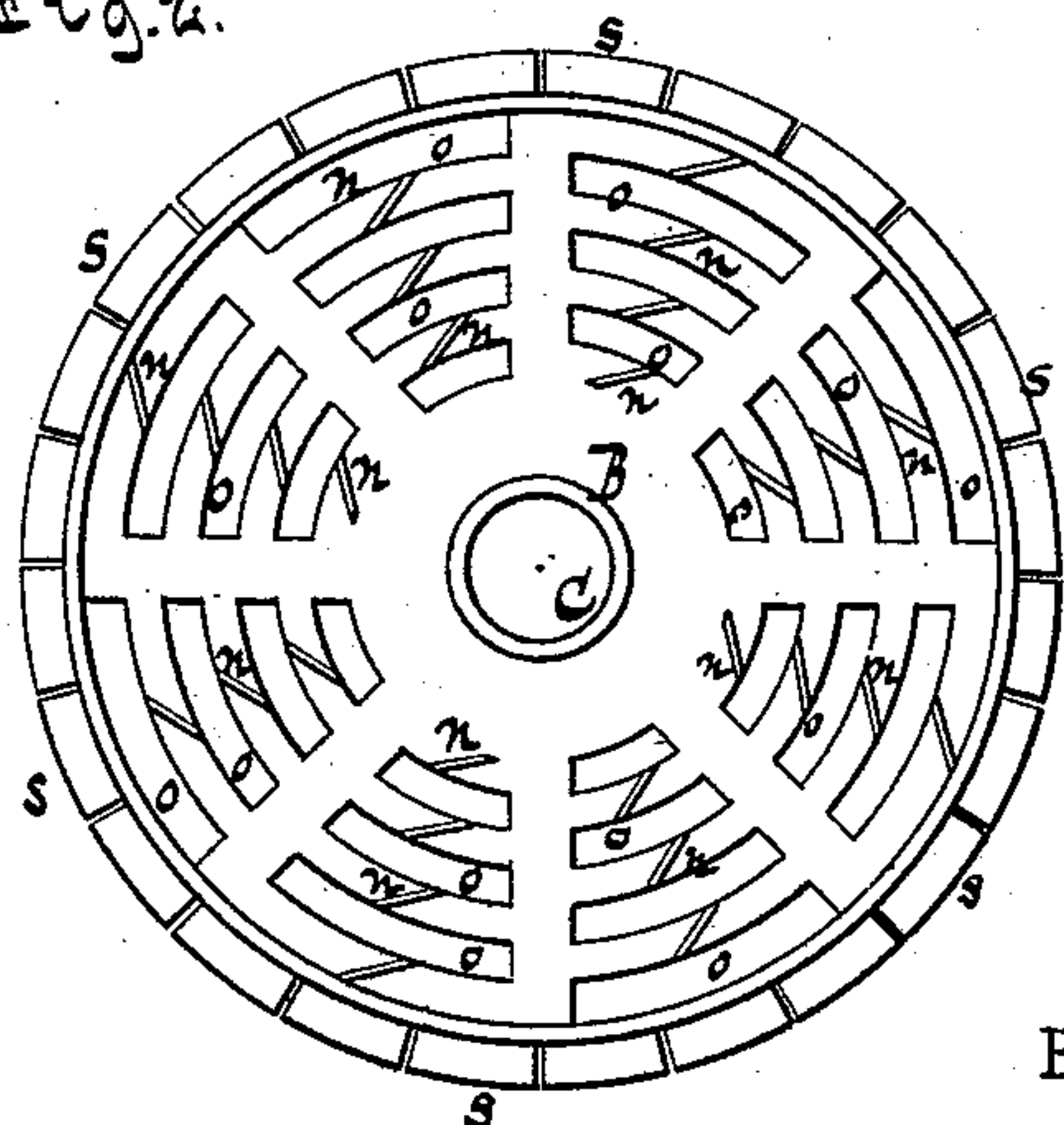


Fig. 2.



WITNESSES:

Otto Hufeland
William Miller

INVENTOR

William Moller

BY *Van Santvoord & Hauff*

ATTORNEYS

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Fig. 3.

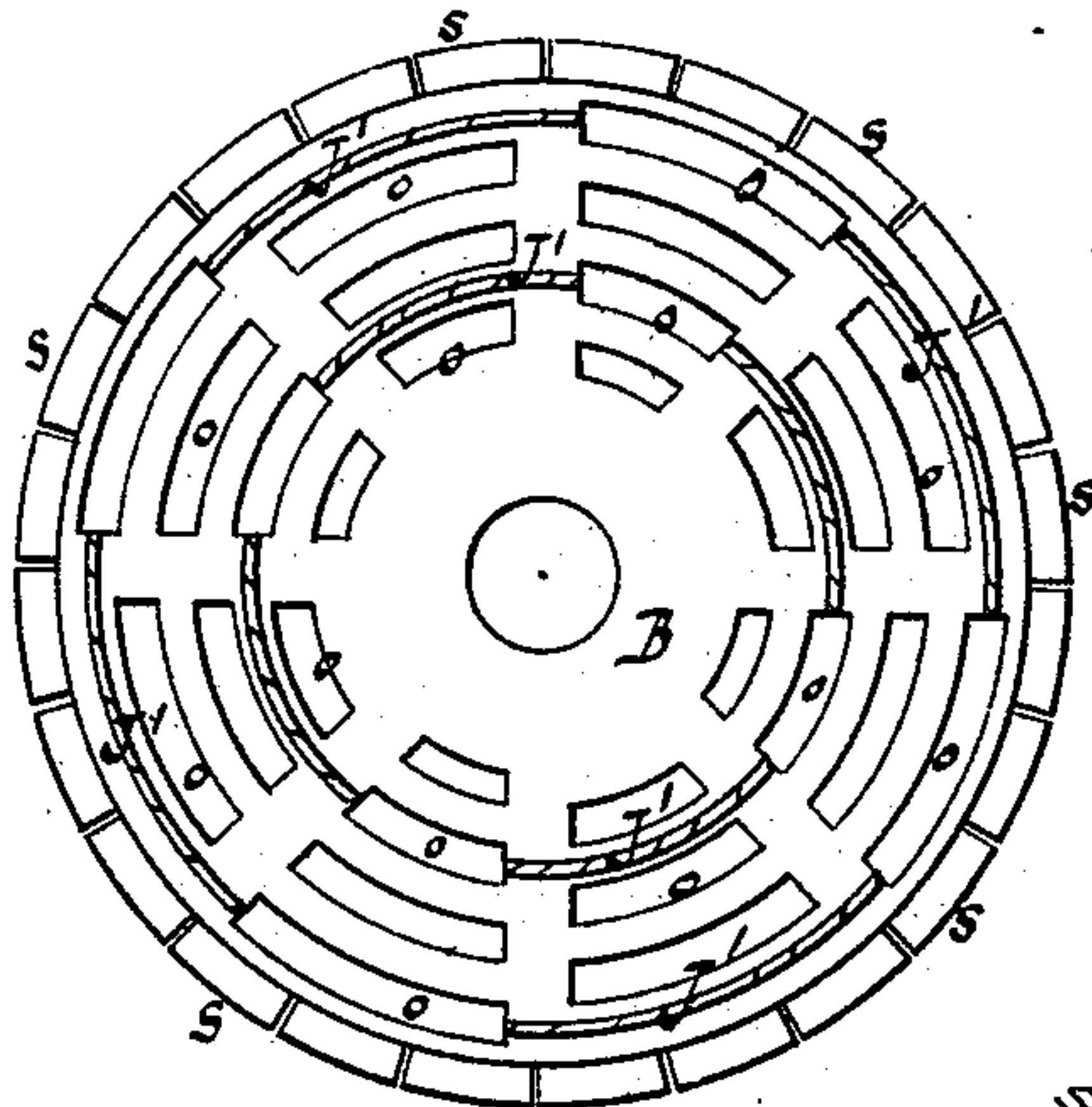


Fig. 6.

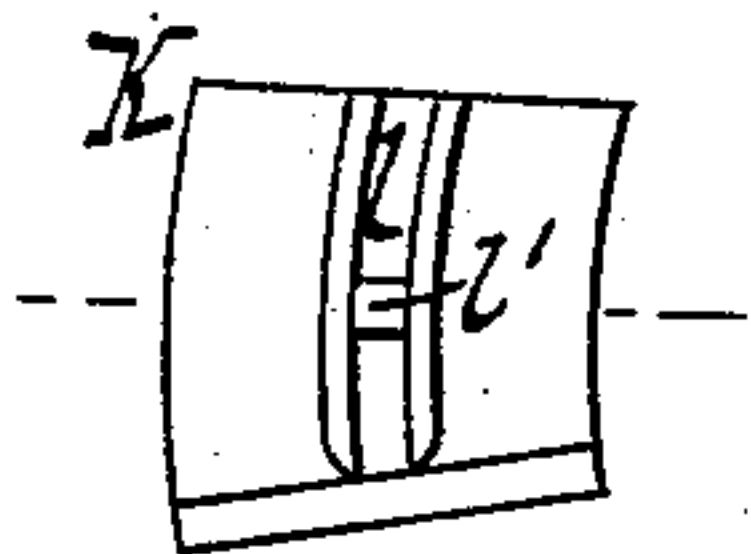


Fig. 4.

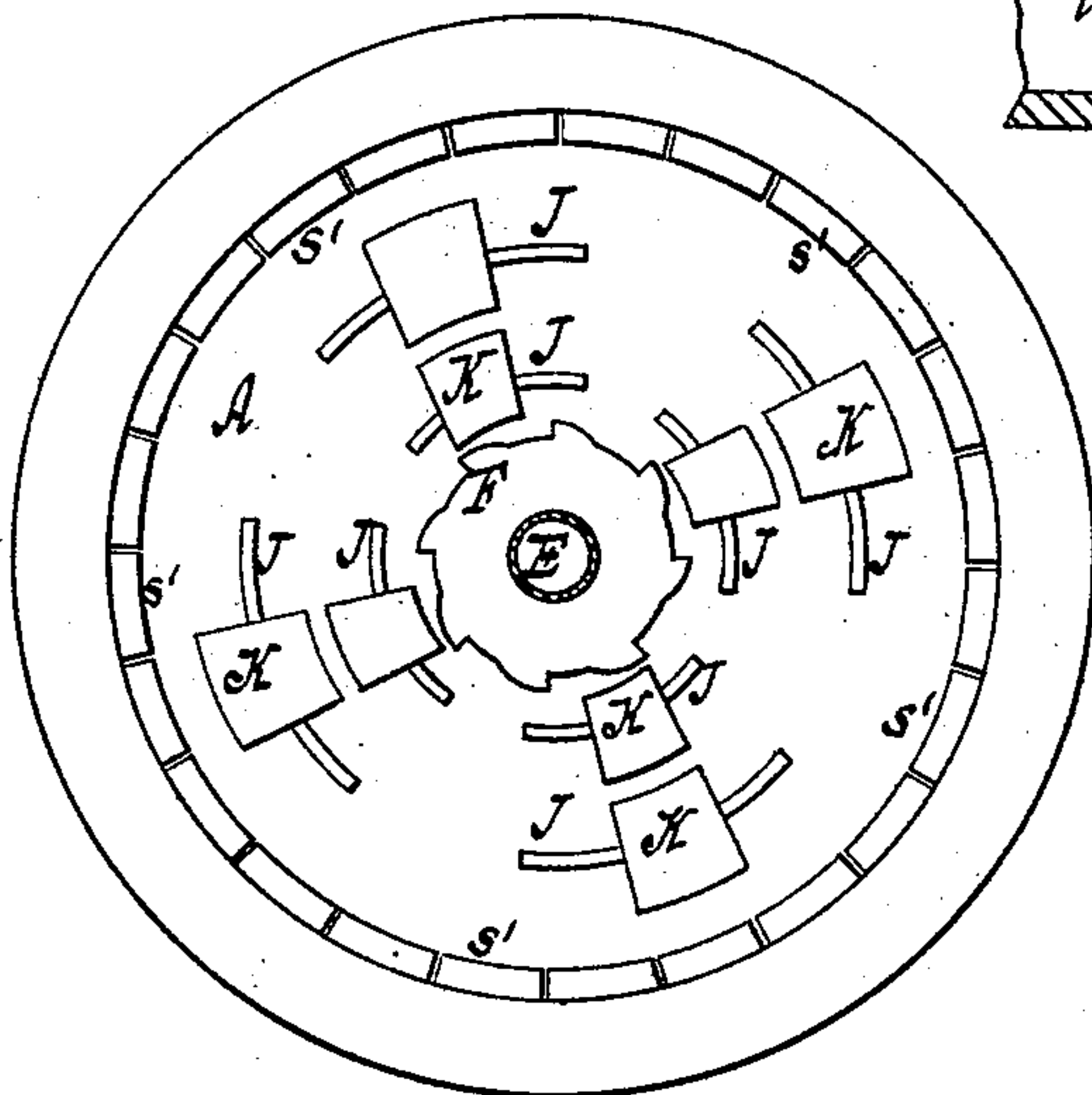


Fig. 8.

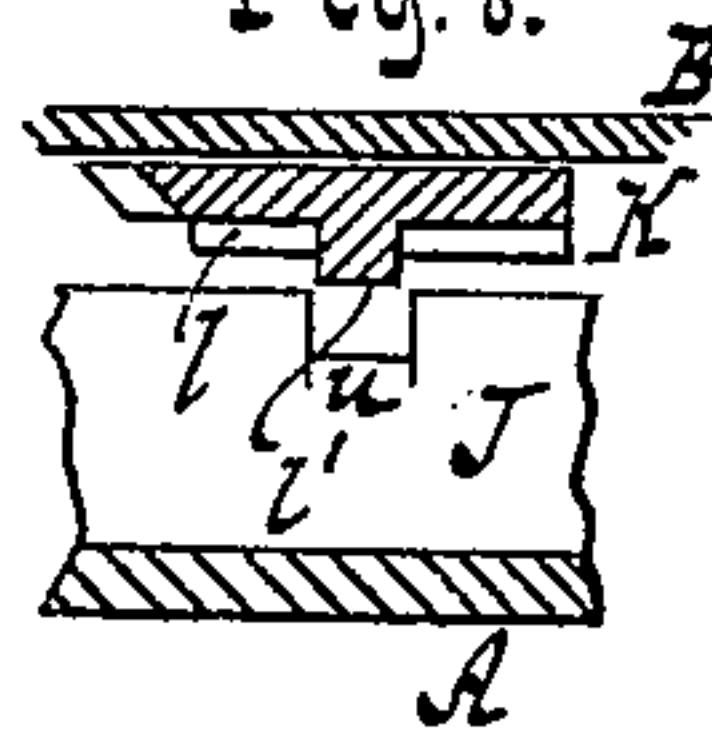


Fig. 7.

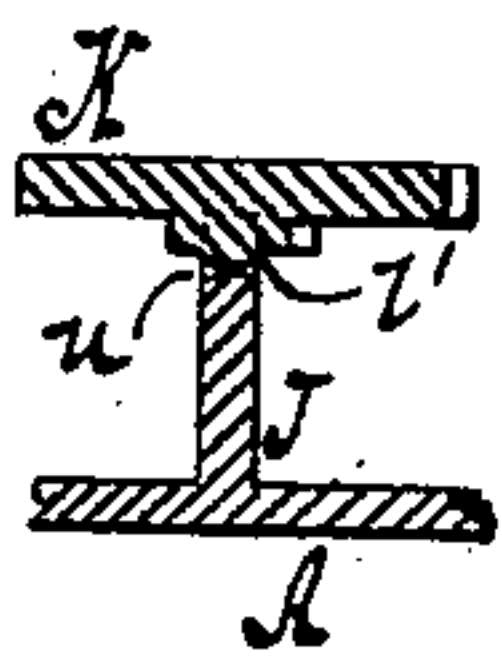
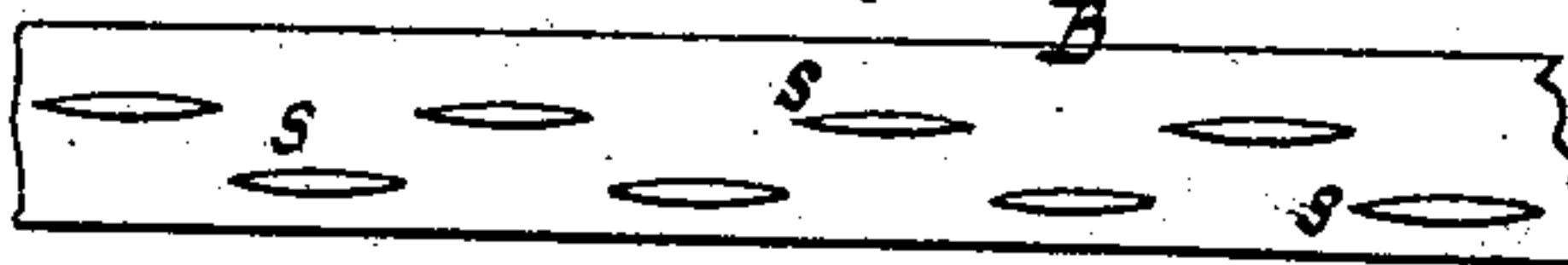


Fig. 5.



WITNESSES:

Otto Hupfand
William Miller

INVENTOR

William Moller

BY Van Santvoord & Hauff

ATTORNEYS

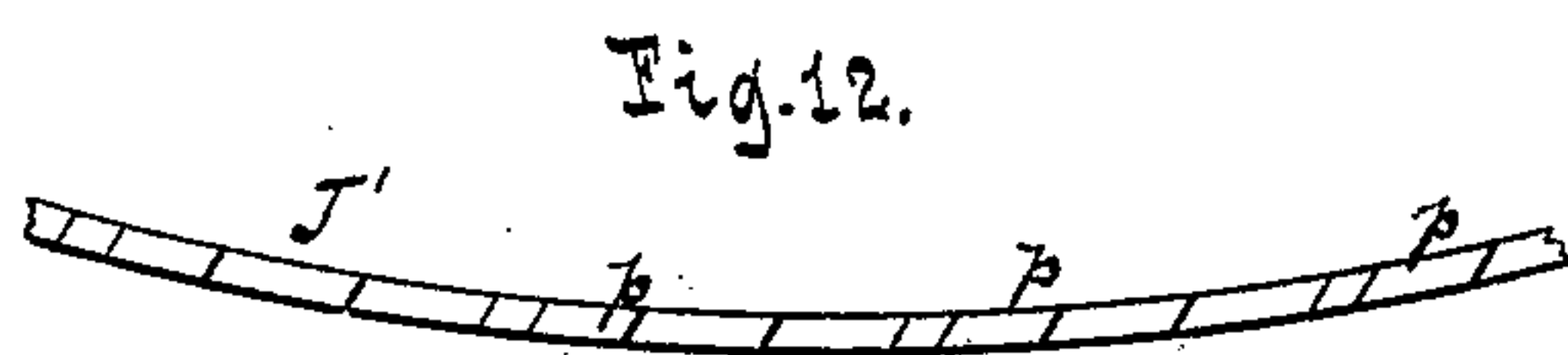
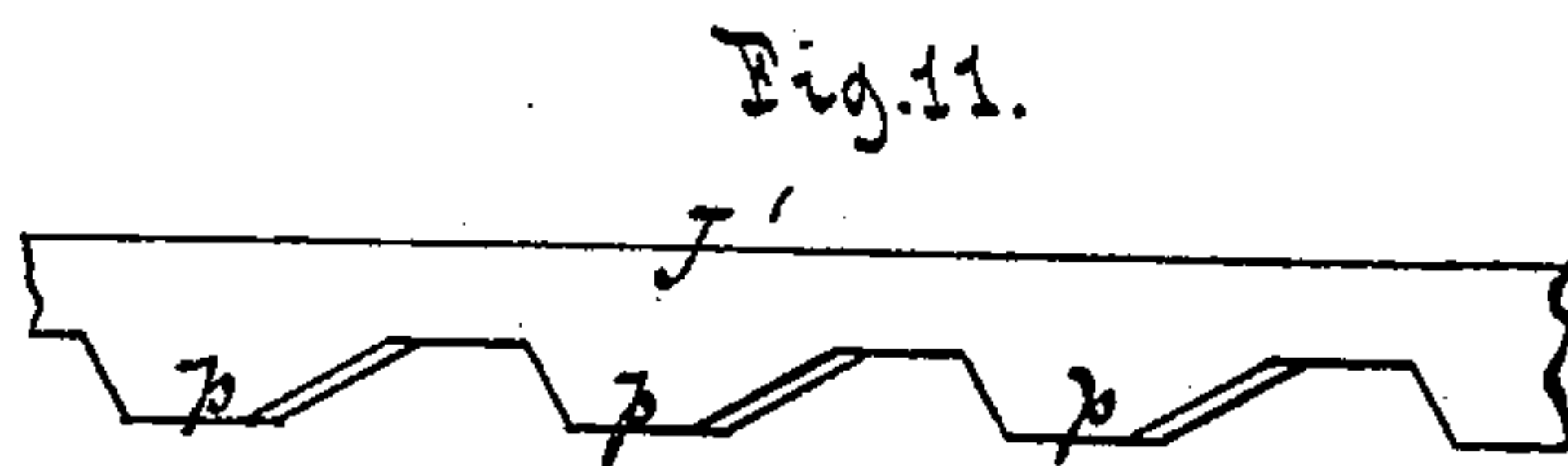
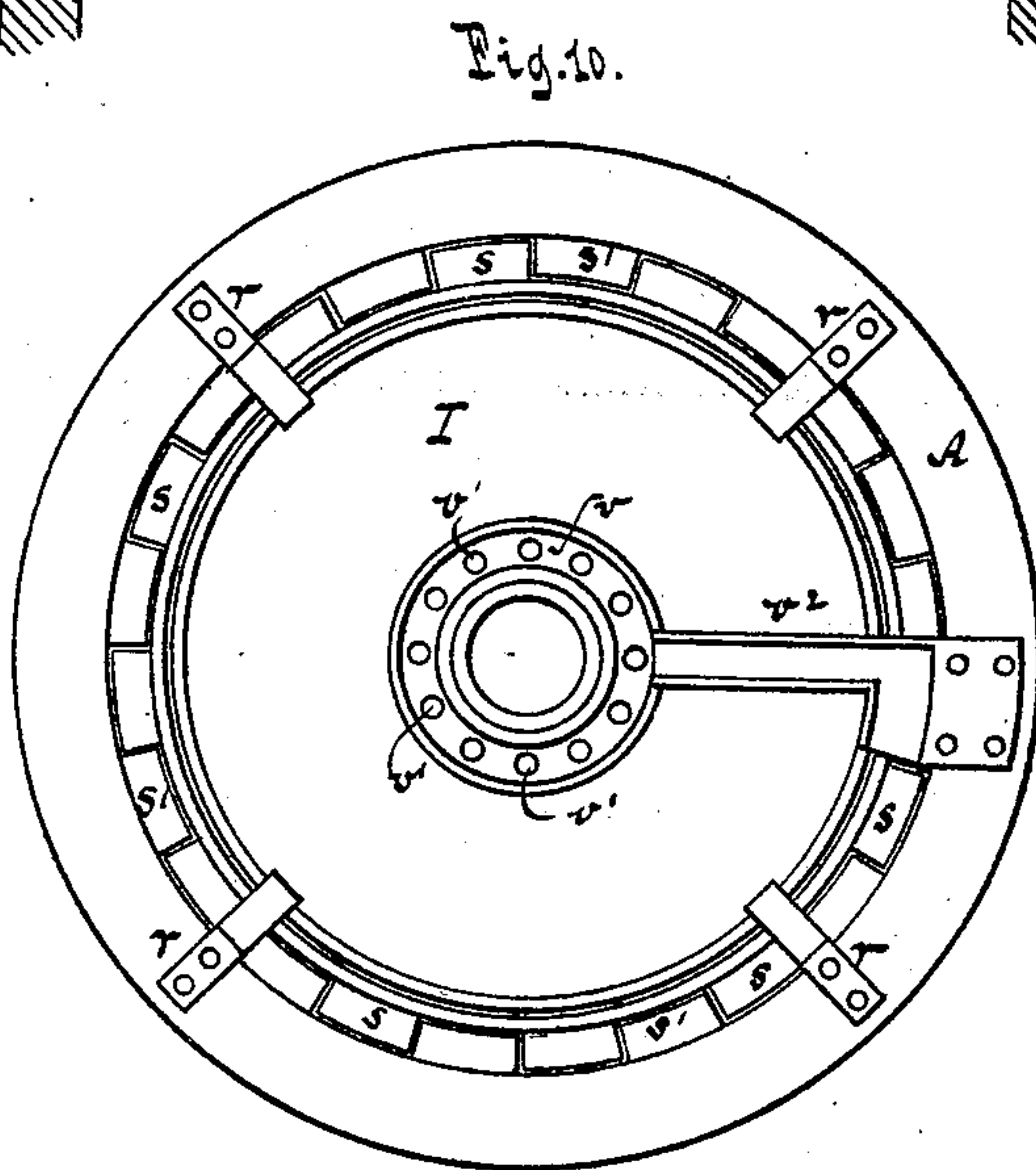
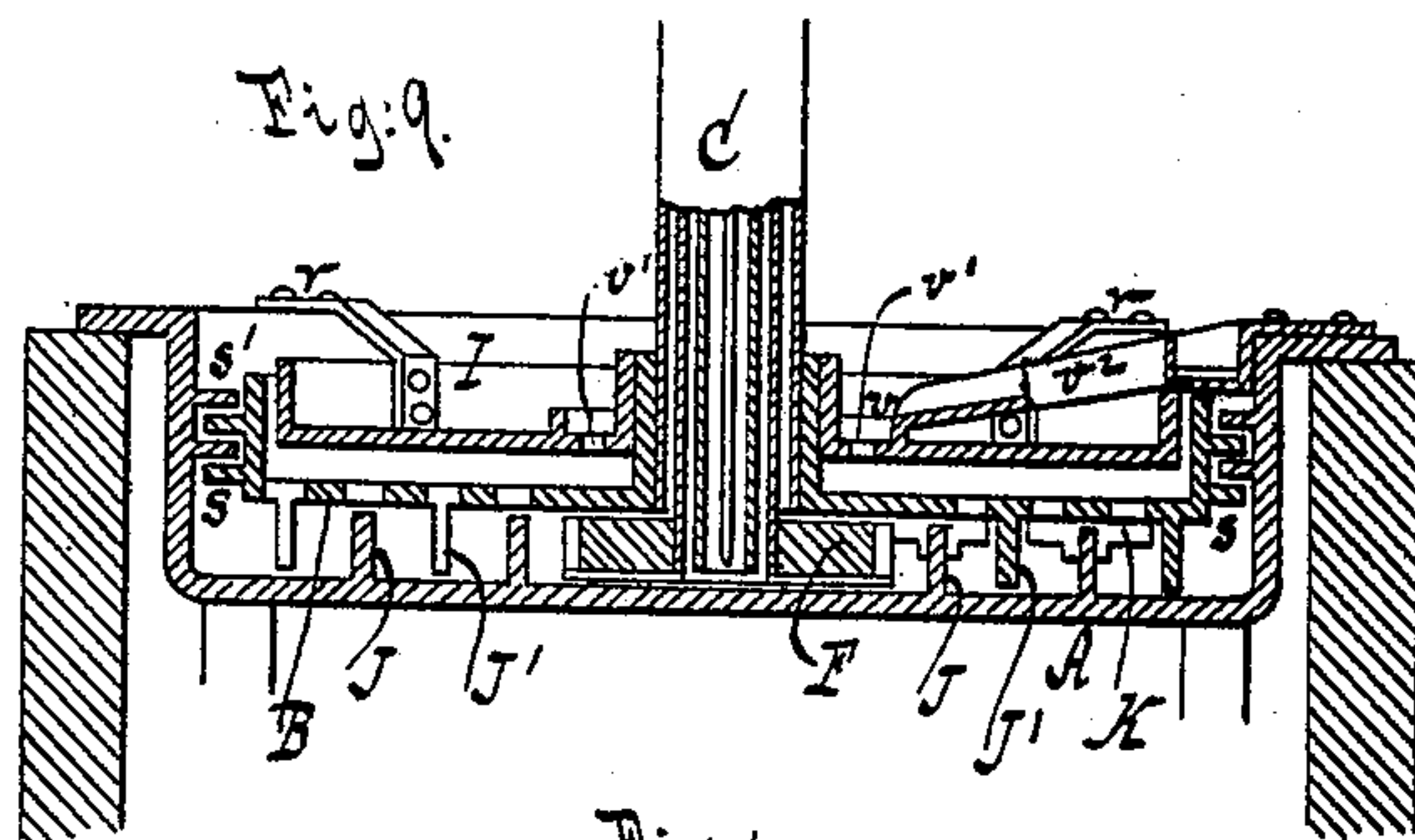
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ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM MOLLER, OF YONKERS, NEW YORK.

AMALGAMATOR.

SPECIFICATION forming part of Letters Patent No. 272,741, dated February 20, 1883.

Application filed June 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MOLLER, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented new and useful Improvement in Amalgamators, of which the following is a specification.

This invention relates to that class of amalgamators for which I filed an application for Letters Patent on or about the 11th day of May, 1882; and it consists in the novel combination of parts hereinafter described, whereby the operation of the apparatus is facilitated or improved.

This invention is illustrated in the accompanying drawings, in which Figure 1 represents a vertical central section. Fig. 2 is a plan or top view of the agitator-disk. Fig. 3 is an inverted plan view thereof. Fig. 4 is a plan or top view of the amalgamating-pan, showing also the ore-distributor. Fig. 5 shows a portion of the agitator-disk in side view. Fig. 6 is an inverted plan view of one of a series of scrapers, combined with concentric segments in the pan, as hereinafter explained. Fig. 7 is a cross-section of the scraper, showing it attached to a segment. Fig. 8 is a longitudinal section thereof. Fig. 9 is a cross-section, showing scoops for catching overflowing metal. Fig. 10 is a plan or top view thereof. Figs. 11 and 12 are detail views.

Similar letters indicate corresponding parts.

The letter A designates the amalgamating-pan, containing a revolving agitator-disk, B, which is fixed to a vertical shaft, C, and thereby suspended from a timber, D. This shaft C is hollow, and within it is arranged a second hollow shaft, E, which is suspended from a timber, E', and carries a revolving distributor, F, the latter being situated beneath the agitator-disk and next above the bottom of the pan. Both the disk-shaft C and the distributor-shaft F are provided with a pulley, C' F', for imparting motion to the disk and distributor, and in practice the distributor is made to revolve with a higher speed than the disk, its action being to throw the ore which is deposited in the pan through the distributor-shaft outward by centrifugal force. On the circumference of the agitator-disk B and on the side of the pan are arranged alternating blades s or s', serving to check the mineral finding its way to the

side of the pan, while allowing the escape of sand. In the body of the agitator-disk B are formed openings o, and above said disk is arranged a second disk, I, which is stationary, it being secured to the side of the pan, as by means of arms r. When the machine is applied to use the sand escapes upward through the disk-openings o, and, coming in contact with the stationary disk I, it is forced outward to the side of the pan between the stationary disk and the revolving disk, due to the motion of the latter. Said disk-openings o are of segmental shape, and are arranged concentrically to each other and the disk-axis, thus affording a ready means of escape to the sand, since the openings are in the plane of motion of the disk. In order to keep the stationary disk I free of sand, the upper surface of the revolving disk B is provided with scrapers n, and the stationary disk is arranged approximately in contact therewith, the scrapers being of equal height, so that the lower surface of the stationary disk is exposed to the action of the scrapers. Said scrapers n are composed of vertical blades, and they are arranged obliquely to the axis of the revolving disk, so that they perform the additional function of working outward the sand that is received between the disks, as before stated.

The bottom of the amalgamating-pan A is provided with concentric segments J, and on the lower surface of the agitator-disk B are corresponding segments, J', which alternate with those of the pan in circular planes, so that while the two series of segments clear each other in the revolution of the disk they co-operate to retard the progress of the ore from the center to the circumference of the pan. Each of these segments J of the pan carries a scraper, K, which acts on the lower surface of the agitator-disk B to keep it free of sand, said disk revolving approximately in contact with the scrapers. For the purpose of attaching the scrapers K to the pan-segments, each segment is formed with a transverse notch, u, in the upper edge, (best seen in Fig. 8,) and each scraper is provided on its lower surface with a groove, l, which is fitted to the segments, and with a key, l', in said groove, which is adapted to the notches of the segments, so that, if the scrapers are placed on the segments by means of their grooves and the keys are brought

into the notches, the scrapers are held against both longitudinal and lateral displacement in one direction by the sides of the notches and in the other direction by the sides of the grooves, while such means of attachment at the same time renders the scrapers detachable. Another advantage gained by said attachment is that the scrapers, being loose, are permitted to adapt themselves to any irregularities on the lower surface of the agitator-disk. The segments J' of the agitator-disk are formed with teeth p in their lower edges, (see Fig. 11,) so that the segments form agitators to stir up or scatter the contents of the pan, and the leading edges of these teeth are oblique to the axis of the disk, as shown in Fig. 12, causing them to act on the material with a tendency to throw it outward to the side of the pan.

The stationary disk I is provided with an annular cell, v , near the center thereof, and with holes v' in the bottom of such cell, while to the side of the pan A are secured scoops v^2 , one or more, adapted to empty into the cell v . These scoops extend inwardly on an incline plane, and their receiving ends are above and opposite to the edges of both the revolving disks B and stationary disk I , such ends being curved, so that in case any metal overflows the edges of the disks it is caught by the scoops, and thereby conducted to the cell v , whence it returns to the pan through the holes v' and the holes o of the revolving disk.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, substantially as hereinbefore set forth, with the amalgamating-pan, of the revolving agitator-disk having openings adapted to permit the upward escape of sand, and the stationary disk situated above said agitator-disk.

2. The combination, substantially as hereinbefore set forth, with the amalgamating-pan, of the revolving agitator-disk having segmental concentric openings for the upward escape of sand, and the stationary disk situated above said agitator-disk.

3. The combination, substantially as hereinbefore set forth, with the amalgamating-pan, of the revolving agitator-disk having openings adapted to permit the upward escape of sand, and having its upper surface provided with scrapers, and the stationary disk arranged above said agitator-disk in contact with the scrapers.

4. The combination, substantially as hereinbefore set forth, with the amalgamating-pan, of the revolving agitator-disk having openings adapted to permit the upward escape of sand, and having its upper surface provided with scrapers, which are arranged obliquely to the axis of the disk, and the stationary disk arranged above said agitator-disk in superficial contact with the scrapers.

5. The combination, substantially as hereinbefore set forth, of the amalgamating-pan having its bottom provided with concentric segments, and with scrapers attached to said segments, and the agitator-disk having its lower surface provided with concentric segments which alternate with those of the pan, and revolving in contact with said scrapers, for the purpose specified.

6. The amalgamating-pan having its bottom provided with concentric segments, each containing a transverse notch, and the scrapers having a groove which is fitted to the segments, and a key in said groove, which is adapted to the segment-notches for the purpose of attaching said scrapers to the segments, in combination with the revolving agitator-disk.

7. The combination, substantially as hereinbefore set forth, with the revolving agitator-disk, of the concentric segments having their lower edges provided with teeth, for the purpose specified.

8. The combination, substantially as hereinbefore set forth, with the revolving agitator-disk, of the concentric segments having their lower edges provided with teeth, the leading edges of which are oblique to the disk-axis, for the purpose specified.

9. The combination, substantially as hereinbefore set forth, of the stationary disk having the central annular cell provided with holes in the bottom thereof, the revolving disk, and the inclined scoops, one or more, having their receiving ends arranged above the edges of the disks and emptying into the cell of the stationary disk, for the purpose specified.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

WILLIAM MOLLER. [L. S.]

Witnesses:

W. HAUFF,
E. F. KASTENHUBER.