

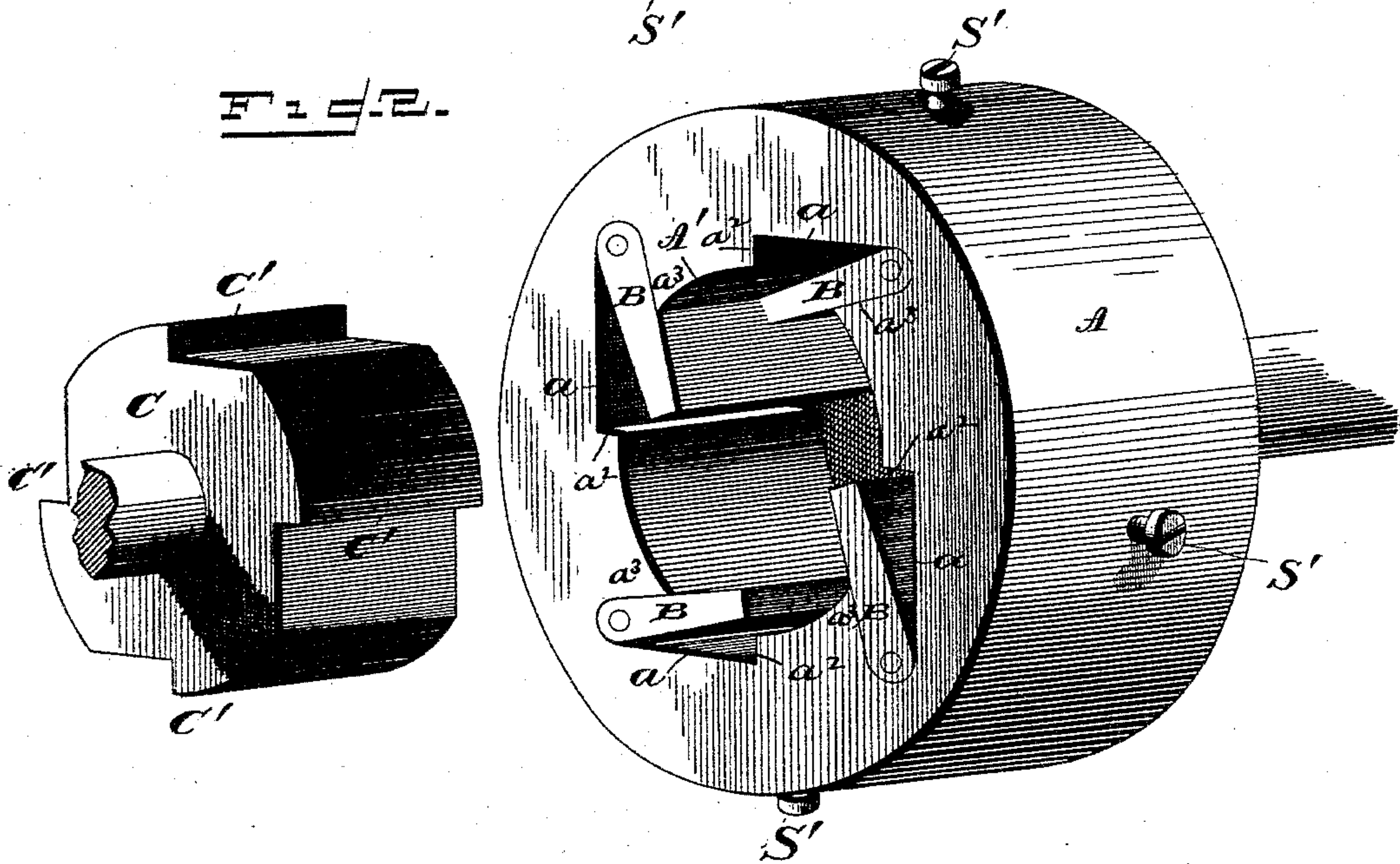
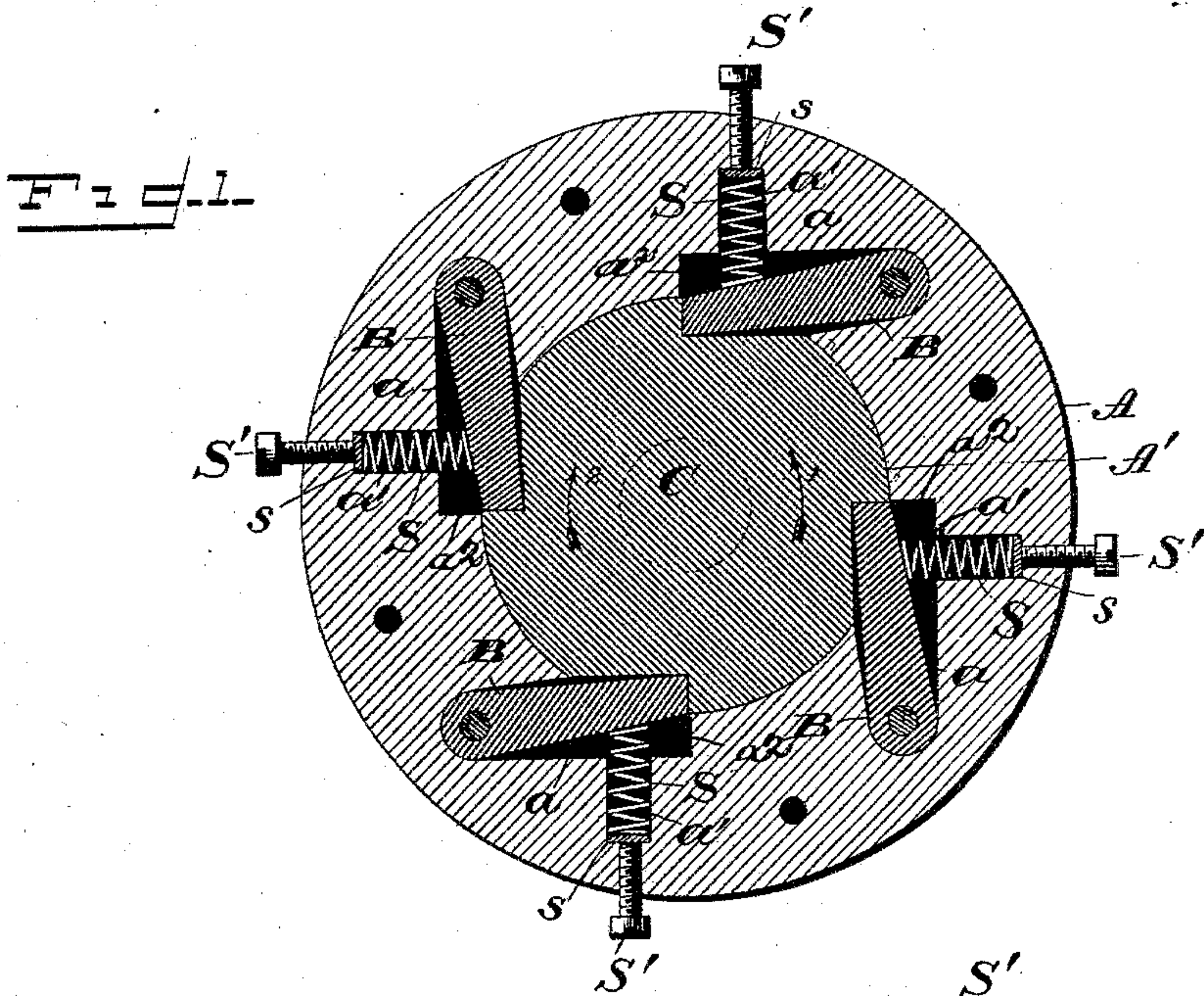
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PAWL AND RATCHET MECHANISM.

No. 414,545.

Patented Nov. 5, 1889.



Levi J. Jones.

WITNESSES

G. S. Elliott,  
E. M. Johnson

INVENTOR

*[Signature]*  
Attorney

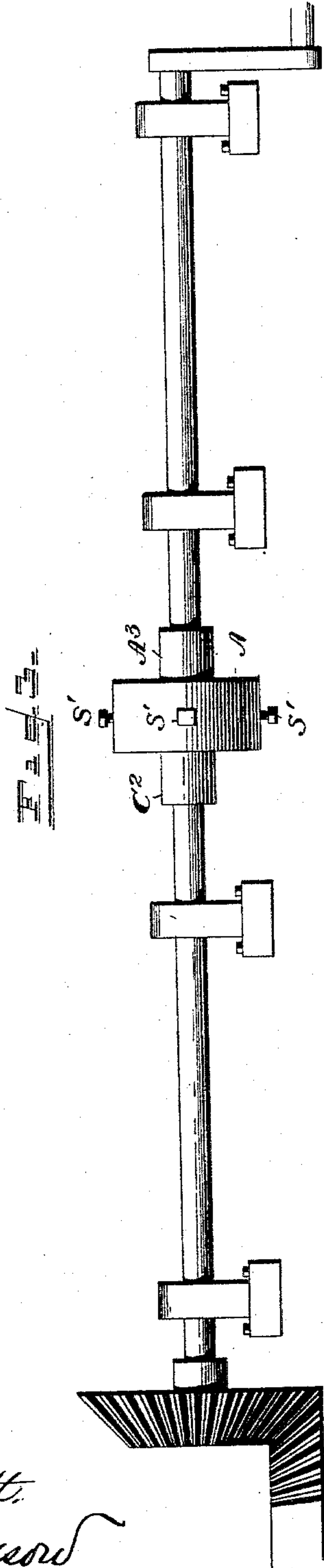
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# UNITED STATES PATENT OFFICE.

LEVI J. JONES, OF DALTON, MASSACHUSETTS.

## PAWL-AND-RATCHET MECHANISM.

SPECIFICATION forming part of Letters Patent No. 414,545, dated November 5, 1889.

Application filed October 15, 1887. Serial No. 252,464. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI J. JONES, a citizen of the United States of America, residing at Dalton, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Pawl-and-Ratchet Mechanism; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to pawl-and-ratchet mechanism; and it consists in the construction and arrangements of the parts thereof, which will be more fully hereinafter described, and pointed out in the claim.

The object of my invention is to provide a pawl-and-ratchet mechanism whereby extra power may be connected to shafting, the parts of the said mechanism being simple and effective in their construction and operation, strong and durable, easily mounted, and readily understood.

In the accompanying drawings, wherein like letters of reference indicate similar parts in the several views, Figure 1 is a vertical sectional view of my improved pawl-and-ratchet mechanism. Fig. 2 is a perspective view of the parts thereof removed. Fig. 3 is a side elevation of a non-continuous line of shafting, showing the application of my improved pawl-and-ratchet mechanism, which is illustrated in section.

A indicates the outer disk or shell of my improvement, which is formed with a central substantially-circular recess A', having a series of four recesses *a* extending into the shell A from the periphery of said central recess A'. The one wall of each of the recesses *a* is in alignment with the four radii of the vertical and horizontal diameters of the shell A, the said recesses *a* being formed at right angles to said radii, and project backward therefrom, as shown. The walls of the recesses *a* farthest away from the said radii are curved and receive the rear curved ends of flat slightly wedge-shaped pawls B, which are pivotally mounted at this point. Vertical recesses *a'*

are formed adjacent to the front walls of the recesses *a* and merge into the latter. Within the recesses *a'* coiled springs S are mounted, which bear against the flat pawls B at their lower ends and against washers *s* at their upper ends. The said washers *s* are in adjustable engagement with the lower ends of set-screws S', which project outward from the outer periphery of the shell A. The tension of the springs S against the pawls B may thus be regulated at will and as necessary.

Within the recess A' a ratchet-wheel C is adapted to be inserted. This ratchet-wheel is constructed substantially circular and of the same diameter as the said recess A'. Four angular shoulders are constructed in the periphery of said ratchet-wheel to form four teeth C', which are adapted to be engaged by the ends of the four pawls B. Suitable set-collars C<sup>2</sup> and A<sup>3</sup> are used with the ratchet-wheel C and with the closed side of the casing A, which are secured to the opposing ends of the shafts with which my improvement is used. As shown in Fig. 1, the said ratchet-wheel C fits snugly within the recess A' of the shell A, and is adapted to be readily slipped in the said recess A' when the pawl-and-ratchet mechanism is moved in connection. When the ratchet-wheel C is turned in the direction of arrow 1, the pawls B ride over the same, dropping into the teeth formed on the said ratchet-wheel. If an effort is made to move the ratchet-wheel in the direction of the arrow 2, such effort will be repelled by means of the engagement of the teeth C' by the pawls B, which are held down against the teeth by the action of the springs S. It will be observed that resistance of movement of the ratchet-wheel in the direction of the arrow 2 is applied from four points only. These points of resistance intersect the vertical and horizontal diameters of the wheel C, having a thickness of metal between the same capable of overcoming the strain brought to bear thereagainst. It will thus be seen that a strong and durable clutch is provided.

The utility, adaptability, and advantages of my improved form of pawl-and-ratchet mechanism being obviously apparent, it is unnecessary to further enlarge upon the same herein.



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

5 The combination of the casing A, having a central circular chamber, the outer peripheral portion of said casing provided on its inner wall with tangentially-extending pawl-recesses and substantially-radial recesses intersecting the same, the pawls pivoted in said  
10 pawl-recesses, adjusting-screws passing through said peripheral portion to intersect the radial recesses therein, a plate located at the end of each screw, and a spring interposed between the adjacent pawl and plate,

and the block C, fitting snugly within the 15 chamber and having tangential recesses corresponding in number to that of the pawls, the relative arrangement of the casing and block C being such that intermediate concentric bearing portions are formed between 20 the pawl-recesses of both, substantially as described.

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

LEVI J. JONES.

Witnesses:

HOMER H. BICKNELL,  
W. W. SCOFIELD.