

No. 631,866.

Patented Aug. 29, 1899.

L. P. WELLMANN.
RATCHET MECHANISM.
(Application filed Dec. 19, 1898.)

(No Model.)

Fig. 1

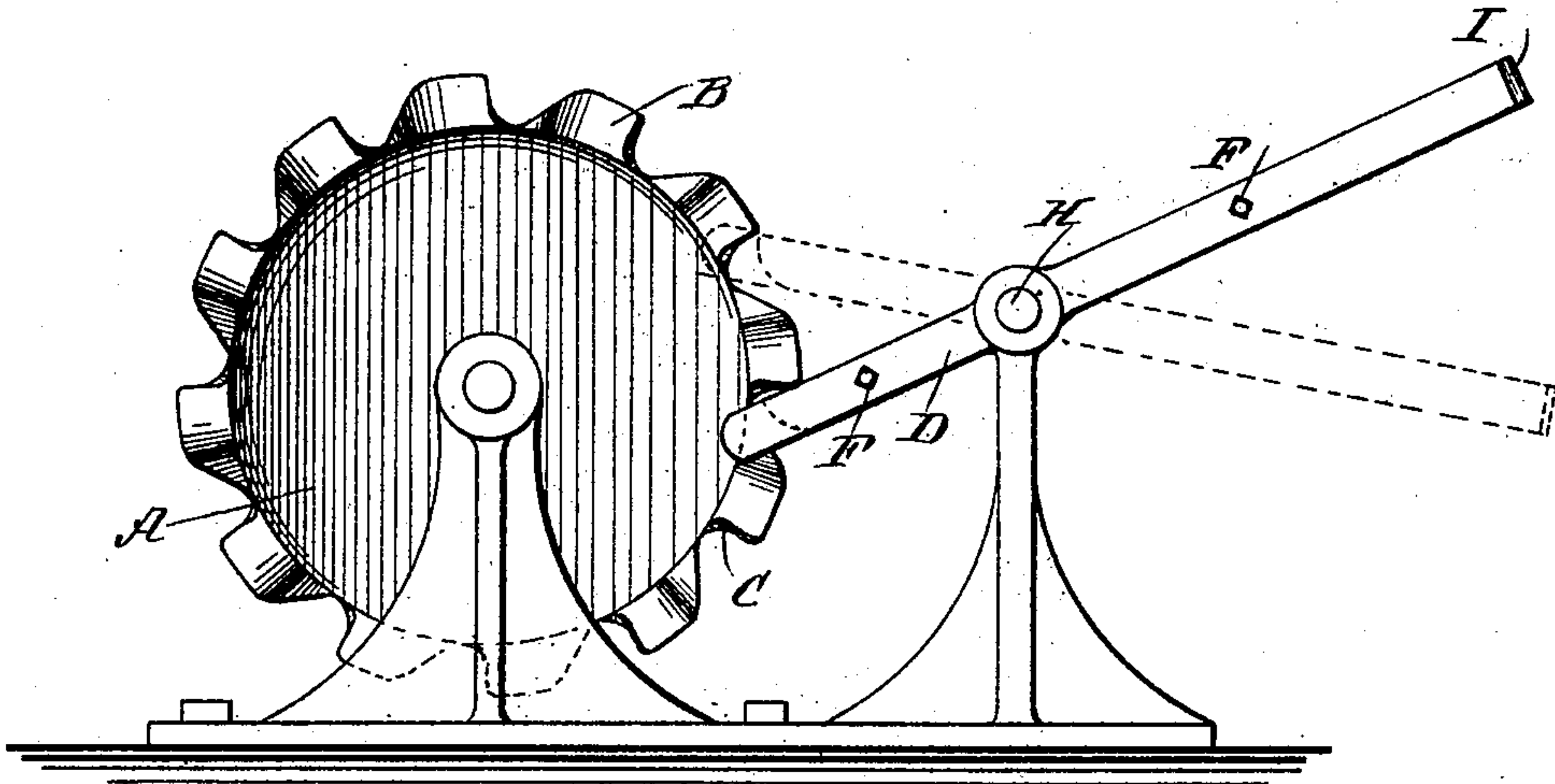


Fig. 2

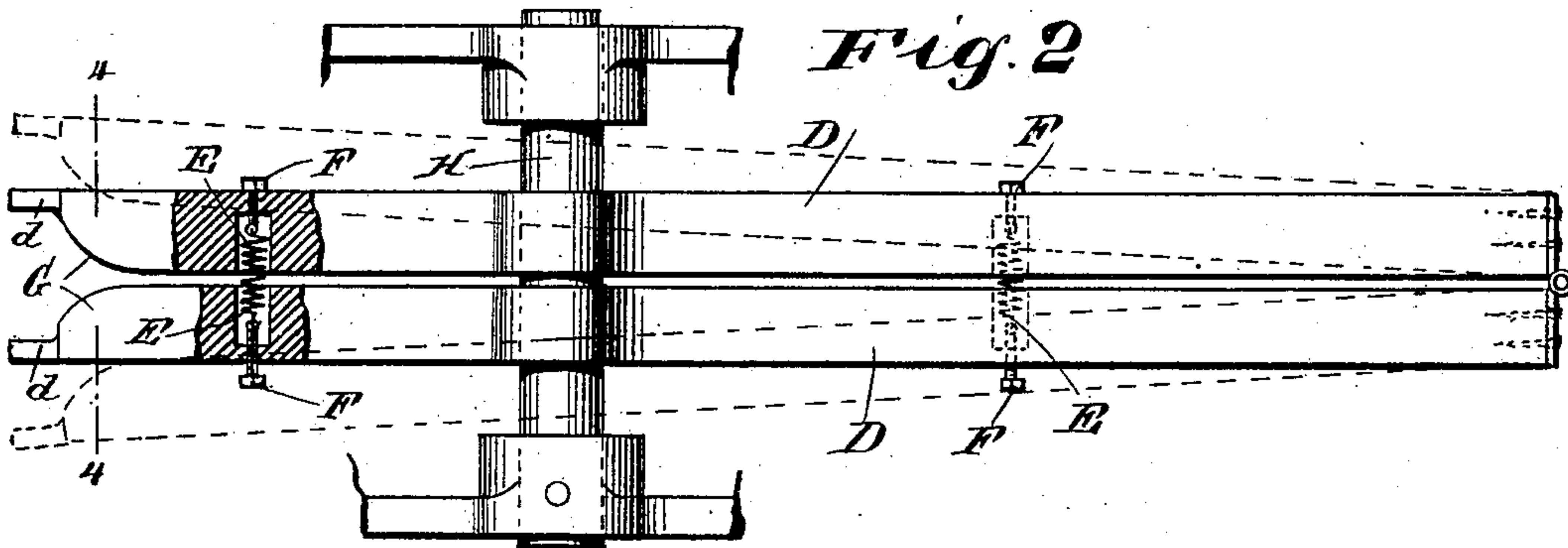
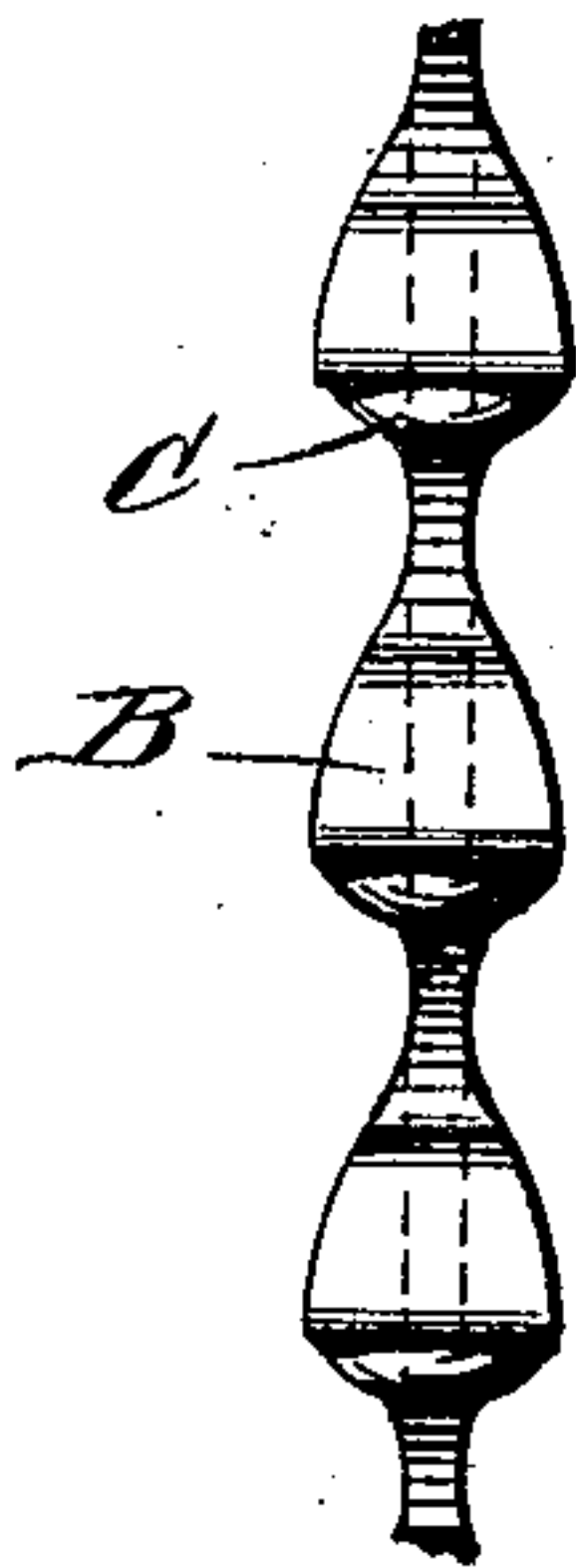


Fig. 4



Fig. 3



WITNESSES:
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LOUIS PHILIP WELLMANN, OF TAURUS, NEW JERSEY.

RATCHET MECHANISM.

SPECIFICATION forming part of Letters Patent No. 631,866, dated August 29, 1899.

Application filed December 19, 1898. Serial No. 699,703. (No model.)

To all whom it may concern:

Be it known that I, LOUIS P. WELLMANN, of Taurus, in the county of Hudson and State of New Jersey, have invented a new and Improved Ratchet Mechanism, of which the following is a full, clear, and exact description.

My invention relates to an improved form of ratchet mechanism designed for converting reciprocating into rotary motion, and comprises the novel features hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a device illustrating an embodiment of my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a detail view showing a portion of the edge of the ratchet-wheel, and Fig. 4 is a cross-section of the pawl-levers on the line 4 4 of Fig. 2.

This invention consists of a wheel A, which is mounted to turn upon any suitable support and is provided with a series of teeth B about its periphery. These teeth are of a peculiar construction, as will be seen by reference to Fig. 3. The working face of the teeth extends substantially square across the plane of the wheel, while the sides of the teeth slope from this working face toward the center, thus making the teeth wedge-shaped. In order to strengthen the teeth, a slight web C may, if desired, be formed upon the working face of the teeth, said web occupying the central portion of the teeth.

The pawl by which the teeth are engaged to rotate the wheel consists of a lever formed of two similar bars D, lying alongside of each other and pivoted at their rear ends, as shown at I. The ends of the lever opposite the pivot I, being the ends which engage the teeth, are beveled in cross-section, so that the end which comes in contact with the beveled or wedge-shaped portion of the teeth will coact therewith, so that the two parts of the lever will be spread and made to straddle the teeth. The two parts of the lever are held toward each other by means of springs E, which, as herein shown, consist of small coiled

springs occupying recesses in the adjacent faces of the two parts D, and, as shown, they are attached to small adjusting-bolts F, by means of which the tension may be adjusted. The ends of the bars D which engage the teeth are slightly beveled, as shown at G, the inner corner being rounded off. This facilitates the action of the device in passing the teeth and also permits of the use of a slight reinforcing-web C. The levers D are pivoted upon a shaft H in such a manner that they may slide laterally thereon a sufficient degree to allow for the spread caused by passing the teeth of the wheel. To prevent lateral movement of the levers sufficient to permit their getting upon the wrong side of the wheel, they are provided with extensions or flanges *d*, which will engage the outer side surfaces of the teeth and wheel and keep each lever in its proper place. These flanges will keep the levers properly centered relative to the wheel.

My device may be used in any connection where it is desired to convert a reciprocating into a rotary motion, but is particularly designed for use with mechanisms driven by the reciprocation of the feet or hands.

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

1. A ratchet mechanism, comprising teeth which are wedge-shaped or have sloping side surfaces, and an operating lever or pawl formed in two parts separable sidewise to pass the teeth by engagement with the sides of the teeth, each of said parts having a flange or extension projecting alongside of and beyond the teeth, and means for drawing the parts of the pawl together.

2. A ratchet mechanism, comprising teeth which are wedge-shaped or have sloping side surfaces, and an operating lever or pawl formed in two parts separable sidewise, so that the teeth may pass between them, and means for drawing said parts together, substantially as described.

3. A ratchet mechanism, comprising teeth having sloping side surfaces coming to an edge on the side opposite the working face, and an operating-lever having two spring-held

separable parts adapted to separate to pass the teeth in one direction, substantially as described.

4. A ratchet mechanism, comprising teeth
5 having sloping side surfaces, and an operating-lever formed in two separable halves having a common pivot, and springs connecting the two halves to draw them together, the

tooth-engaging ends of the lever having their inner ends beveled and also slightly rounded 10 on their inner corners, substantially as described.

LOUIS PHILIP WELLMANN.

Witnesses:

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