No. 850,106. PATENTED APR. 9, 1907.

W. W. TORRENCE.

BACK SPACING MECHANISM.

APPLICATION FILED NOV. 6, 1906.

2 SHEETS—SHEET 1.

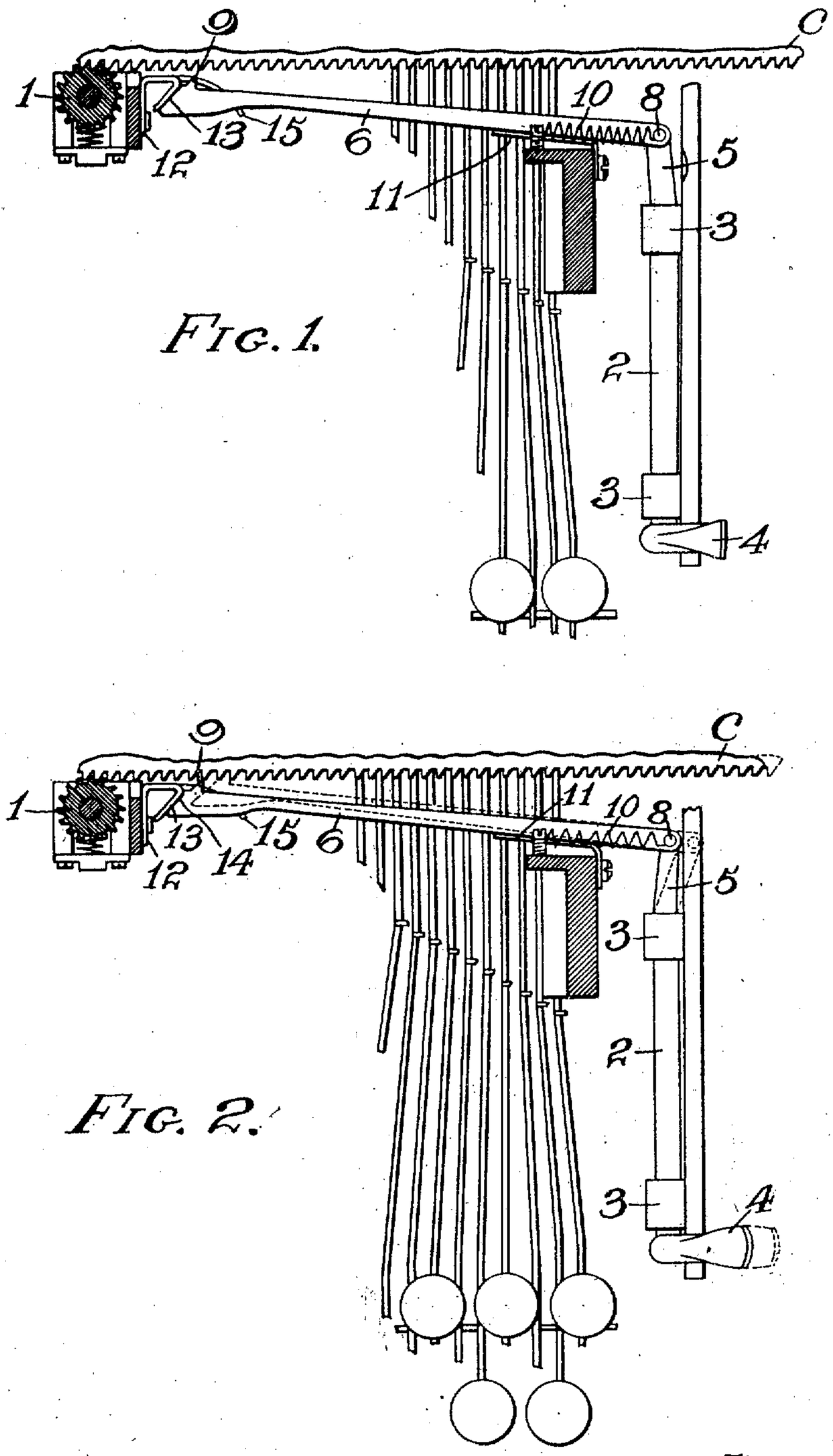

FIG. 1.

FIG. 2.

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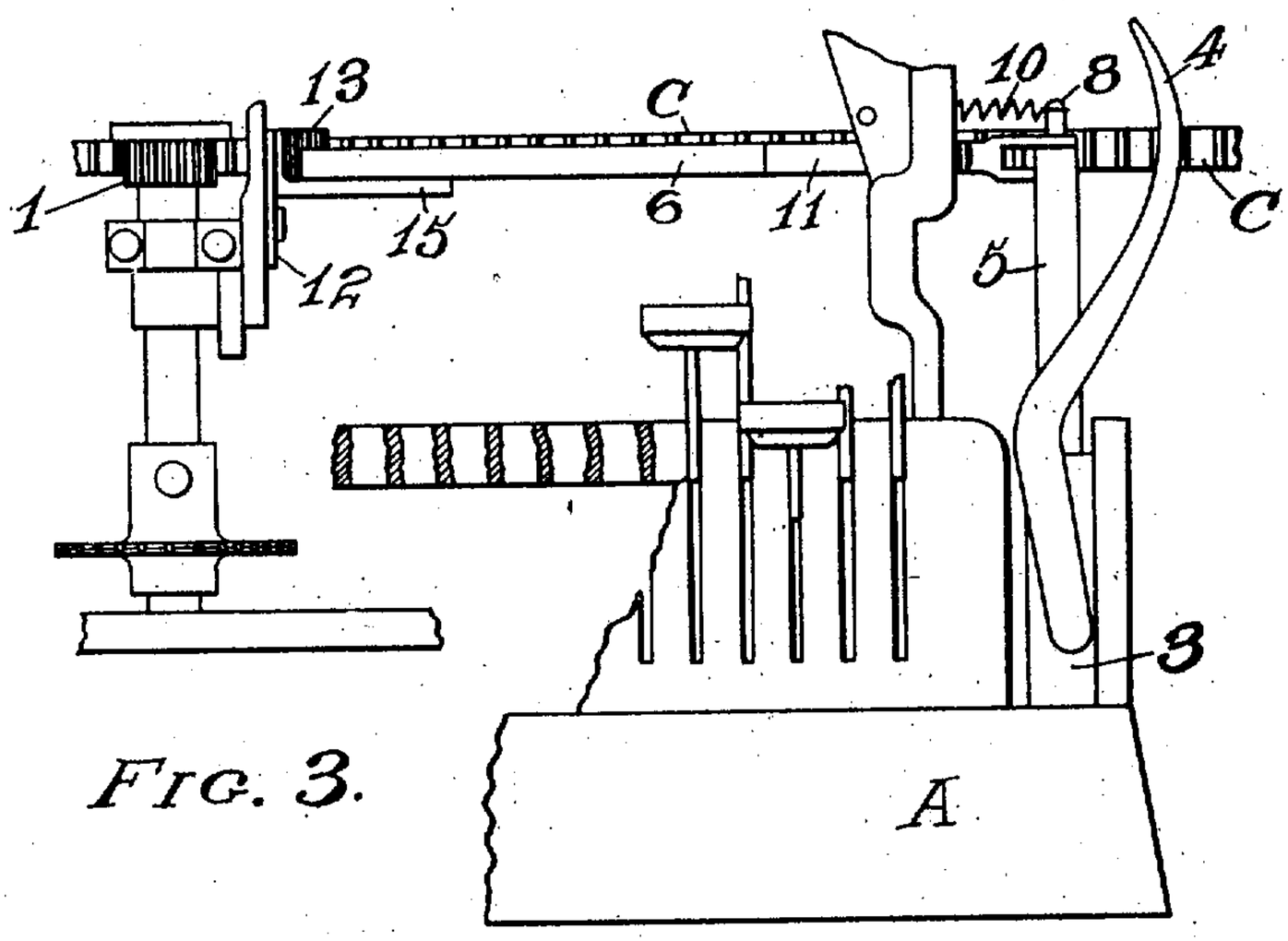

FIG. 3.

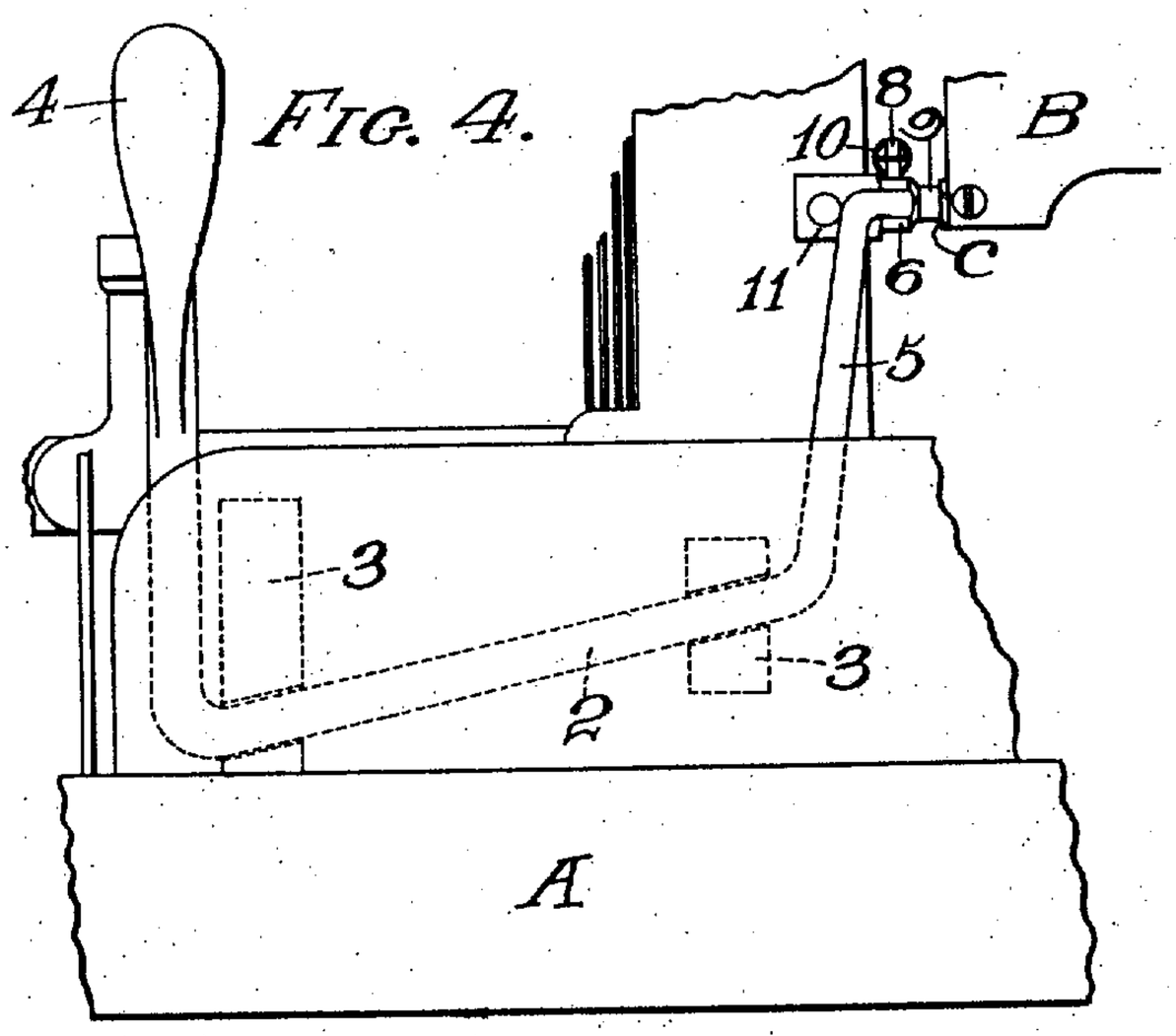

FIG. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM W. TORRENCE, OF SCHENECTADY, NEW YORK, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

BACK-SPACING MECHANISM.

No. 850,106. Specification of Letters Patent. Patented April 9, 1907.

Original application filed May 16, 1903, Serial No. 157,417. Continuation of abandoned renewal application filed November 29, 1905, Serial No. 289,667. This application filed November 6, 1906. Serial No. 342,303.

To all whom it may concern:

Be it known that I, WILLIAM W. TORRENCE, a citizen of the United States, residing in Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Back-Spacing Mechanism for Type-Writers, of which the following is a specification.

My invention relates to an improvement in type-writers, and has to do more particularly with back-spacing mechanism adapted for use when it is desired to move the carriage back a space, or as many spaces as desired for that matter, the mechanism being arranged at one side of the keyboard, so that the operator can back-space the carriage by pressing his thumb against a lever provided for that purpose without the necessity of reaching out and taking hold of the carriage.

With these objects in view the invention consists in a rocking lever having a thumb-piece at one end and a dog pivotally connected at the other and in position to engage teeth on the carriage-rack, whereby to back-space the carriage a space at a time with each rocking movement of the lever.

In the accompanying drawings, Figure 1 is a view of a portion of the type-writer, showing this back-spacing mechanism applied thereto. Fig. 2 is a plan view. Fig. 3 is a front view, and Fig. 4 is a view from one side of the machine.

A represents the base or frame of the machine B is the carriage, and C the usual rack-bar connected with the carriage and controlled by pinion 1, the teeth of which normally engage the teeth of the rack-bar.

The numeral 2 indicates a rock-lever pivoted in bearings 3 3 in the side of the machine and provided at one end with an upturned thumb-piece 4 at one side of the keyboard and at the other end with an arm 5, the extreme upper end of which is preferably bent over horizontally about on a level with the rack-bar C.

A dog or pawl 6 is pivotally connected with the horizontally-disposed end of this arm by means of a pin 8, and this dog or pawl is provided with a tooth 9, adapted to engage between two teeth of the rack-bar. This tooth 9 inclines in a direction to correspond with the teeth of the rack-bar to facilitate and insure its entering and fitting therebetween, so that it will take a firm hold and retain that hold until the carriage is locked in that position. The rocking lever is normally held inward by a spiral spring 10, which extends from the frame of the machine by the pin 8. A flat plate-spring 11, secured to the frame of the machine, presses against the dog or pawl and normally forces it toward the rack-bar.

A bracket 12, secured on the frame of the machine opposite the free end of the dog or pawl, is provided with an inclined surface 13, upon which the beveled end 14 of the pawl or dog rides when the thumb-piece is released, whereby to throw it outward or forward and its tooth out of engagement with the tooth of the rack-bar. An arm 15 extends horizontally from this bracket beneath the free end of the dog or pawl for the purpose of supporting the latter at that point.

In operation when the operator desires to space the carriage backward he simply presses with his thumb outward on the thumb-piece. This moves the dog endwise to the right, and as it is moved the plate-spring tends to swing it inward toward the rack-bar and does swing it inward as the dog recedes from the inclining surface 13 of the bracket 12, whereupon its tooth engages between two teeth of the rack-bar, and the further movement of the thumb-piece to the right until its limit is reached is just sufficient to move the carriage the space of one tooth, whereupon it is caught in the usual way. Then to move it another space this operation is repeated, the dog riding back over one or two teeth and thence outward upon the inclined surface with each return movement of the parts caused by the spiral spring 10, thus throwing the tooth of the dog or pawl out of the path of the rack-teeth so as not to interfere with the usual forward spacing operation of the carriage.

This mechanism is very convenient when it is desired to return the carriage one or more spaces, which exigency is continually arising and which ordinarily requires much loss of time, and it is the common practice in back-spacing to take hold of the carriage and move it bodily, which operation not only necessitates reaching out with one or both

hands, but also requires the exercise of considerable care and frequently pushing back and forth in order to get the carriage at precisely the right point, but by the use of my improved attachment all this difficulty is absolutely avoided, and not only is time saved, but the back-spacing is done with absolute precision and without appreciably changing the position of the hand from its normal place in range of the keyboard for the reason that the thumb-lever is on the keyboard, or, more accurately speaking, at the right-hand end thereof.

Another feature of marked importance is that the attachment may be applied without appreciable alteration of the machine.

Changes of a more or less slight nature may be resorted to without departure from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein described.

Having thus described my invention, I claim—

1. The combination with a toothed bar, a stationary bracket having an inclined surface, and an outwardly-extending arm, of a dog or pawl which normally rests loosely upon the arm, and a spring connected with the pawl which acts normally to force the latter against the incline to remove the pawl from the toothed bar.

2. The combination with a toothed bar, a stationary bracket having an inclined surface, and an outwardly-extending arm, of a dog or pawl which normally rests loosely upon the arm, a spring which normally throws it toward the incline whereby to remove it from the teeth and means for causing it to engage the toothed bar when removed from the incline.

3. The combination with a toothed bar, a stationary bracket having an inclined surface, and an outwardly-extending arm, of a dog or pawl which normally rests loosely upon the arm, a spring which normally throws it toward the incline whereby to remove it from the teeth, means for causing it to engage the toothed bar when removed from the incline, and a rock-lever for operating the dog or pawl.

4. The combination with a toothed bar, bracket and arm, the bracket having an inclined surface thereon, of a pawl or dog constructed and adapted to be moved back and forth in proximity to the toothed bar, a spring acting to cause the dog or pawl to engage the toothed bar when moved in one direction and the inclined surface when it moves in the other direction, which surface removes it from the toothed bar.

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Witnesses:

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