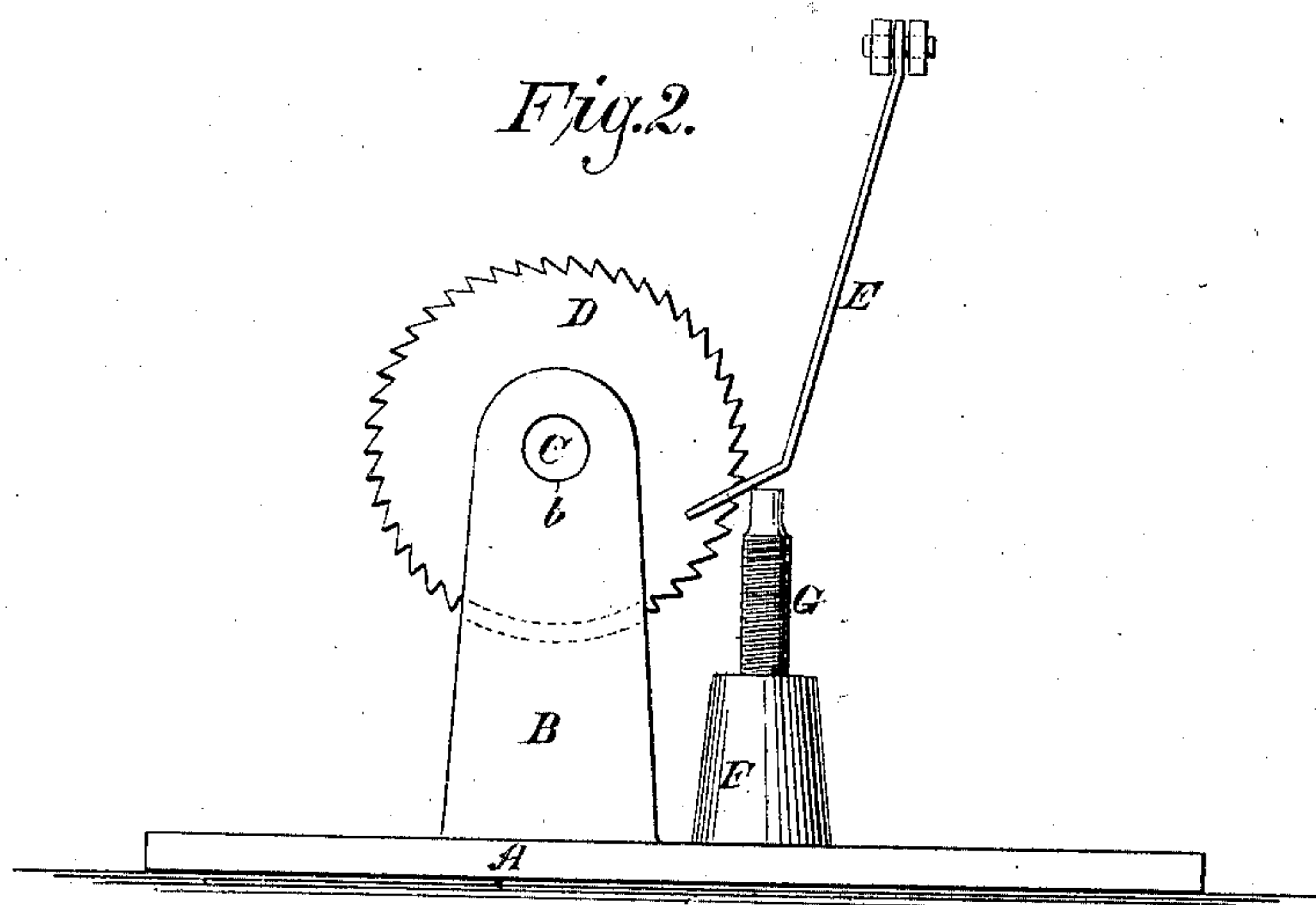
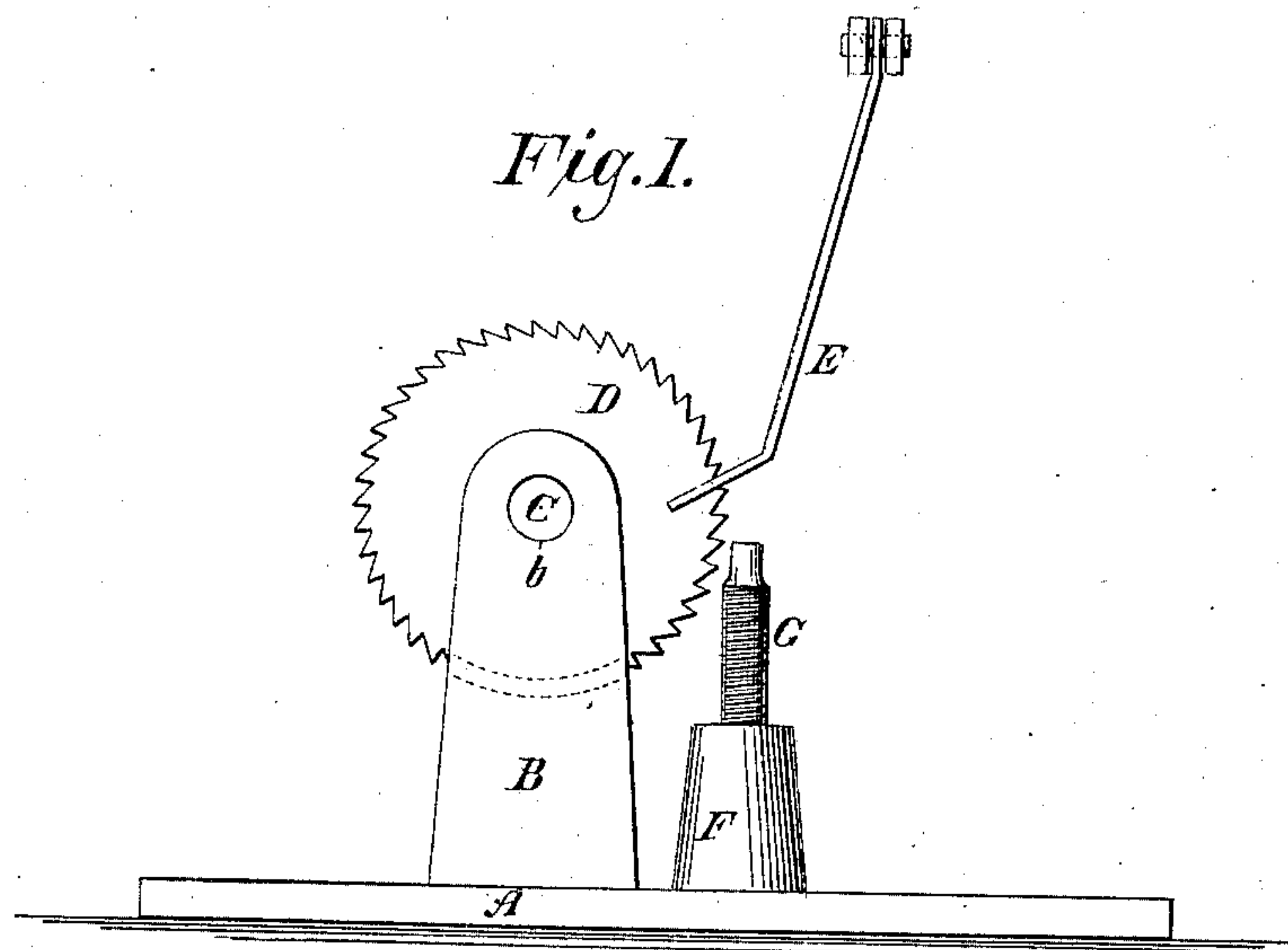


(No Model.)

J. N. WILLIAMS.
STOP AND LOCK FOR PAWL AND RATCHET MECHANISM.

No. 312,942.

Patented Feb. 24, 1885.



WITNESSES:
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JOHN NEWTON WILLIAMS, OF STAPLETON, NEW YORK.

STOP AND LOCK FOR PAWL-AND-RATCHET MECHANISM.

SPECIFICATION forming part of Letters Patent No. 312,942, dated February 24, 1885.

Application filed November 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN N. WILLIAMS, a citizen of the United States, residing at Stapleton, in the county of Richmond and State of New York, have invented a new and useful Mode of Simultaneously Stopping and Locking Pawl-and-Ratchet Mechanisms, of which the following is a specification.

My invention relates to means for actuating
10 a pinion or ratchet wheel or bar by the reciprocating movement of a trip or pawl, in combination with a device for intercepting the motion of the pawl when it has reached any desired point, and utilizing the position
15 which the parts assume when the motion of the pawl is interrupted for stopping and locking the pinion or ratchet, and preventing the acquired momentum thereof from carrying it beyond the point where the pawl directly carries it.
20

The object of the above-described arrangement is to provide a means for checking and locking the pinion or ratchet at a certain point when the said ratchet directly or indirectly controls the movement of delicate mechanism, which mechanism is adapted to be operated by and respond to the reciprocating movement of the pawl or trip. For this purpose the stop is made adjustable, so that it
25 will limit the throw of the pawl to any desired length; and this adjustment will depend on and be subsidiary to the amount of movement desired for the ratchet, and this latter is subservient to the feed or movement required in the mechanism which the said ratchet operates and controls. If the ratchet, by virtue of its momentum, were permitted to move beyond the proper point at any stroke, its usefulness would be impaired or destroyed. The
30 utility of the lock is therefore apparent.
35

Referring to the accompanying drawings, which form a part of this specification, Figure 1 represents in side elevation one form of ratchet mechanism to which my invention is
45 applicable, the pawl being shown in retracted position. The form of mechanism here shown is a ratchet-wheel mounted on a rotating axis; but it will be evident that without material change the invention is applicable to that form of
50 feed mechanism in which the ratchet is in the

form of a bar, instead of a wheel, and in which it has a reciprocating instead of a rotary motion. Fig. 2 is a similar view showing the pawl or dog projected and stopped, thus simultaneously locking the ratchet.

D is a pinion or ratchet wheel, which may be supported in any ordinary or preferred manner, so as to be capable of rotation on its axis. For purpose of illustration I have here shown the axis C of said ratchet journaled in standards B, which are mounted on a base-plate, A.

G is a stop or projection, which may be supported in a standard, F, on base-plate A, or in any other desired manner. The interior of the standard F and the extension of the stop G may be provided with screw-threads, by which means the said part G may be adjusted in relation to the ratchet-wheel D.

In the form of mechanism here shown the pawl is provided with a bent portion, e, which is adapted to bear against the stop G at the end of its downward stroke. When thus checked, the end of the pawl immediately acts as a key placed between the stop and the back of one tooth of the ratchet. The ratchet is thus not only locked from any further forward motion due to its inertia, but is prevented from being moved by the application of any external force.

It will be understood that while describing the above as one form of my invention I do not limit myself to such form. The stop G is preferably adjustable either in the manner here shown or in some other manner; but a sufficiently perfect result may sometimes be secured by having said stop perfectly rigid. The pawl E may also be varied in form as desired, so long as such a form is retained as will enable it to act as a key between the stop and ratchet.

I am aware that dogs actuated by the feed-lever have been employed for stopping the motion of ratchet-feeds; but such devices, as heretofore constructed, have added materially to the friction and inertia of the working parts of the mechanism, and have thus been practically inapplicable to such delicate mechanism as paper-feeding devices and those complicated ratchet-feeds employed in electrical

and many other appliances. My improved stop, while of greater simplicity than such devices, adds nothing to the weight or number of the moving parts of the mechanism, and thus does not in any sense detract from the perfect operation thereof.

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

10 1. In combination with a ratchet and a pawl adapted to operate the same, a stop or projection arranged to engage the said pawl at the desired limit of its stroke, substantially as set forth.

15 2. In combination with a ratchet and its

operating-pawl, an adjustable stop for limiting the stroke of said pawl, substantially as set forth.

3. In combination, a pawl-and-ratchet mechanism and a stop or projection terminating at a point near the periphery of the ratchet for simultaneously stopping the pawl and locking the ratchet.

4. The combination of the pawl, the ratchet-wheel, and the standard having an adjustable extension, as set forth.

J. NEWTON WILLIAMS.

Witnesses:

OCTAVIUS KNIGHT,
HARRY E. KNIGHT.