

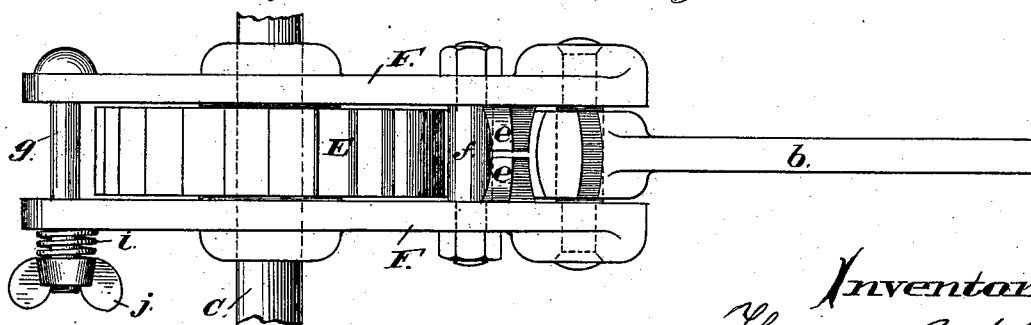
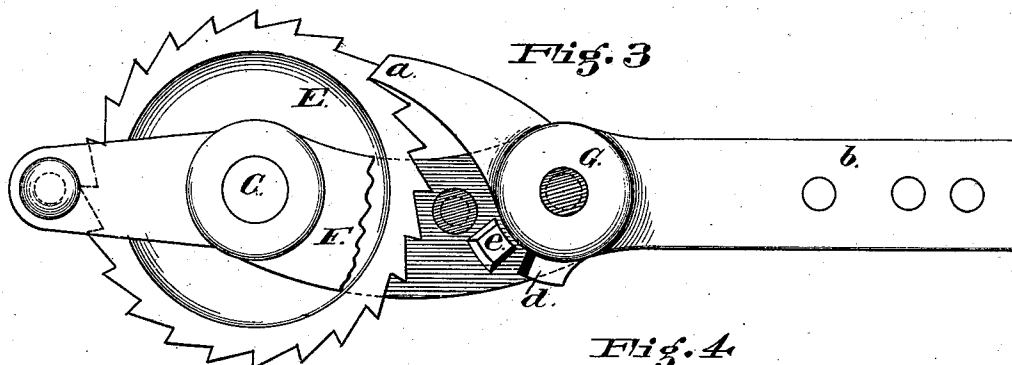
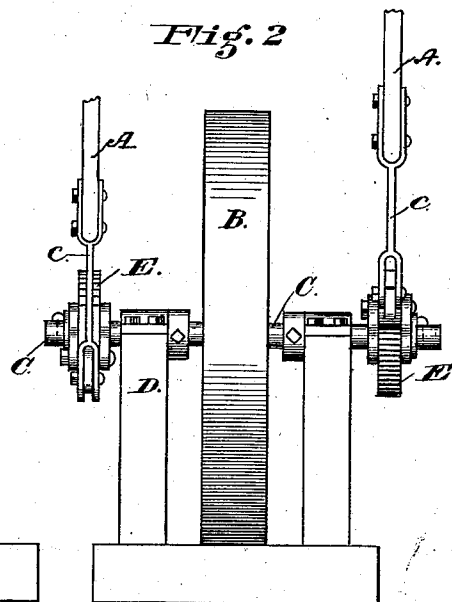
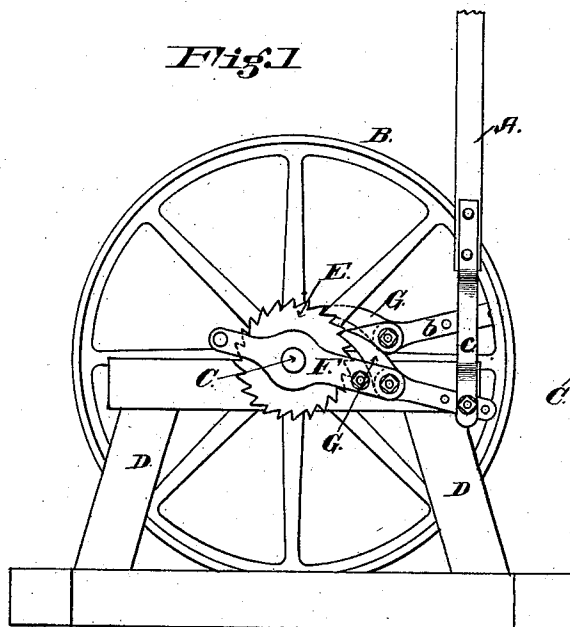
(No Model.)

H. CROFT, Jr.

RATCHET PAWL FOR POWER CONVERTERS.

No. 256,465.

Patented Apr. 18, 1882.



Attest

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HENRY CROFT, JR., OF SPRINGFIELD, OHIO.

RATCHET-PAWL FOR POWER-CONVERTERS.

SPECIFICATION forming part of Letters Patent No. 256,465, dated April 18, 1882.

Applied for March 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY CROFT, Jr., a citizen of the United States, residing at Springfield, Clarke county, Ohio, have invented certain new and useful Improvements in Ratchet Pawls or Dogs for Power-Converters, of which the following is a clear, full, and exact description.

My invention relates to an improvement in ratchet pawls or dogs, designed especially for use in power-converters, as an improvement upon my former patent, No. 253,515, of February 14, 1882, though capable of use in all machines where pawls are used to revolve ratchet-wheels.

The object of my invention is twofold: first, to prevent the possibility of the slipping of the pawls in their engagements with the ratchets, and, secondly, to avoid the wear and noise occasioned by ordinary pawls in slipping back over the teeth of the ratchets as they are retracted for a fresh grip or engagement.

The novelty consists in so pivoting the pawl to its carrier that when power is applied to the pawl to revolve the ratchet a leverage is effected which positively and firmly holds the pawl into engagement with the ratchet; secondly, in combination with the pawl and its pivoted carrier, of a stop, the parts being so arranged that in the backward throw of the pawl it is lifted completely out of engagement and contact with the ratchet, and does not merely slip back, as is the case with ordinary pawls; also, in details of construction, all as will be herewith set forth.

In the accompanying drawings, Figure 1 is a side elevation of my power-converter for converting reciprocating into rotary motion, showing the application of my improved pawls. Fig. 2 is an end elevation of the same. Fig. 3 is an enlarged side elevation of my improved pawl and carrier, a portion of one side of the latter being broken away. Fig. 4 is a plan view of Fig. 3.

The same reference-letters refer to like parts in the different figures.

A A represent the vertically-reciprocating beams, as in my patent previously alluded to; B, the driving-wheel; and C, the shaft of said wheel, suitably journaled in any frame, D.

E E are the ratchet-wheels, keyed or otherwise fastened upon the shaft C.

Hung upon the shaft C and straddling the ratchets are the pawl-carriers F, which in this instance are links projecting both ways from their pivotal points. Between the front ends of these links are pivoted the pawls G, extending forward to form engaging-noses *a* with the ratchet-teeth and backward to form a means of attachment, *b*, for their motors, which in this instance are the beams A, connected by links *c*, as seen in Figs. 1 and 2. Any suitable stop or shoulder, *d*, upon each of the pawls is arranged to engage with the stops or detents *e*, projecting from the inner sides of the links, as seen in Figs. 3 and 4, for a purpose to be presently explained. The links forming the carriers of each pawl are united by bolts *f* and *g*, in addition to the pin or bolt forming the pawl-pivot. It is desirable that the links should slightly embrace the ratchets with some frictional contact, and I accomplish this by interposing a spiral spring, *i*, between the side of the link and the clamping-nut *j* of the bolt *g*, as seen in Fig. 4. By this means the frictional contact between the links and ratchets can be regulated as desired. Now, it will be seen that when power is applied to lift the rear ends, *b*, of the dogs their engaging-noses are held into positive contact with the ratchets, and the greater the resistance the more positive will be the engagement, so that all possibility of slipping is obviated. Upon the return-stroke of the dog the shoulder or stop *d* will, owing to the frictional contact of the carrier-links and ratchets, come in contact with the detents *e*, and the nose of the dog will be lifted entirely out of contact with the ratchet-teeth, instead of merely slipping back over them, and thus the noise and wear incident to the latter mode will be entirely prevented.

I do not propose to limit myself to the precise form of the carrier, as it may be infinitely varied, and instead of links united by pins and bolts, a single forked piece might be employed, with other means for securing the frictional contact with the ratchet, such as interposed rubber cushions or equivalent means. Where the links are used the character of the uniting

pins or bolts may be changed in a variety of ways, such as would occur to any mechanic.

Having thus fully described my invention, I claim—

5 1. The combination, with a ratchet-wheel, of a driving-pawl, a pivoted pawl-carrier to which said pawl is pivoted, and an extension of said pawl beyond its pivotal point, whereby upon
10 applying power to said extension of the pawl a positive lock is effected between the engaging end of the pawl and the ratchet.

2. The combination, with a ratchet-wheel, of an encompassing pawl-carrier held to said

ratchet by frictional contact and provided with a detent or stop, and a pawl pivoted to said 15 carrier and likewise provided with a detent or stop, whereby upon the backward stroke of the pawl the frictional contact of the carrier and ratchet insures the entire disengagement of the ratchet and pawl, as and for the purpose 20 specified.

HENRY CROFT, JR.

Witnesses:

OSCAR T. MARTIN,
JAMES FOLEY.