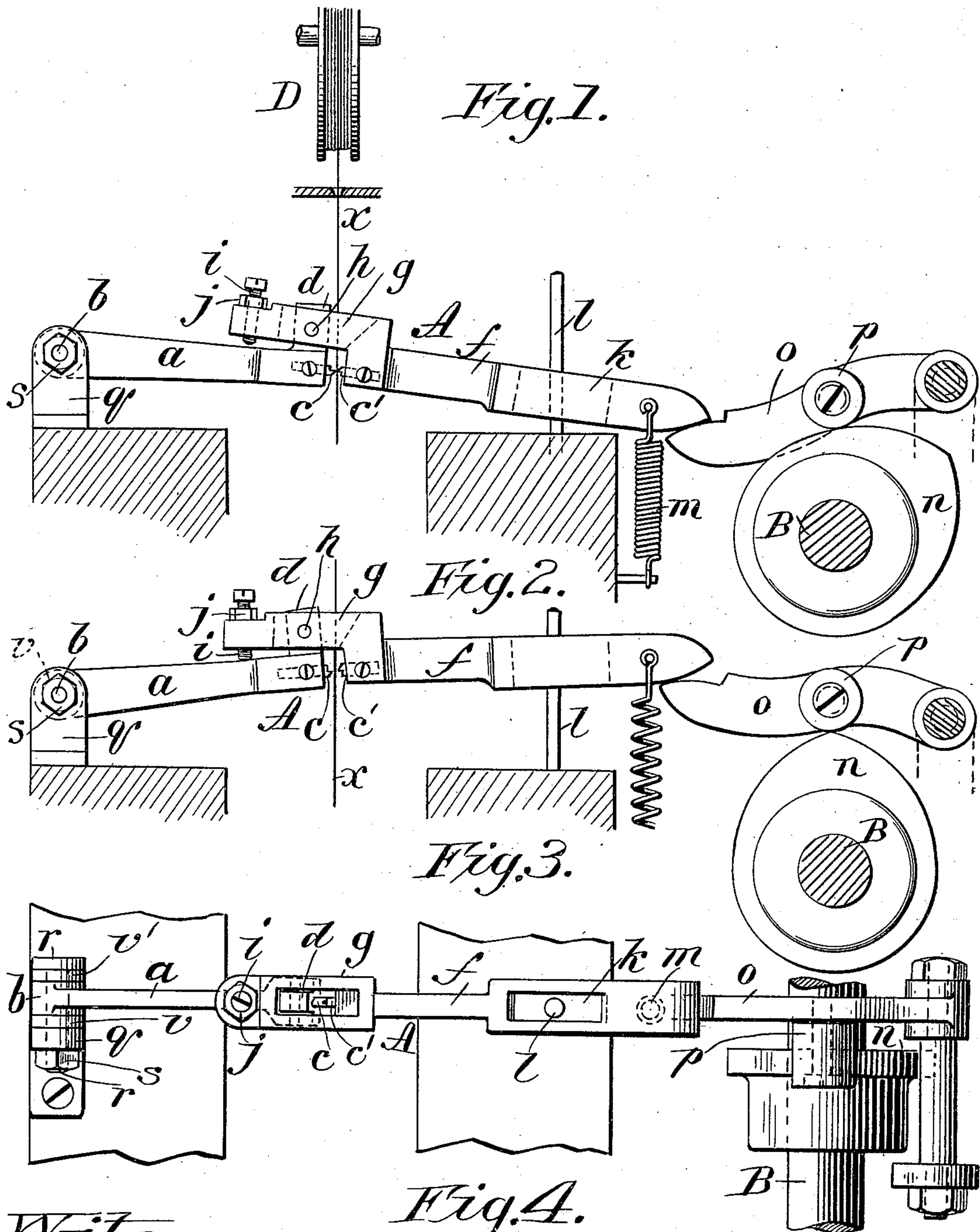


(No Model.)

F. H. HARDMAN.  
WIRE FEEDING MECHANISM.

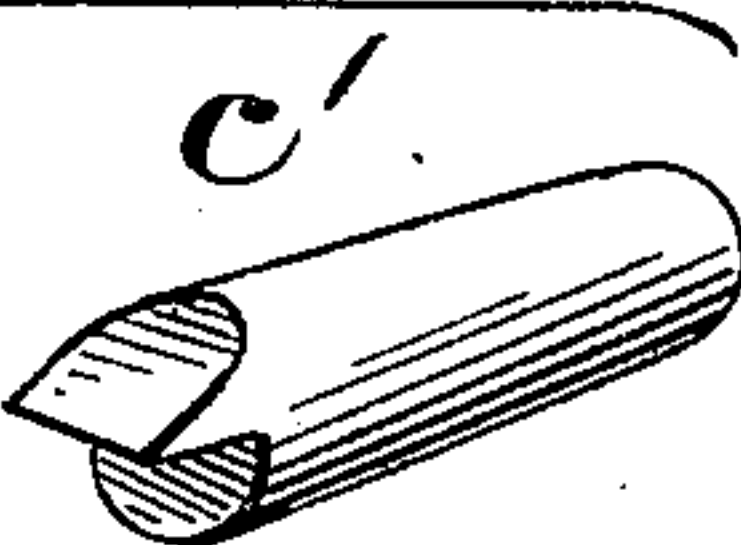
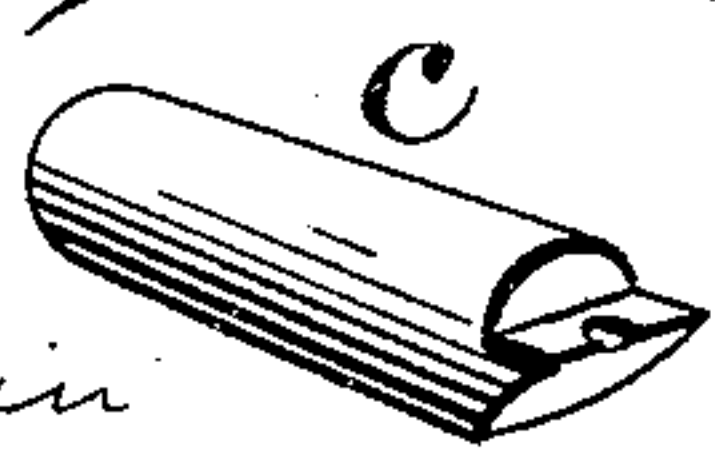
No. 478,598.

Patented July 12, 1892.



Witnesses:

J. W. Garfield  
G. M. Chamberlain



Inventor

Fred H. Hardman  
by  
Chapman & Co  
Attys



# UNITED STATES PATENT OFFICE.

FREDERICK H. HARDMAN, OF BEVERLY, ASSIGNOR TO WALTER E. BENNETT, OF BOSTON, MASSACHUSETTS.

## WIRE-FEEDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 478,598, dated July 12, 1892.

Application filed August 21, 1891. Serial No. 403,368. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK H. HARDMAN, a citizen of the United States, residing at Beverly, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Wire-Feeding Mechanisms, of which the following is a specification.

This invention relates to mechanism for feeding or drawing wire off from a coil, reel, or other similar supply in successive lengths or "hitches," each length or section of wire drawn down or forward at each impulse of the machine being in a proper position to be severed from the main length of the supply-wire and to be suitable for utilization in the formation of a staple or eye shank for a shoe-button or for other purpose for which a given portion of wire may be deemed desirable.

It will be apparent that the mechanism of this invention may act to feed forward cord, banding, or like flexible material, as well as wire, although the same has been primarily designed for the feed of wire for the particular purpose mentioned.

The invention consists in the combination or arrangement of parts, all substantially as will hereinafter more fully appear, and be set forth in the claims.

Referring to the accompanying drawings, in which this invention is illustrated, Figure 1 is a side elevation of the wire-feed mechanism, the parts thereof being shown in position as just completing the feeding operation. Fig. 2 is a view similar to Fig. 1, the parts, however, being shown in the position assumed just preparatory to effecting the feed of the wire. Fig. 3 is a plan view of the mechanism, and Fig. 4 is an enlarged perspective view of the nipper-jaws.

The device essentially embodies a two-membered lever, which as a whole is indicated at A in the drawings. The one member *a* of the articulated lever is pivotally mounted by its one end *b* and at its other end is provided with a nipper-jaw *c*, and at such end carrying the nipper-jaw the member has an upwardly-extended lug *d*. The other member *f* of the lever is near its one end provided with the off-set yoke-formed arm *g*, which embraces and is pivotally connected to the said lug *d*, as at *h*. The said yoke-formed arm *g* is pro-

vided at its extremity with the adjustable stop-screw *i*, with the check-nut *j*, the point of which screw may be brought to a greater or less proximity to the top of the member *a*. The said member *f* is in its end which is opposite the end of the member *a* provided with another nipper-jaw *c'*. The said member *f* is vertically slotted, as indicated at *k*, receiving through the slot the guiding and steadying stud *l*, which is provided upon a suitable support therefor, and a spiral spring *m* of considerable power is by one end attached to exert a downward reaction upon the outer end of the member *f*, the other end of said spring being confined in any suitable manner.

B represents a driving or driven shaft having the cam *n* thereon, which acts upon a pivotally-mounted lever *o* through the friction-roller *p*.

The pivotal connection of the member *a* is preferably made in such a manner that there may be constituted thereat a tension or frictional resistance, and, as shown, *q* represents a vertical lug, which forms the pivotal connection-support, and *r* represents the headed bolt for forming the pivot-axis. Between the lug *q* and the hubbed end *b* of member *a* a washer *v* of leather or analogous material surrounds the pivot-bolt, and also between the other side of the hubbed end *b* of the lever member and the head of the bolt another similar washer *v'* is provided, the confinement and compression of the parts being effected to secure the desired tension by the turning up of the nut *s*.

D indicates a wire-reel as in a position above the jaws of the articulated lever, the axis thereof being horizontal, so that the wire *x* may be drawn off therefrom vertically to extend down, as shown, through the yoke-formed arm *g* and between and to the nipping action of the pair of jaws *c c'*.

Now it will be plain that with the parts in the positions indicated in Fig. 1, one feed movement having just been effected, as the cam-lever *o* is forced upwardly to carry the member *f* also upwardly the same will swing slightly relative to and without any action upon the friction-constrained member *a*, when the jaws will separate to release and run free over the wire; but of course the abutment *i*,



quickly coming to contact upon the member *a*, then insures the swinging of both lever members as one. The cam-lever next retracting the spring insures the downswinging of the member *f*, so that the jaw *c'* thereof will move toward the other jaw *c* to grip the wire, and then the two-membered lever *A* will as one swing downwardly to the limit of its movement, carrying the wire therewith. The employment of the tension or resistance devices for the member *a* is regarded as advantageous, for it enables the said member to remain immovable at the times the other member *f* is releasing its jaw from contact with the wire and on taking a new bite thereupon, and such devices furthermore insure the steady and even running of the mechanism, all jumping and pounding being avoided.

Should it become desirable to feed wire of a different gage—say of a larger diameter—the abutment-screw may be raised, when a greater separation of the jaws will be permitted.

What I claim as my invention is—

1. In a feeder for wire, &c., a two-membered lever having one member thereof pivotally mounted, whereby the said lever may have a swinging movement, and the second member thereof pivoted upon the other and adapted to have relative thereto a limited swing, said members at proximate portions thereof being provided with nipping-jaws, and a cam for imparting a backward and forward swinging movement to said lever, substantially as described.

2. In a feeder for wire, &c., a two-membered lever mounted for a swinging movement and the one member thereof pivoted upon the other and one provided with an adjustable stop device whereby its swinging movement

with relation to the other member may be adjustably limited, and said members at proximate portions thereof provided with nipping-jaws, and devices for imparting swinging movements to said two-membered lever, for operation in the manner set forth.

3. In a feeder of the character indicated, a lever consisting of two members, the one pivotally mounted on a suitable support and having tension or friction devices for the purpose set forth and the other member pivotally hung on the first one, and said members at proximate portions thereof provided with nipping-jaws, and means for swinging the said two-membered lever, substantially as described.

4. A feed device for wire, &c., consisting of a lever composed of two members *a* and *f*, the one *a* being pivotally mounted and provided with a lug *d* and the other *f* provided with an offset-arm pivotally mounted on said lug and having a stop, said members having the nipping-jaws, and means for swinging the parts, substantially as described.

5. In a feed device for wire, &c., in combination, the member *a*, pivotally mounted, and said member having the lug *d* and jaw *c*, and the friction-washers and confining devices at the pivotal support for said member, the member *f*, provided with the offset yoke-shaped arm *g*, pivotally hung on said lug, and the stop-screw *i*, and the jaw *c'*, the spring *m*, applied for downwardly swinging said member *f*, the cam-lever *o*, pivoted adjacent to and having an engagement with the member *f*, and the cam *n*, mounted to actuate the said lever *o*, substantially as described.

FRED. H. HARDMAN.

Witnesses:

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M. A. BIGELOW.