(No Model.) 2 Sheets—Sheet 1.

F. A. PECK.

MACHINE FOR REDUCING WIRE.

No. 428,519. Patented May 20, 1890.

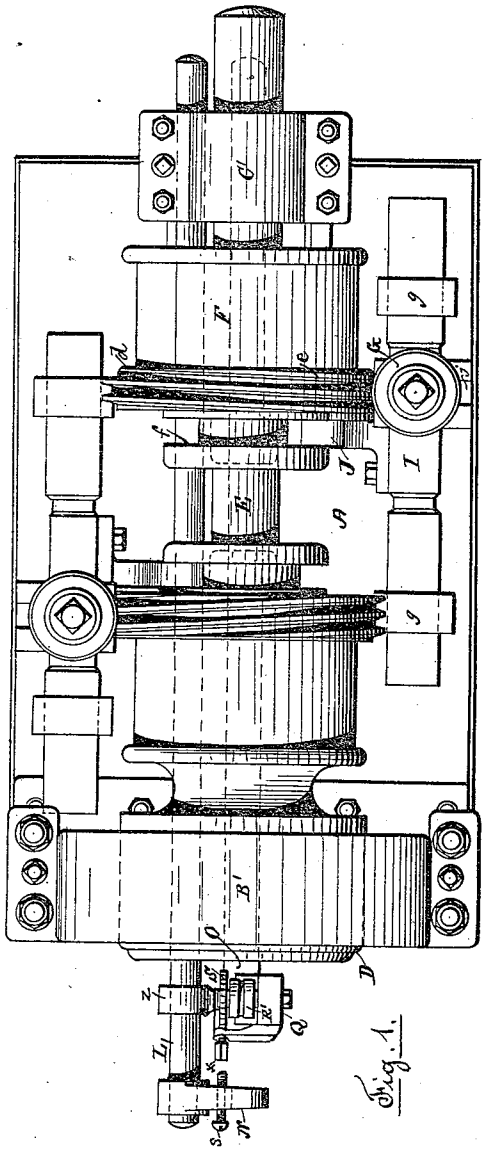

Fig. 1.

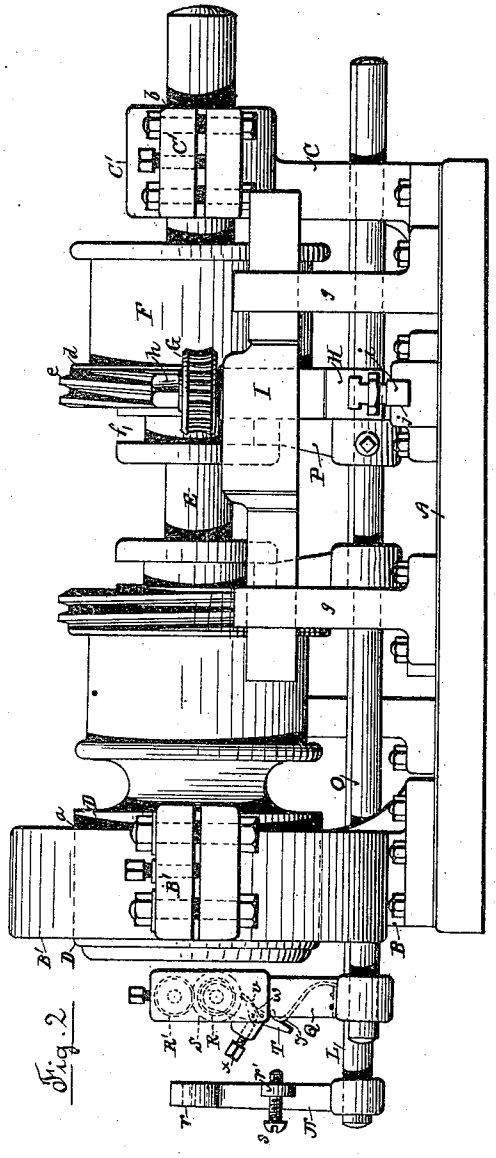

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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MACHINE FOR REDUCING WIRE.

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Fig. 3.

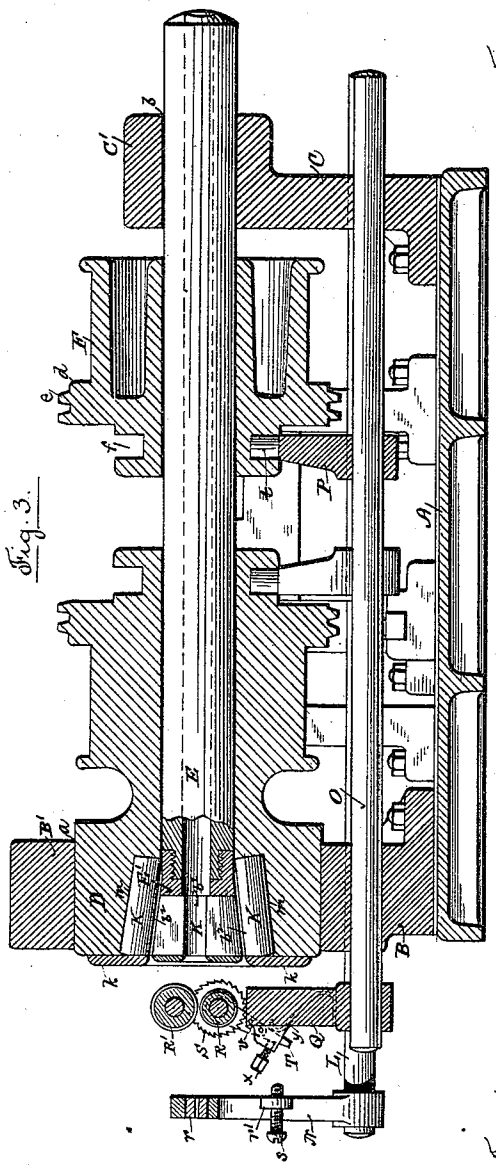


Fig. 6.

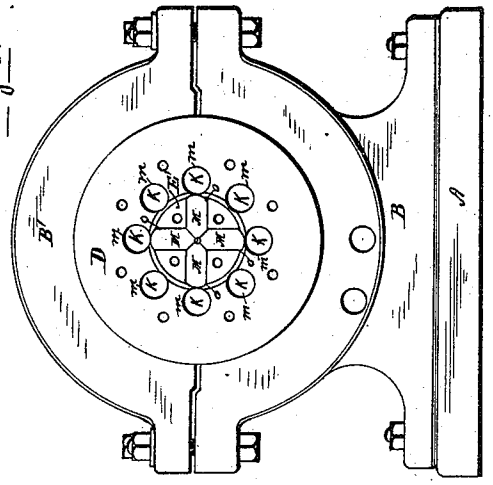


Fig. 5.

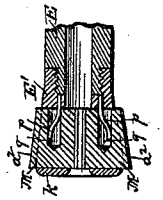
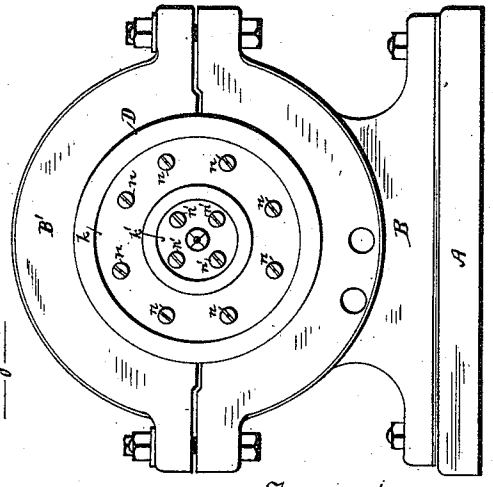


Fig. 4.



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UNITED STATES PATENT OFFICE.

FREDERICK A. PECK, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO DAGGETT & CLAPP, OF ATTLEBOROUGH, MASSACHUSETTS.

MACHINE FOR REDUCING WIRE.

SPECIFICATION forming part of Letters Patent No. 428,519, dated May 20, 1890.

Application filed December 23, 1889. Serial No. 334,741. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. PECK, a citizen of the United States, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Machines for Reducing Wire, of which the following is a specification.

My invention relates to that class of wire-reducing machines in which the reducing-dies are operated by rapid contact with beaters; and it consists in the improved construction and arrangements of parts, whereby the machine is made adapted for a greater range of work than heretofore.

Figure 1 represents a plan view of my improved machine. Fig. 2 represents a side elevation of the same. Fig. 3 is a longitudinal section. Figs. 4, 5, and 6 are detail views.

In the accompanying drawings, A is the bed-plate of the machine, and B a bearing-standard secured to the forward end of the bed A and provided with the friction-cap B′, and at the rear end of the bed A is secured the bearing-standard C, provided with the friction-cap C′. Within the bearing *a* of the standard B is placed the beater-holding head D, which is also loosely held upon the hollow arbor E, the said arbor being supported at its rearward end in the bearing *b* of the standard C, and upon the arbor E is secured the pulley F, which is provided with a raised rim *d*, having upon its periphery a screw-thread or worm *e*, and also provided with the annular groove *f*.

The worm *e* of the pulley F engages with a worm-gear G, which is secured upon an upright shaft *h*, held by a sliding bar I, and having at its lower end a slotted crank-arm H, provided with an adjustable crank-pin *i*, the lower end of the said crank-pin being held in the fixed groove *j*. The sliding bar I is supported in a horizontal position by means of the standards *g g*, and is provided with an attached arm J, which enters the groove *f* of the pulley, so that when the sliding bar I is moved in either direction by the action of the crank-pin *i* in the fixed groove *j* the pulley F and arbor E will be correspondingly moved.

The cylindrical rollers K K, which are preferably employed for the beaters, are made of hardened steel, and are inserted into a conically-inclined series of holes *m*, made in the end of the head D, and are retained in their places for operation and rotation by means of the annular plate *k*, which is secured to the head D by means of the screws *n*.

Upon the forward end of the hollow arbor E is secured the hollow head E′, which is provided with radial openings *o o*, adapted to receive the reducing-dies M M M M, which are retained in the openings *o* by means of the annular plate *k′*, which is secured to the head E′ by means of the screws *n′*, and when the dies are thus inclosed in the openings *o* by means of the plate *k′* they are adapted to be thrown outward by means of the springs *p*, inserted into the rear portion of the head E, and projecting forward into the openings *q* at the rear end of the die, as shown in the section, Fig. 5, and the dies M M are provided with the inclined faces a^2, which are adapted to engage with the correspondingly-inclined engaging-surface b^2 of the beaters K.

Upon the stationary rod L, which is supported by the standards B and C, is secured the arm N, provided at its upper end with a steel bushing *r*, for guiding the wire to the reel, and at a projecting lug *r′* at its side with adjusting-screw *s*.

Upon the sliding rod O, which is supported by means of the standards B and C, is secured the arm Q, which, by means of a projecting arm *z*, is also supported by and slides upon the stationary rod L, and at the upper end of the arm Q are placed the grooved rolls R R′ for feeding the wire through the machine.

Upon the shaft of the lower feeding-roll R is secured the ratchet-wheel S, and upon the same shaft is placed the ratchet-arm T, to which a ratchet-catch *v* is pivoted, the said catch being held in contact with the ratchet-wheel by means of the spring *w*, and the ratchet-arm T is held in its backward position against its adjusting-screw *x* by means of the spring *y*. Upon the sliding rod O is also secured the arm P, the upper end of which is provided with the roller *t*, held in the groove *f* of the pulley F, so that the arm P, rod O, arm Q, and feeding-rolls R R′ will be made to par-

take of the reciprocating movement of the die-head E′. In the operation of the machine, whenever it is desired to reduce the size of round wire, the beater-head D is to be clamped and held stationary by screwing down the cap B′ or otherwise, and then, upon revolving the pulley F, the arbor E and die-head E′ will revolve therewith, and the action of the worm *e* of the pulley F upon the worm-gear G will cause the revolution of the crank H and the consequent reciprocation of the die-head E′ within the beater-head D, and as the die-head E′ is carried forward the inclined position of the beaters K K will allow the dies to open outward to receive a new length of wire, which length of wire will be reduced in size as the head E′ is being drawn back within the head D by the continued action of the crank H, the dies M M being carried nearer and nearer to each other until the head E′ has reached its inner limit, and then the continued action of the crank H will again carry the head E′ forward, causing the dies to open, so as to receive another length of wire, and when the head E′ is moving forward the same movement will be transmitted to the arm Q, which carries the feeding-rolls R R′, and thus the wire being operated upon will partake of the reciprocating movement of the head E′, and when the arm Q nears the limit of its outward movement the ratchet-arm T will strike the end of the screw *s* upon the arm N, thus causing the proper feeding movement of the rolls R R′.

Heretofore in machines of this class the beaters have been set with their engaging-faces parallel to the axis of the beater-holding head, all such machines being restricted in their range of work and not adapted to self-feeding; but by arranging the engaging-faces of the beaters at an angle with the axis of the beater-holding head I am enabled, by means of a reciprocating movement, to gradually close the dies upon the wire while the required beating action is going on and to open the dies to receive another length of wire, which is fed forward, thus adapting the machine for automatic action and for a greater range of work than heretofore; and the inclination of the engaging-face of the beaters, as specified, constitutes the gist of my invention and is the foundation principle of the machine.

The inventions which are herein shown or described and not claimed, but which are shown, described, and claimed in my application for Letters Patent, Serial No. 319,806, filed August 7, 1889, are disclaimed in this application.

I claim as my invention—

1. The head provided with the reducing-dies, in combination with the concentric head provided with inclined beaters, and means for revolving the die-holding head within the beater-holding head, substantially as described.

2. The rotary head provided with the reducing-dies, in combination with the concentric head provided with inclined beaters, and means for reciprocating the die-holding head within the beater-holding head, substantially as described.

3. The rotary head provided with the reducing-dies, in combination with the head provided with inclined beaters, means for reciprocating the die-holding head to open and close the dies, and means for automatically feeding the wire between the open dies, substantially as described.

FREDERICK A. PECK.

Witnesses:
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WM. A. PECK.