

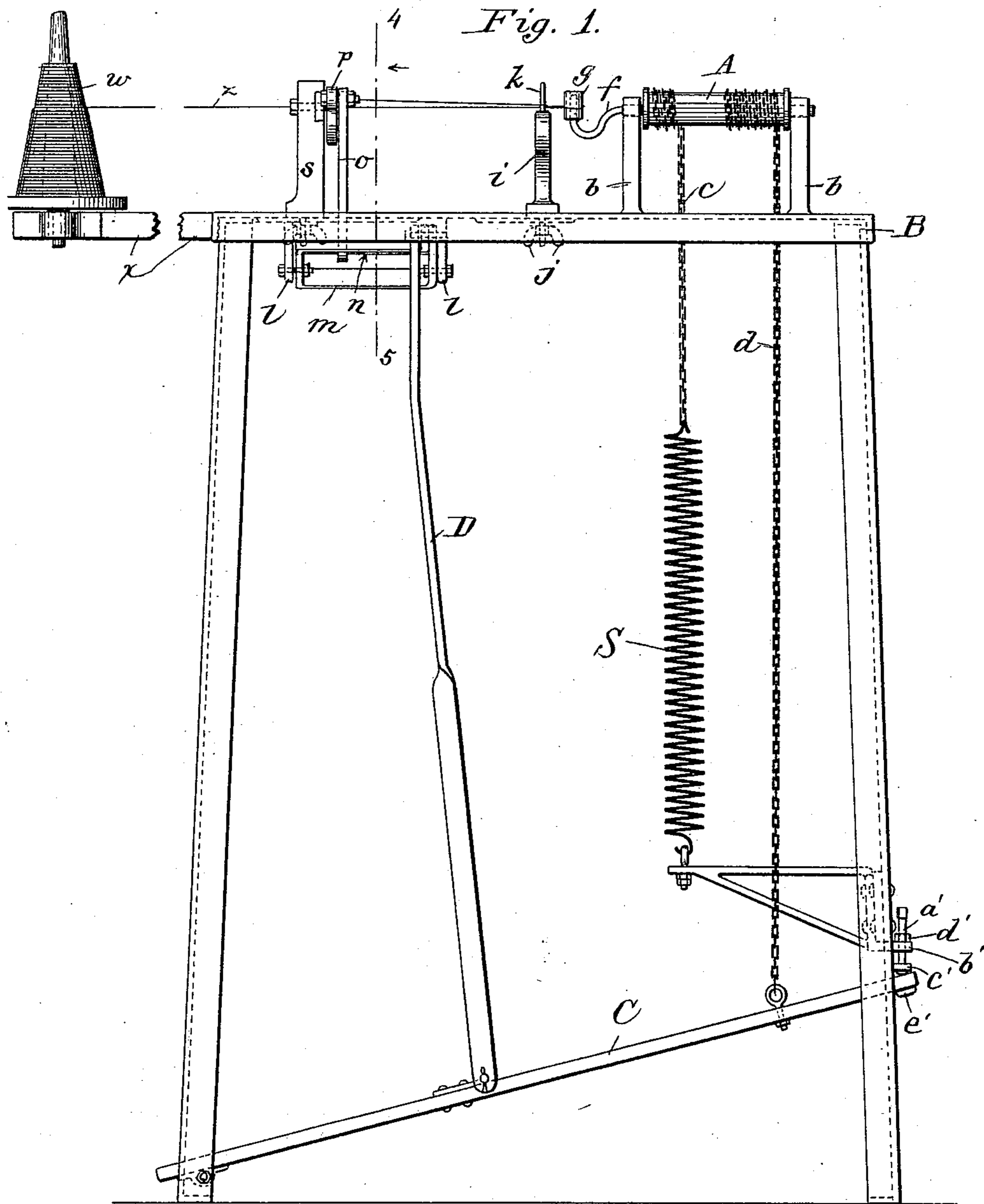
(No Model.)

3 Sheets—Sheet 1.

D. WHITE & A. F. LAGERWALL.
MACHINE FOR FORMING WIRE LOOPS.

No. 518,381.

Patented Apr. 17, 1894.



WITNESSES:

W. B. Shepherd.
Edw. C. Moore

INVENTORS

David White
Alexander F. Lagerwall
BY *Briesen & Knautz*

ATTORNEYS.

(No Model.)

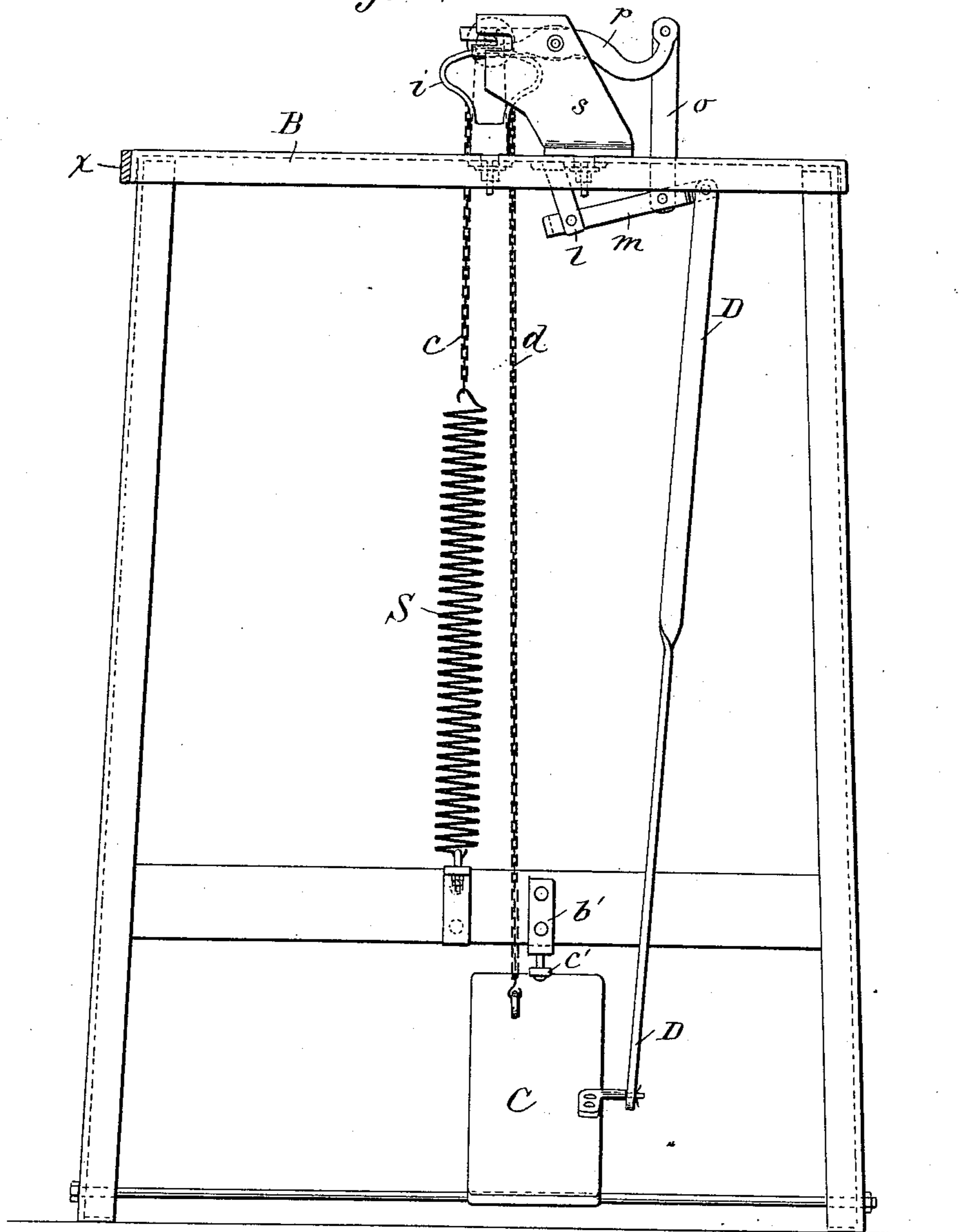
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Fig. 2.



WITNESSES:

Robt. B. Shepard.

Geo. C. Mance.

INVENTORS

David White
Alexander F. Lagerwall,

BY

Briesen Knauth

ATTORNEYS.

(No Model.)

3 Sheets—Sheet 3.

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Fig. 3.

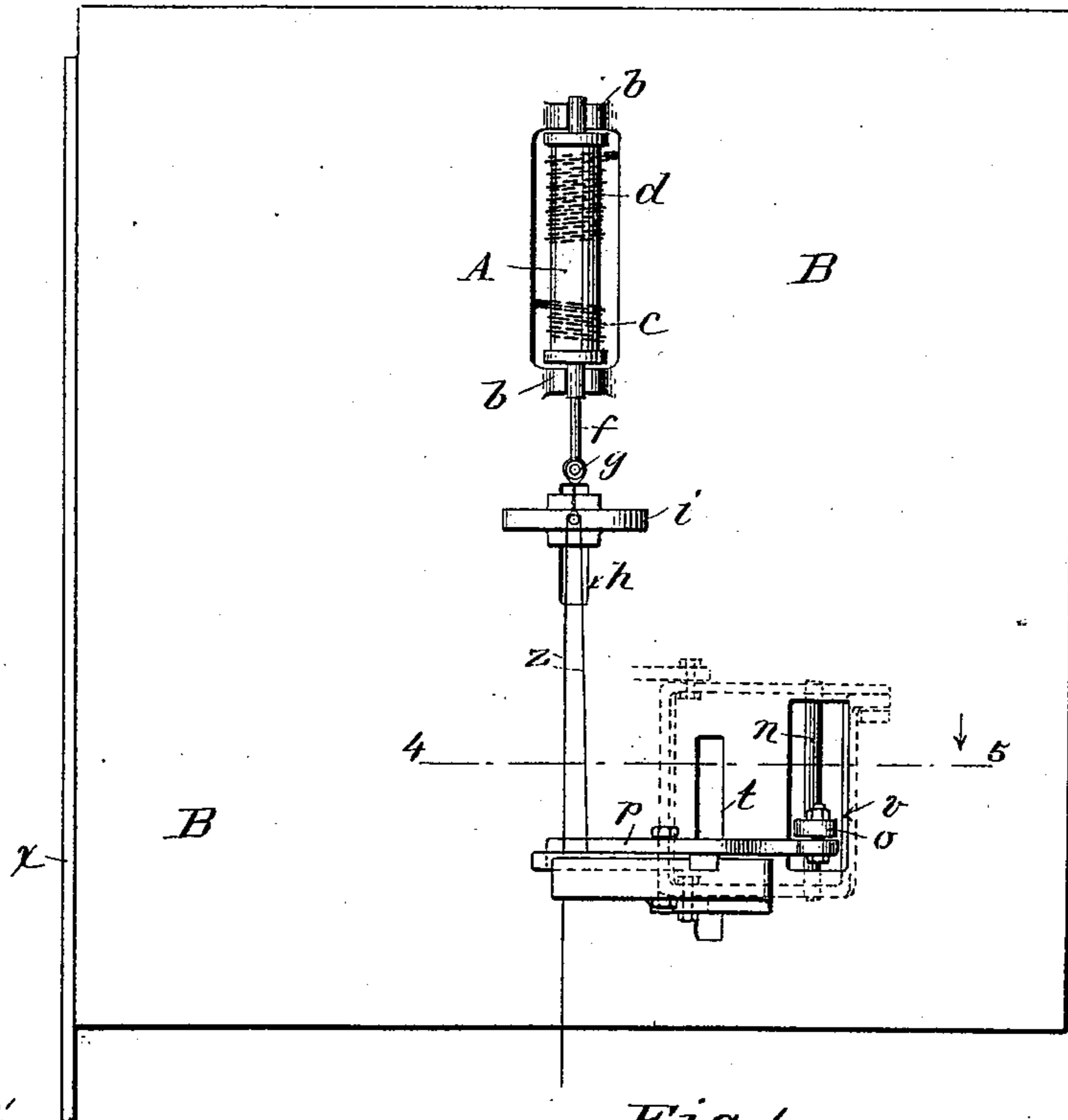


Fig. 4.

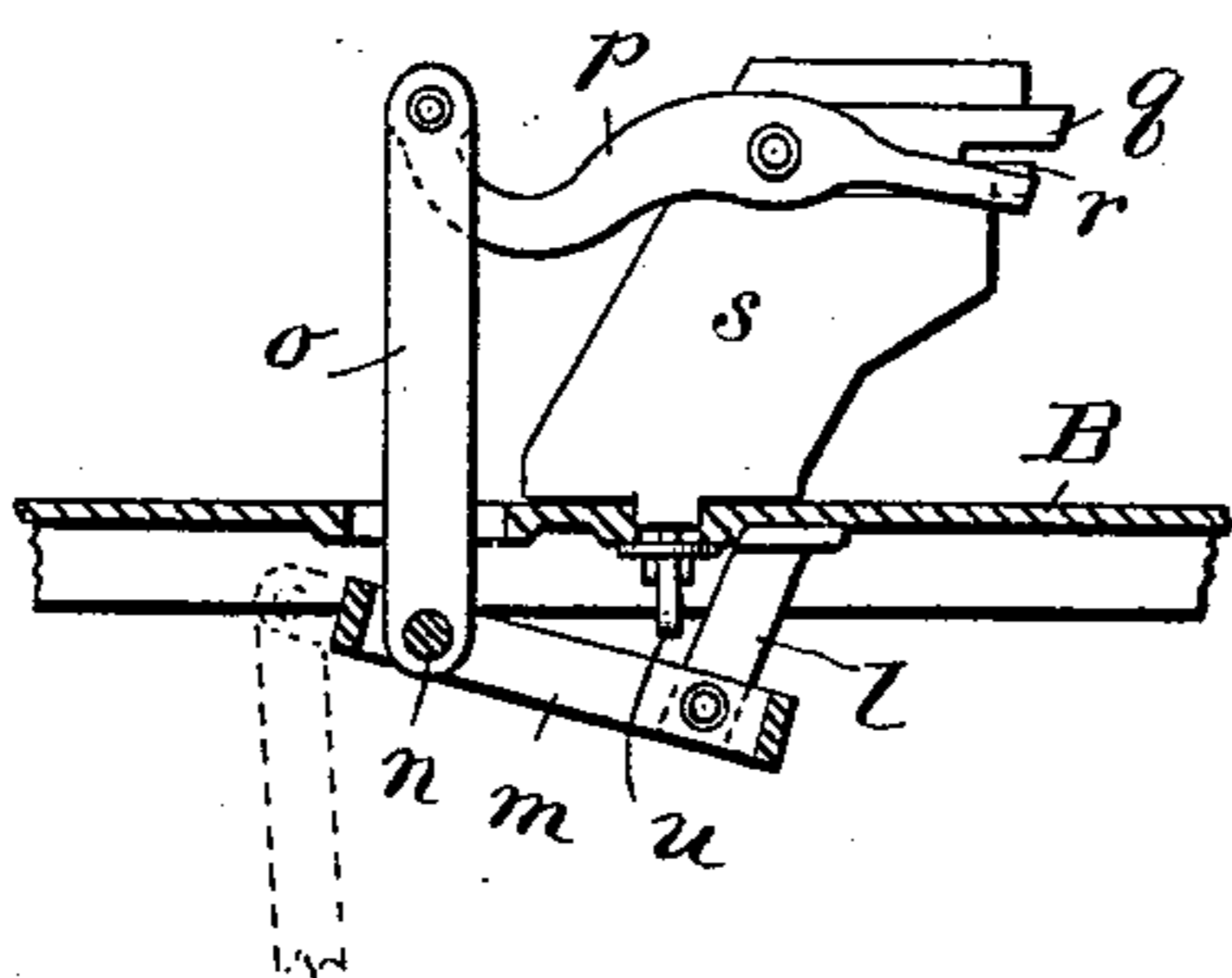


Fig. 5.

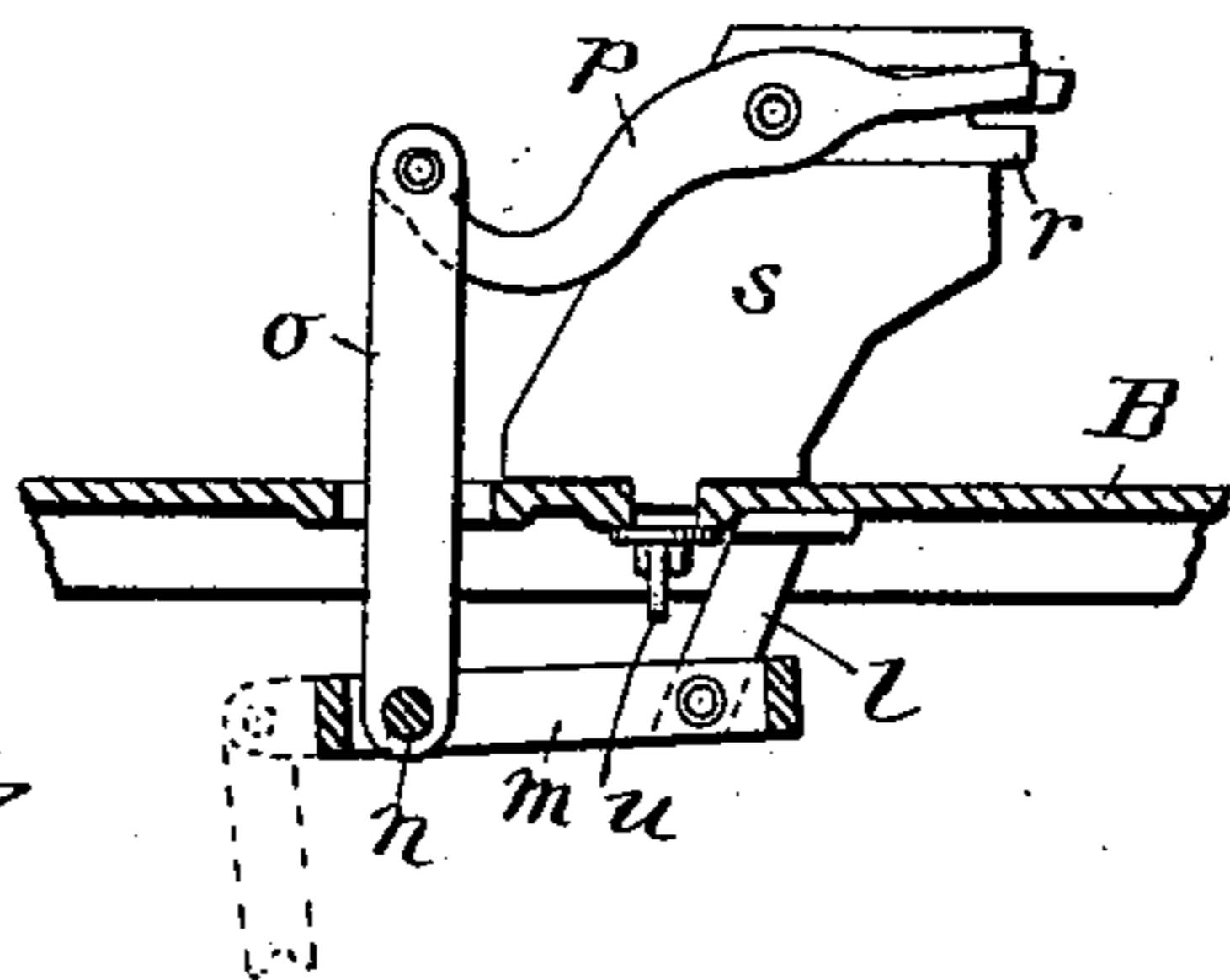


Fig. 6.

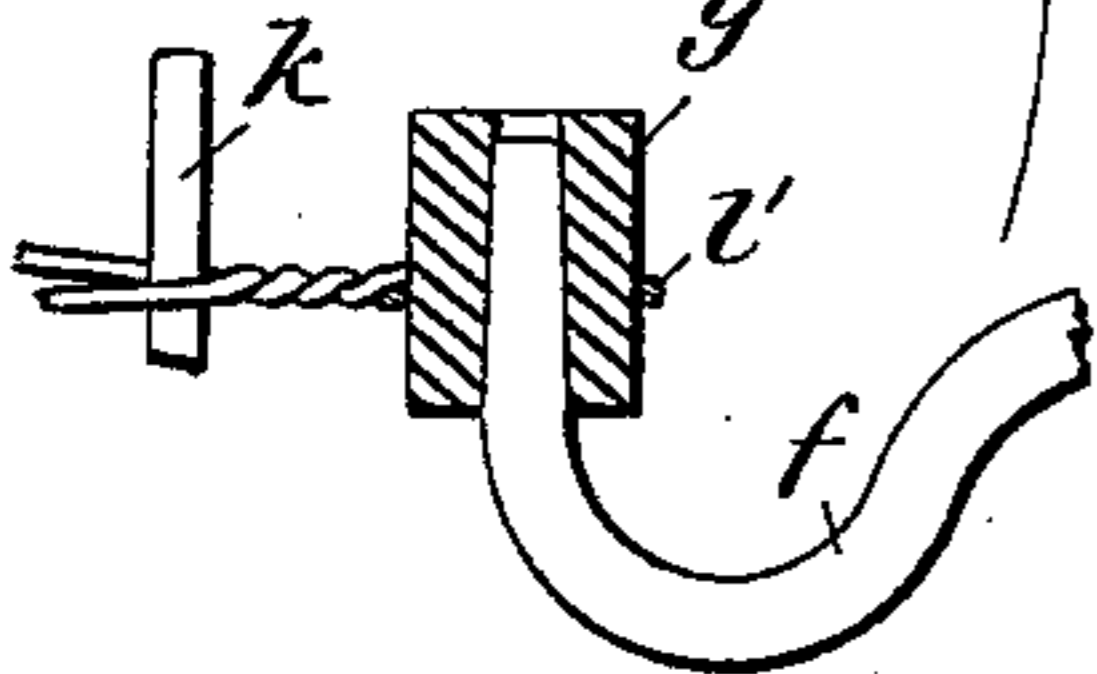
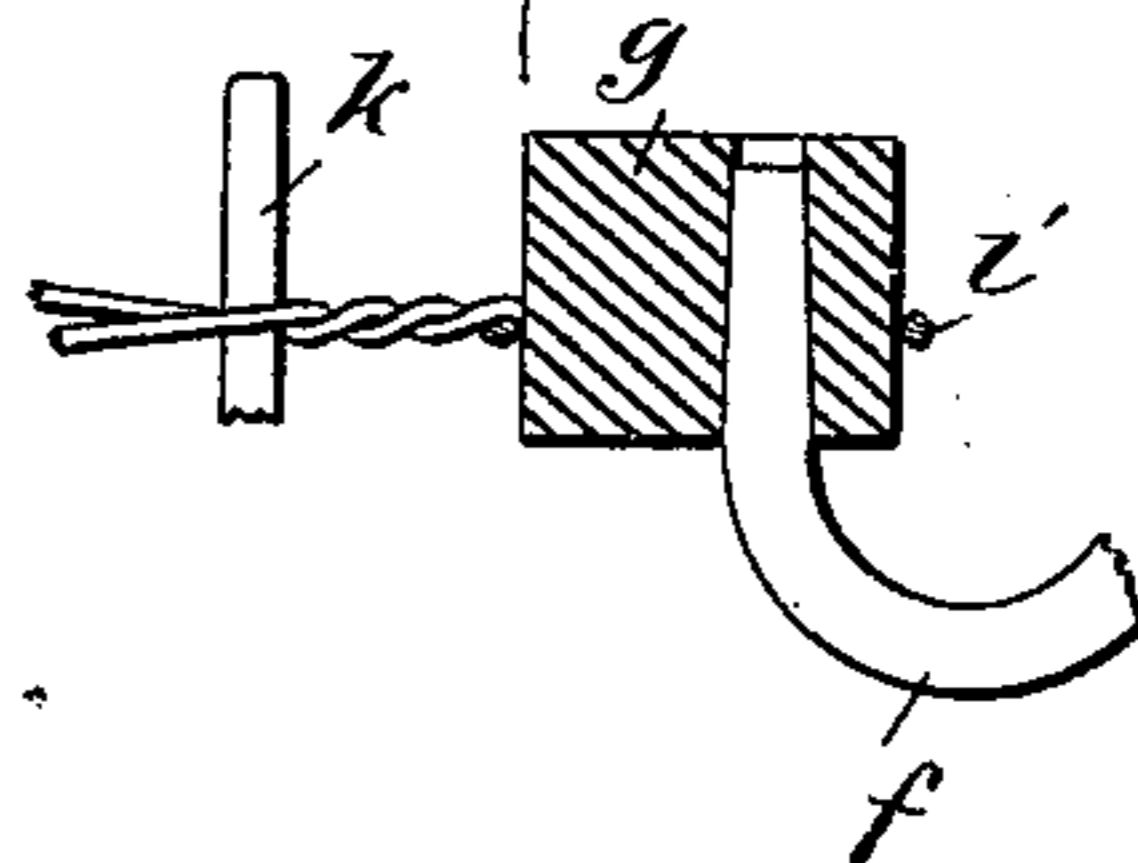


Fig. 7.



WITNESSES:

R. B. Shepherd.

Geo. E. Moore

INVENTORS

David White,
Alexander F. Lagerwall.

BY

Briesa Knautz

ATTORNEYS.

UNITED STATES PATENT OFFICE.

DAVID WHITE AND ALEXANDER F. LAGERWALL, OF NEW YORK, N. Y.,
ASSIGNORS TO THE AMERICAN EXTRACT AND SUPPLY COMPANY, OF
SAME PLACE.

MACHINE FOR FORMING WIRE LOOPS.

SPECIFICATION forming part of Letters Patent No. 518,381, dated April 17, 1894.

Application filed August 23, 1893. Serial No. 483,811. (No model.)

To all whom it may concern:

Be it known that we, DAVID WHITE and ALEXANDER F. LAGERWALL, both residing in the city, county, and State of New York, have
5 invented an Improved Machine for Forming Wire Loops, of which the following is a specification.

Our present invention relates to machines for forming wire loops and especially wire
10 loops for wiring corks in bottles and the like, and has for its object to produce an improved means for rapidly forming and cutting off wire loops from wire fed into the machine, and consists in the mechanism as illustrated
15 and set forth herein, and which will be specifically pointed out in the claims. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of our improved machine. Fig. 2 is a front view of the same. Fig. 3 is a top view thereof. Figs. 4 and 5
20 are views showing the knife in two operating positions, the section through the table being taken on line 4—5 of Figs. 1 and 3. Figs. 6
25 and 7 are detail views in top view and in section of different forms of head on which the loop is formed.

A designates a spindle supported on standards *b b* on the table B. Chains or cords *c*
30 and *d* are connected at one end thereof to the spindle and wound upon the spindle in reverse directions. The free end of chain *d* is connected to the treadle C. The free end of the chain *c* is connected to one end of a restoring spring S suitably attached at its other
35 end to the frame of the table. For this use we have found that a triangular chain will lie evenly on the spindle and is particularly suited for this purpose. The spindle terminates at one end in a hook *f* upon which is
40 fitted a removable sleeve or head *g*, upon which the loop is formed, or else the loop may be formed directly upon the hook. Mounted upon the table in a slot *h* in line with the
45 axis of the spindle is a head *i* adjustable in the slot to and from the spindle and secured in its adjusted position by a wing-nut *j*. Upon the head *i* is a pin or projection *k*, which assists in the formation of the loop. Pivoted

in brackets *l* on the under side of the table is
50 a rectangular frame *m*. To the rod *n* forming part of the frame is pivoted one end of a link *o*, the other end of which is pivoted to the pivoted knife *p*. The jaws *q, r*, co-operate with the knife to cut the wire. The head
55 *s* carrying the knife *p* and jaws *q, r*, is mounted in a slot *t* in the table extending parallel with the axis of the spindle A. The head *s* is movable in the slot and may be secured in its adjusted position by the wing-nut *u*. The
60 link *o* may be moved along the rod *n* to follow the movement of the head *s*. To allow for such movement the table is slotted as at *v*. The frame which is connected with and which actuates the knife is itself actuated by a pit-
65 man D connected to the treadle, or we may operate the pitman from the treadle in any other suitable manner. The treadle is cushioned by the adjustable threaded rod *a'* in a
70 bracket *b'* with a jam-nut *d'* for adjusting the rod and a cap *c'* on the end of the rod cushioned with rubber to form a bearing for the treadle when it reaches the extremity of
75 its up-stroke. An elastic cushion *e'* on the treadle serves to cushion the treadle upon its down stroke.

The mode of operation is as follows: The end of the wire is led from the reel *w* on the bracket *x* attached to the table, and passed
80 around the end of the hook and brought back to the head *s* which thereby forms a guide to the length of the ends of the loop. The wire leading from the reel to the hook is inserted between the jaws *q, r*, of the double acting
85 knife. The pin *k* on the head *i* passes between the two parallel strands of the wire as shown in the Fig. 3. The parts are now in the position of Figs. 1 and 3; pressure upon
90 the treadle will unwind the chain *d* and rotate the spindle and hook, and by the co-operation of the pin *k* will form a loop *l'* in the wire and by means of pitman D operate the
95 knife *p* with the jaw *q* to cut the wire. The treadle is now in its lowest position, but the diameter of the spindle is so proportioned to the stroke of the treadle that the end of the hook *f* is again vertical. The knife is in the position shown in Fig. 5. The loop formed is

now removed from the hook and the end of the wire on the coil led between the jaws of the double acting knife, around the hook, and pin, and the end brought up to the head *s* as before. Upon releasing the pressure upon the treadle the restoring spring *S* will rotate the spindle, by means of chain *c*, in the reverse direction and restore the parts to their initial position. The rotation of the spindle will form a loop as before and the knife *p* will co-operate with the jaw *r* to cut the wire.

To form loops of various styles and sizes we use removable sleeves or heads *g* of various shapes and sizes upon the hook *f*, and vary the location of the heads *i* and *s* carrying the pin *k* and the double acting knife *p*.

We do not limit ourselves to the precise construction shown, as we may variously connect the treadle with the spindle, or employ power to run the machine, without departing from the spirit of our invention.

What we claim, and desire to secure by Letters Patent, is—

1. In a machine for forming wire loops, the combination with a spindle provided with a hook for engaging the wire, together with a pin co-operating with the hook to form a loop, of a treadle and connected mechanism for rotating the spindle in one direction, and a restoring spring connected with the spindle for

rotating it in a reverse direction, substantially as described.

2. In a machine for forming wire loops, the combination with a spindle provided with a hook for engaging the wire, together with a pin co-operating with the hook to form a loop, of chains reversely wound upon the spindle and connected respectively to a treadle for rotating the spindle in one direction, and to a restoring spring for rotating it in a reverse direction, substantially as described.

3. The combination in a machine for forming wire loops of a hook for engaging the wire, a pin adjustable to and from the hook, and cooperating therewith to form a loop, and a knife for cutting the wire independently adjustable to and from the hook, substantially as described.

4. The combination in a machine for forming wire loops of a rotary hook for forming the loop, a treadle and restoring spring for rotating said hook in either direction, and a double acting knife to cut the wire actuated by the treadle in its motion in either direction, substantially as described.

DAVID WHITE.

ALEXANDER F. LAGERWALL.

Witnesses:

GEO. E. MORSE,

CHAS. E. SMITH.