

(No Model.)

2 Sheets—Sheet 1.

G. C. COON.

MACHINE FOR WIRING CORKS IN BOTTLES.

No. 273,964.

Patented Mar. 13, 1883.

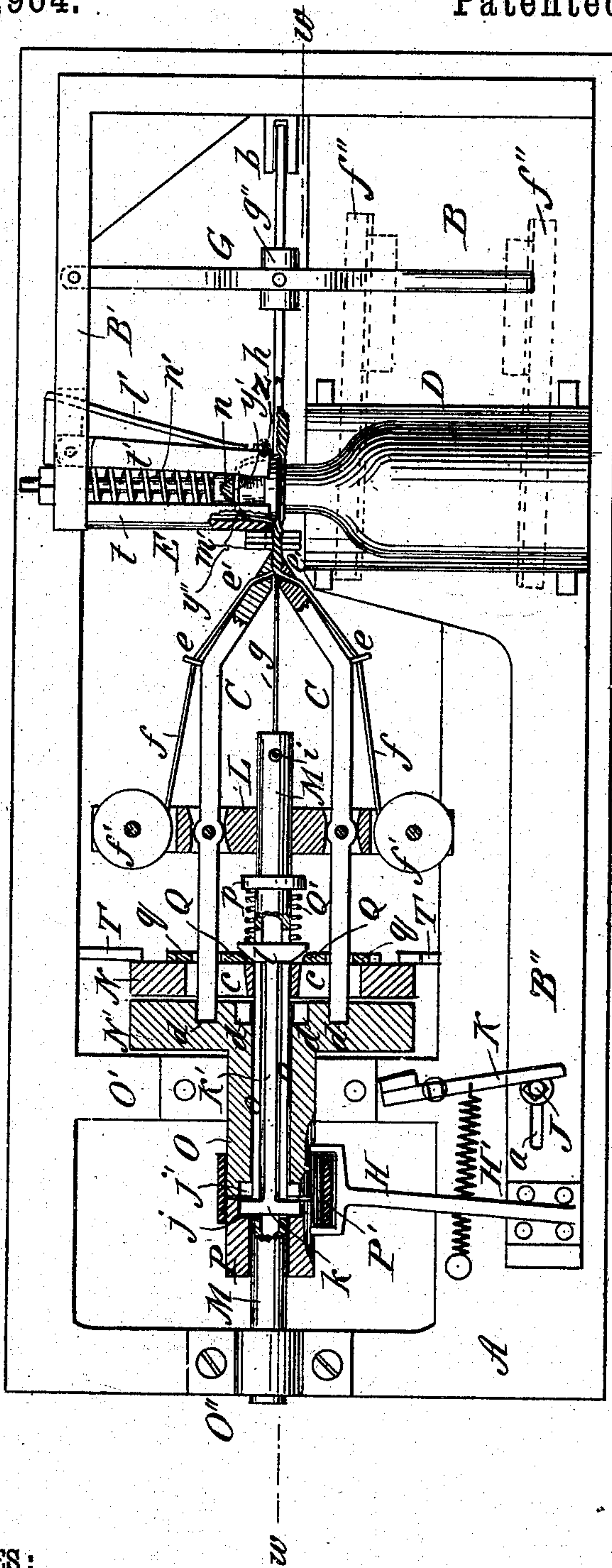


Fig. 1.

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INVENTOR:

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ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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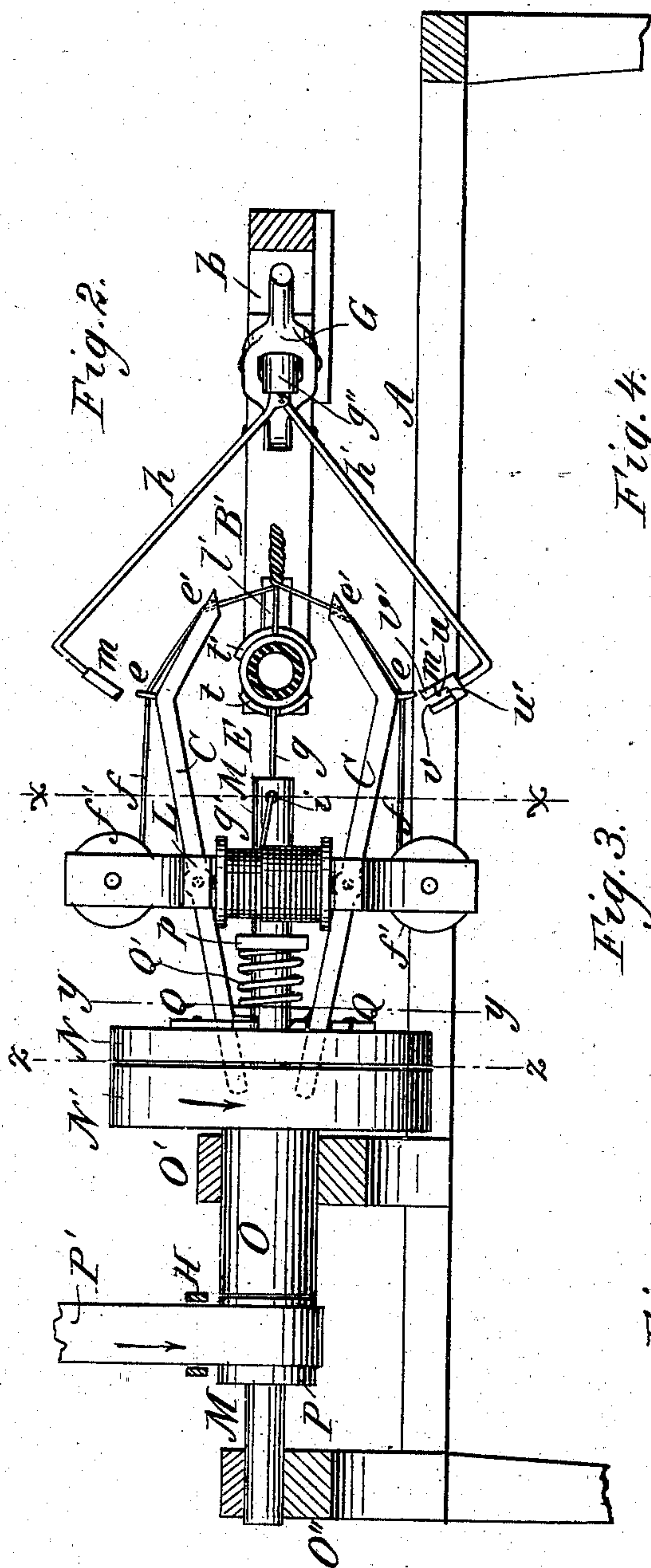


Fig. 2.

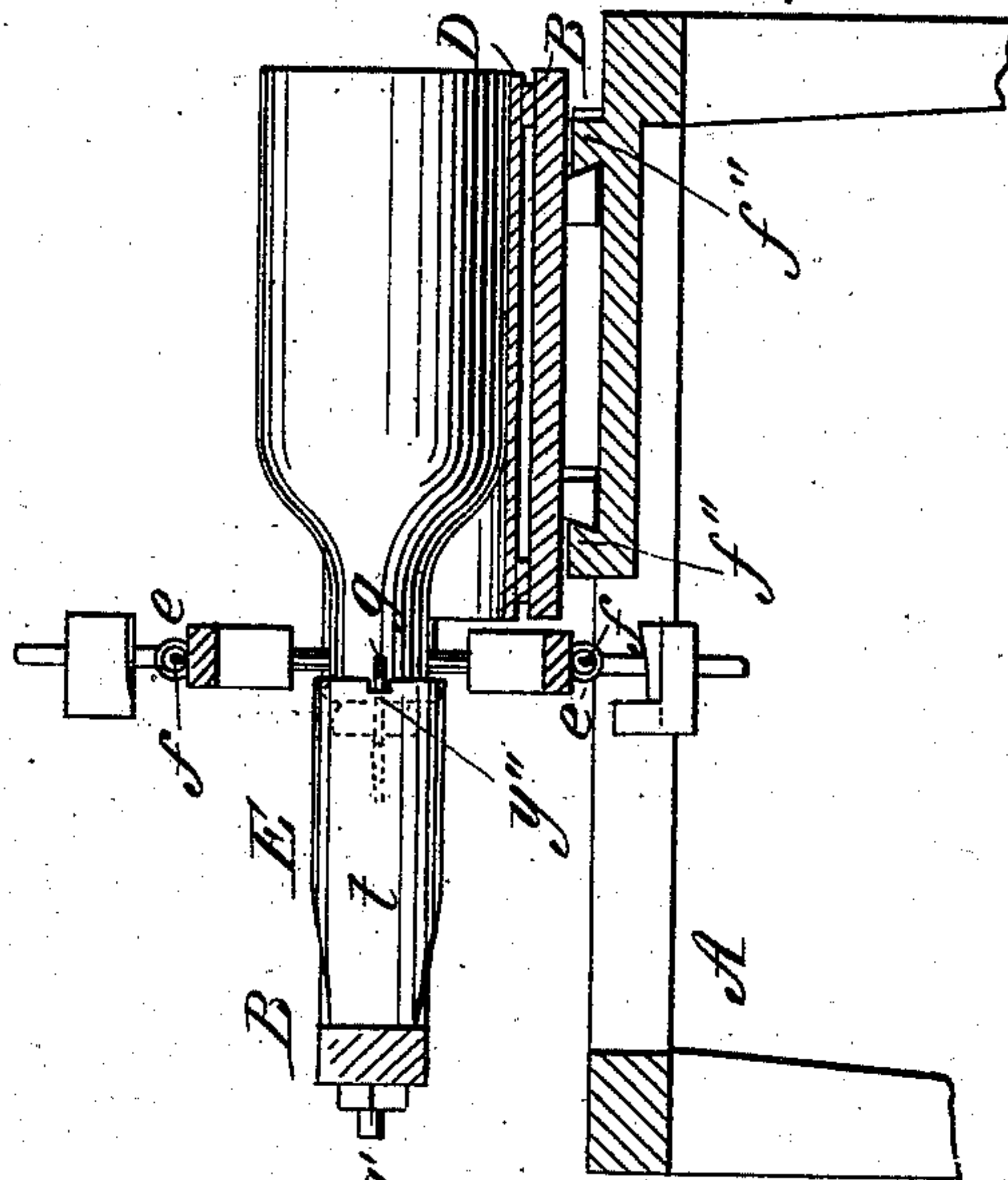


Fig. 4.

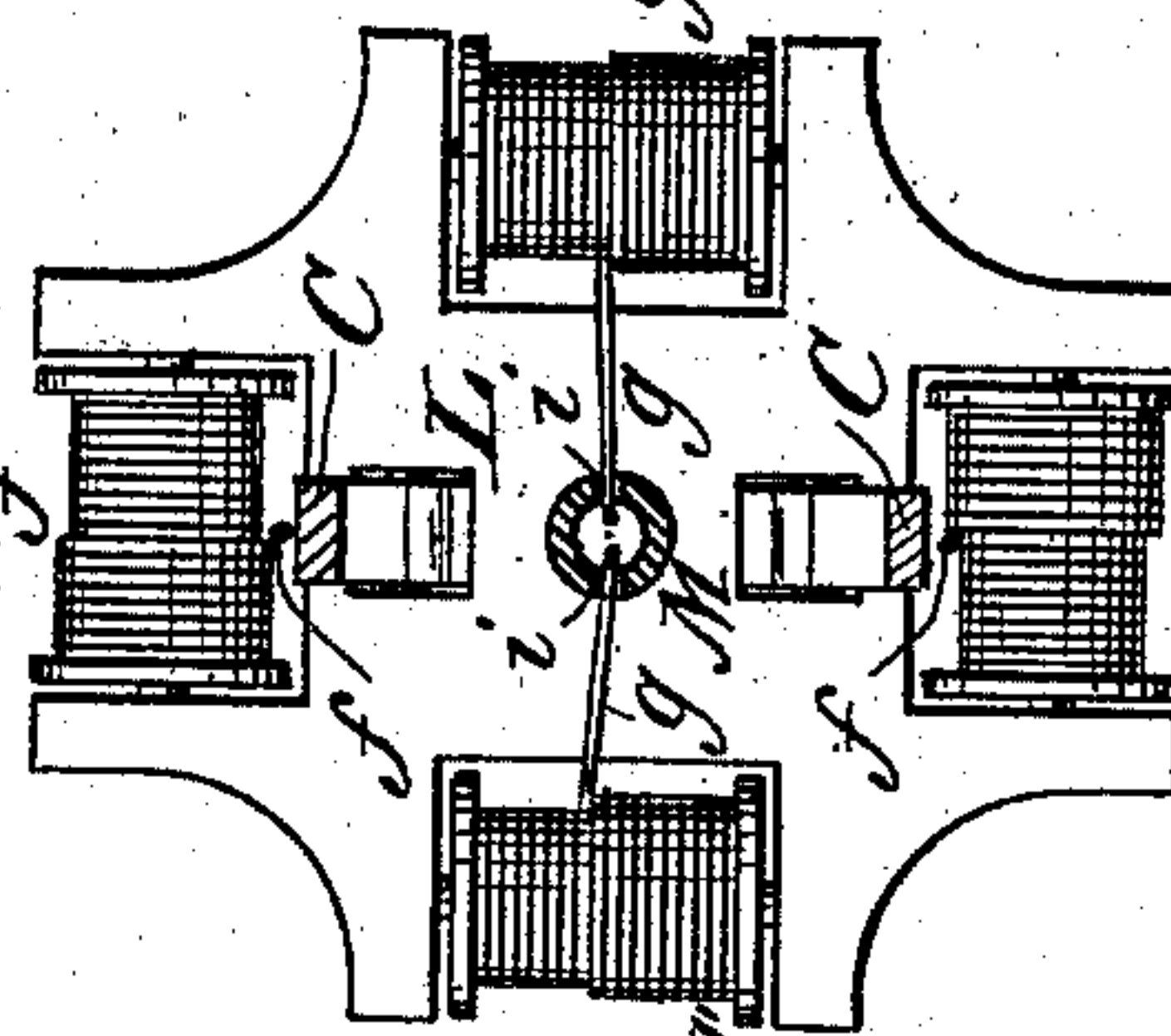


Fig. 3.

Fig. 5.

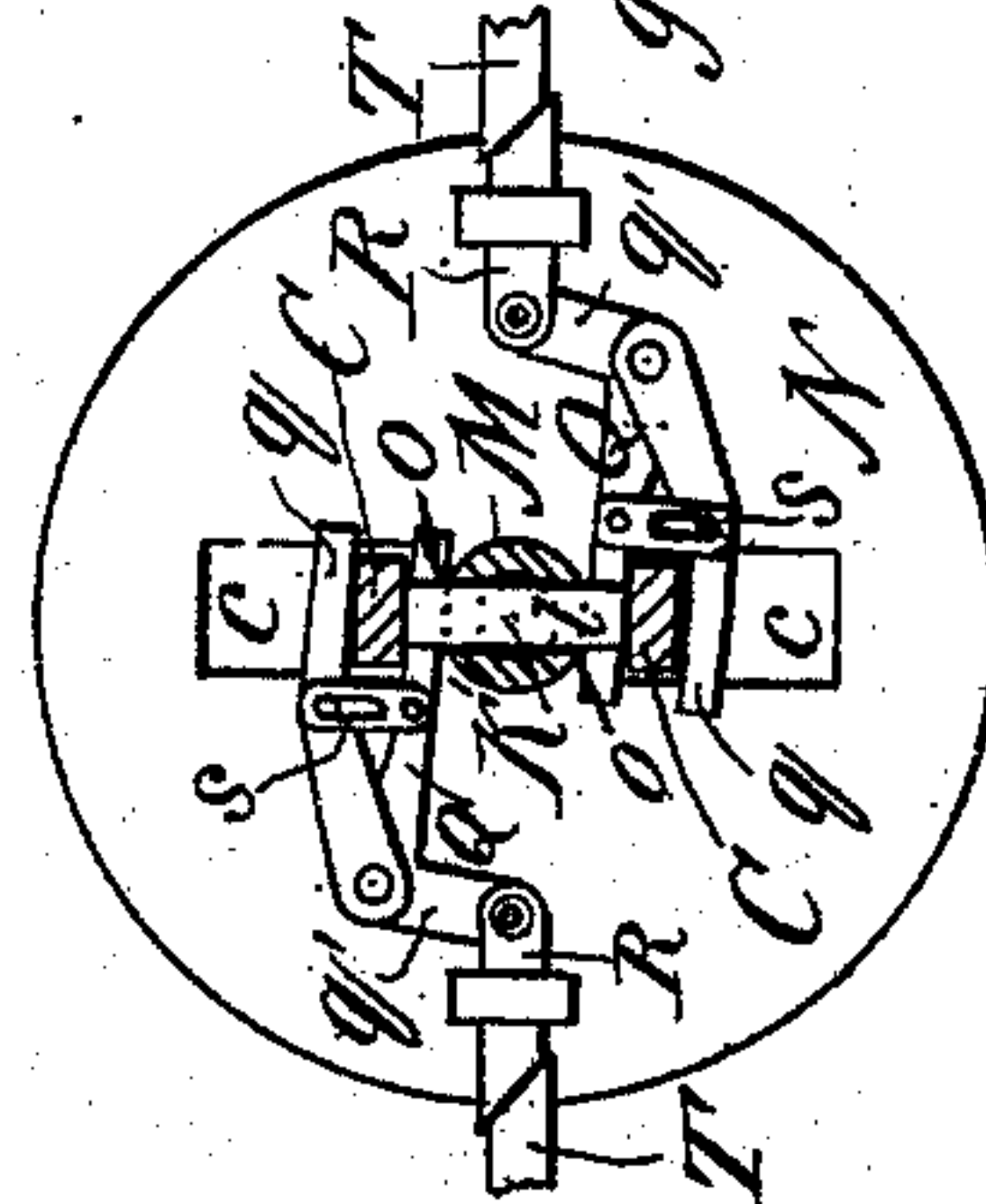


Fig. 6.

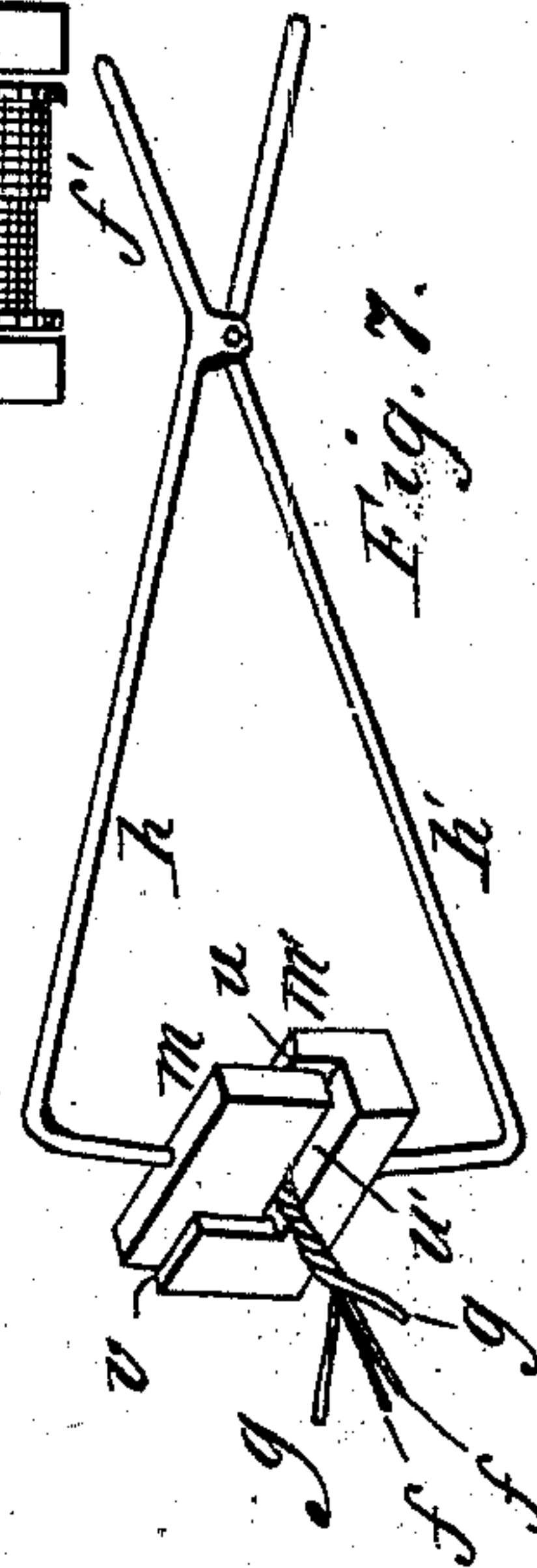
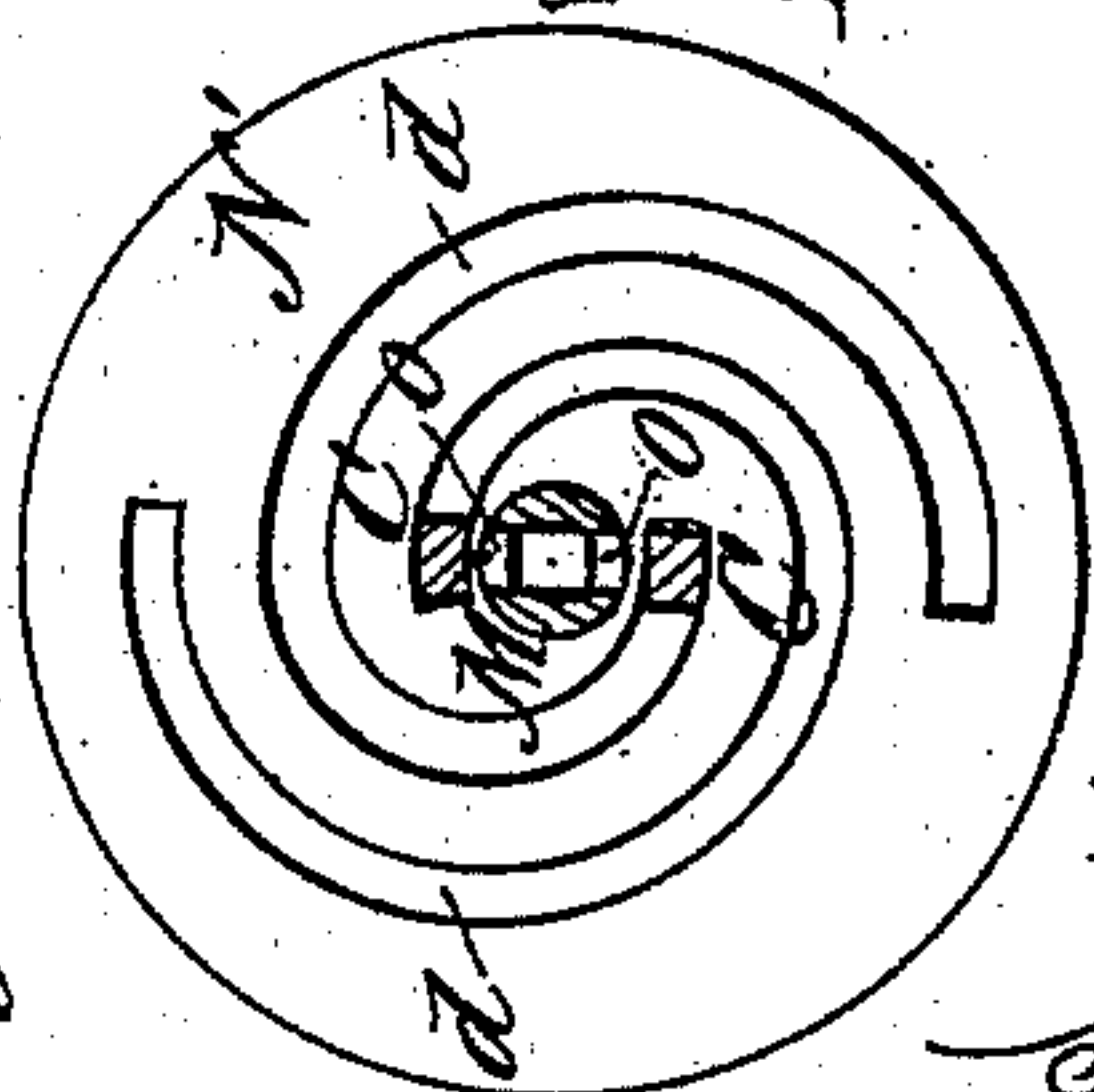


Fig. 7.

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UNITED STATES PATENT OFFICE.

GEORGE C. COON, OF JERSEY CITY, NEW JERSEY.

MACHINE FOR WIRING CORKS IN BOTTLES.

SPECIFICATION forming part of Letters Patent No. 273,964, dated March 13, 1883.

Application filed July 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. COON, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Machine for Wiring Corks in Bottles, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional plan view of my invention. Fig. 2 is a side elevation, part in section, some parts, elsewhere shown, being left out. Figs. 3 and 4 are transverse sectional elevations taken on the line *xx* of Fig. 2, looking in opposite directions. Figs. 5 and 6 are sectional elevations, taken respectively on the lines *yy* and *zz* of Fig. 2; and Fig. 7 is a perspective view of the wire-cutters.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

Referring to the drawings, A represents a table or frame, which supports the working parts of my invention. Upon this table A is placed the table or frame B, which is adapted to be moved to and from the jaws C C by the attendant. The bottle to be wired is carried upon this movable table B in the trough D, that is formed or secured thereon; and to the forward extension, B', of this movable table is attached the clamp E, which holds the neck of the bottle, as shown in Figs. 1, 2, and 4, while the wire is being twisted upon the bottle and cork by the jaws C C. This forward extension, B', also carries the bent cutter-arms *h h'*, that are pivoted in the arm *b*, and also the lever G, for operating the said cutter-arms for cutting the wires near the jaws C C after the twist has been formed. To the rear extension, B'', of this movable table B is secured the belt-shipper H, and this extension B'' is provided with the stop-pin J, which is adjustable in the slot *a* for operating the brake K, for the purposes hereinafter described. The jaws C C are bent near their forward ends, as shown in Figs. 1 and 2, so as to permit the passage of the neck of the bottle between them, and they are extended backward, as shown, and pass through and are pivoted in the spool-carrying plate L, and their rear ends pass through the slots *c c*

in the circular plate N and reach back into the circular cam-grooves *d d*, formed in the circular plate N'. The circular plate N and the spool-carrying plate L are fixed upon the shaft M, while the plate N' is placed loosely thereon.

In the spool-carrying plate L are journaled the spools *f' f'* and *g' g'*, upon each of which is wound a quantity of wire of suitable size for wiring corks in bottles. The outer parts of the jaws C C are provided with the eyes *e*, and are perforated at the ends, as shown at *e'*, and the outer end of the shaft M, which reaches in front of the spool-carrying plate L, is perforated with two opposite diagonal holes, reaching from the periphery of the shaft to the center thereof, as shown at *i*, and through these perforations *i* are passed the wires *g g*, coming from the spools *g' g'*, and through the eyes *e* and perforations *e'* of the jaws are passed the wires *f f*, coming from the spools *f' f'*, as shown clearly in Figs. 1, 2, and 3.

The circular plate N' is formed with the pulley-extension O, which is supported by and is adapted to turn in the cross-piece O' of the frame A. The shaft M passes through this plate N' and through the pulley-extension O, and is journaled at its rear end in the support or cross-piece O'' of the main frame A. Near the rear end of the pulley-extension O is placed loosely upon the shaft M the pulley P, which is of the same diameter as the pulley-extension O, and the belt P' is adapted to be shipped from this pulley P upon the pulley-extension O by the shipper H, when the table B is moved outward away from the jaws C C, and to be returned to the pulley P by the shipper when the table is moved back toward the jaws. This pulley P may be a plain loose pulley; or it may be formed with a clutch and combined with suitable clutch mechanism, so that it is adapted to be clutched to and released from the shaft M automatically by the movement of the table B, for rendering it at the proper time alternately a tight and loose pulley, as hereinafter described.

The pulley being a plain loose pulley, the operation of the machine will be as follows: The forward ends of the jaws C C are first threaded with the wires *f f*, and the forward end of the shaft M with the wires *g g*, (one or both,) and the wires are then twisted together at their outer ends to properly and securely

tie them together to form the lock on one side of the neck of the bottle. The machine is now put in motion, and the table B is moved down toward the jaws C C. This movement will ship the belt from the pulley-extension O to the pulley P, and at the same time permit the spring H' (shown in Fig. 1) to apply the brake K to the circular plate N', which will retard the revolution of this plate. The momentum of the spool-carrying plate L, jaws C C, plates N, &c., will cause them and the shaft M to turn independently of the plate N' until the rear ends of the jaws C C move from the outer to the inner ends of the cam-grooves *d d*, which movement will cause the rear ends of the jaws to approach each other, opening the forward ends of the jaws. The bottle to be wired is now placed upon the trough D and shoved forward between the jaws and into the clamp E. This movement will bring the wires *g g* (just back of the twist or tie above mentioned) across the center of the cork and the wires *f f* around the outside of the neck of the bottle, as will be understood from Figs. 1, 2, and 3. The machine is now put in motion and the table B is moved away from the jaws, carrying the neck of the bottle between them. This movement of the table will ship the belt from the pulley P to the pulley-extension O, and throw back the brake K. The belt will now cause the plate N' to revolve independently of the jaws, spool-carrying plate L, and plate N, which independent movement will cause the cam-grooves *d d* to close the forward ends of the jaws upon the wires *g g* and *f f*, and firmly grasp them near the neck of the bottle. This independent movement of the plate N' will continue until the forward ends of the jaws come firmly upon the wires, or until the rear ends of the jaws reach the outer ends of the grooves *d d*, thus locking the plates N and N' and the spool-carrying plate L together, causing all of these parts, the jaws and the shaft, to revolve, and causing the jaws to twist the wires, as indicated in Fig. 1. The machine will now be permitted to run until a sufficient length of twist of the wires (a half inch or more) has been formed. The lever G is now to be brought forward for bringing the cutters *m m'*, which are attached to the arms *h h'*, together over the neck of the bottle for cutting the wires near the center of the said twist, and between the neck of the bottle and the ends of the jaws, leaving the several wires firmly twisted around the cork and neck of the bottle, and leaving the ends of the wires in the machine still twisted or tied together for the next bottle. The lever G is now to be moved back by hand, or by a spring or weight (not shown) suitably attached thereto to open the arms *h h'*, thus bringing the parts of the machine controlled thereby to their original position, ready to repeat the operation, the other parts having been previously returned.

In case the pulley P is not a plain loose pulley, but is adapted to be made alternately a tight and loose pulley upon the shaft, so that

the machine will be entirely automatic in its action, the shaft M will be made hollow, and it will be slotted, as shown at *o o*, and the sliding clutch K' will be placed in the shaft, so that the head *k* and the beveled head *l* thereof will protrude from the slots *o o*, as shown clearly in Fig. 1, and upon the shaft between the collar *p* and the head *l* of the clutch will be placed the coiled spring Q', which will tend to constantly hold the sliding clutch K' pressed backward, so that its head *k* will engage with the clutch *j*, formed in the forward end or face of the pulley P, as shown in Fig. 1, thus making it a fast pulley upon the shaft. The clutch will be held in this backward position by the spring at all times when the forward ends of the jaws C C are grasping the wires; but when the rear ends of the jaws are brought toward each other by the cam-grooves *d d*, as above described, the sliding clutch K' will be moved forward against the pressure of the spring Q', withdrawing the head *k* from the clutch *j* into the recess *j'*, in the rear end of the pulley-extension O, thus releasing the pulley P. This forward movement of the clutch K' is accomplished by means of the arms Q Q, pivoted to the front face of the plate N, which are forced toward each other by the rear ends of the jaws C C, when they are brought toward each other by the cam-grooves *d d*, which approaching or closing movement of the said arms brings them forcibly into contact with the beveled faces of the head *l*, thus forcing the clutch K' forward, as will be clearly understood from Figs. 1 and 5.

To the arms Q Q are pivoted the arms *q q*, which reach outside of the rear ends of the jaws C and serve to open the arms Q Q for releasing the head *l* of the sliding clutch when the rear ends of the jaws are opened by the cam-grooves *d d*. These arms *q q* are attached to the arms Q Q by the connecting-plates *s s* and suitable screws, and they are slotted so that the distance between the arms Q *q* may be varied to suit bottles of different sizes and cause the sliding stop-plates R R to be withdrawn at the proper time. The closer arms *q* are set to the rear ends of jaws C the sooner will the stop-plates R be withdrawn, setting the plate N free to revolve after a less number of revolutions or twists of the wires, thus adapting the twists to small bottles. These stop-plates R R are attached to the extensions *q' q'* of the arms Q Q, and when forced out by the closing of the arms Q Q they are adapted to come in contact with the stationary stops T T, attached to the frame A, as shown in Fig. 1, for stopping the independent revolution of the plate N', jaws C, spool-carrying plate L, &c., after the belt has been shipped to the pulley P, so that the jaws C will stand one above the other, the position required in the construction shown for the insertion of the bottle.

The clamp E, which holds the neck of the bottle at the time the wire is being twisted by the jaws C C, is composed of the stationary

semi-cylindrical plate *t* and the hinged semi-cylindrical plate or jaw *t'*, which is pressed toward the stationary plate *t* by the spring *l'*. Between the semi-cylindrical plates or jaws *t* *t'* is placed the plunger *n*, which is held constantly forward by the coiled spring *n'*, placed upon the stem thereof, as shown in Fig. 1, for pressing the center wires *g g* firmly upon the cork, and holding the same when the neck of the bottle is inserted between the plates and while the twist is being formed. The face of the plunger is formed with the groove *y'* across its center to form a recess for the wires *g g* to rest in, and the inner wall of the plate *t* is grooved, as shown at *y''*, Fig. 1, to receive the wires, as the neck of the bottle is forced up between the plates to prevent the wires slipping off from the cork, and it may be provided at its lower edge with a friction-roller, *Z*, for the wires to pass over to reduce the friction of the wire upon the edge of the plate.

The lever *G* is provided with the sleeve *g''*, through which the arms *h h'*, which carry the cutters *m m'*, pass. These arms *h h'* are bent upward at the forward and rear ends, so that the backward and forward movement of the lever will open and close them, bringing the cutters *m m'* together upon the wires, as above described. The cutter *m* is a plain steel block with a sharpened edge, while the cutter *m'* is a steel block formed with the guide-plates *v v'*, cutting-edge *u*, and broad surface *w'*, which serves as means for grasping the ends of the wires between the cutters, as between pinchers, for holding them to be twisted by the machine in case the twist is not of sufficient length after the wires are cut, as clearly indicated in Fig. 7. This is for the purpose of adjusting the parts of the machine to act in unison and give the desired amount of twist when starting on a different size of bottles.

The table *B* moves in ways formed upon the main frame *A*, as shown at *f'' f''* in Figs. 1 and 2, and these ways may be irregular or slightly diagonal to the central line of the frame *A*, as shown in Fig. 1, so as to cause the table *B* to recede slightly in its outward movement for bringing the wires in the center of the grasping-faces of the jaws at the time the twist is made.

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

1. In a machine for wiring corks in bottles, the combination, with an adjustable clamp for holding the bottle by the neck, of suitable jaws adapted to be closed upon the wires and revolved for twisting the same by means of a revolving shaft carrying said jaws, and means for opening and shutting them, substantially as specified.

2. The combination, with the pivoted arms or jaws *C C*, adapted to carry the wires *f f*, of the shaft *L*, or other means adapted to carry one or more wires, *g*, substantially as and for the purpose set forth.

3. The pivoted jaws *C C*, adapted to carry

the wires *f f*, in combination with means, substantially as described, for opening, closing, and revolving the jaws, as and for the purposes set forth.

4. The combination, with the spool-carrying plate *L* and the jaws *C C*, pivoted therein, of means, substantially as described, for opening and closing the jaws, as and for the purposes set forth.

5. The independently-revolving plate *N'*, formed with the cam-grooves *d*, in combination with the pivoted jaws *C C*, substantially as and for the purposes set forth.

6. The revolving plate *N'*, formed with the cam-grooves *d d*, in combination with the jaws *C C*, pivoted in the spool-carrying-plate *L*, substantially as and for the purposes set forth.

7. In a machine for wiring corks in bottles, the combination, with the jaws for twisting the wire, of the sliding table or support *B*, for holding the bottle, substantially as and for the purposes set forth.

8. The combination, with the jaws *C C* and sliding table or support *B*, of the clamp *E*, for holding the neck of the bottle while being wired, substantially as and for the purpose described.

9. The table or support *B*, in combination with the twisting-jaws *C*, said table being provided with guideways in which it may slide freely to and from said jaws, for the purpose of adjusting itself to the movement of the bottle, as the act of twisting wire on the bottle-neck draws it along.

10. The combination, with the sliding table *B* and twisting-jaws *C C*, of the cutting-arms *h h'* and operating-lever *G*, substantially as and for the purposes set forth.

11. The combination, with the pivoted arms *h h'*, of the blades *m m'*, secured at right angles thereto, the guides *v v'*, elevated above the edge *u* for the purpose of guiding the blade *m* before it comes in contact with the wire to be cut and retaining the blades *m m'* in facial contact while cutting, and the shoulder or ledge *w'* upon the blade *m'*, for operating with the lower face of the blade *m* to grip the wire, as shown and described.

12. The combination, with the sliding table *B*, of the clamp *E*, secured thereto, consisting of the fixed semi-cylindrical plate *t*, the pivoted plate *t'*, provided with spring *l'*, and the plunger *n* and spring *n'*, as shown and described.

13. The combination, with the plate *N'* and shaft *M*, of the volute cam-grooves *d* in plate *N'*, and the jaws *C*, operated thereby, as shown and described.

14. The combination, with the gripping-jaws *C*, the revolving plate *N'*, provided with cam-grooves *d*, and the sleeve-extension *O* of the loose pulley *P* on shaft *M*, of the jaw-carrying plate *L*, secured to the shaft *M*, as shown and described.

15. The combination, with the plate *N'* and jaws *C*, of the brake *K*, and table *B*, provided with the pin *J*, as shown and described.

16. The shaft *M*, the plate *L*, and slotted

plate N, secured thereon, and the jaws C, carried by plate L, in combination with the cam-grooved plate N', revolving on the shaft M, as shown and described.

17. The shaft M, the plates L and N, made fast thereon, the cam-grooved plate N', free to revolve thereon, and the jaws C, carried by plate L, in combination with the brake K, for retarding the revolution of the plate N', as shown and described.

18. The hollow shaft M, slotted at *o*, the plate L, secured thereon, and the jaws C, carried by said plate, in combination with the sliding clutch K', the pulley P, and clutch *j* thereon, as shown and described.

19. The sliding clutch K', provided with the clutch-head *k* and beveled head *l*, in combination with the pulley P, arms Q, spring Q', jaws C, and means for opening and closing the jaws, as shown and described.

20. The jaws C, plate L, hollow slotted shaft M, and sliding clutch K', in combination with the collar *p*, spring Q', and the pulley P, formed with the clutch *j*, as shown and described.

21. The slotted plate N, having the arms Q Q pivoted thereto, in combination with the sliding clutch K', pulley P, and jaws C C, substantially as and for the purposes described.

22. The combination, with the jaws C, plate N, shaft M, and plate L, of the elbow-levers or arms Q, and the stops T, as shown and described.

23. The combination, with the jaws C, plates L N, shaft M, stops T, and arms Q, of the arms *q*, connected to the arms Q by the slotted plates *s*, as shown and described.

24. The combination, with the slotted plate N, made fast to the shaft, and having the jaws C C, extending through the slots therein, of the stationary stops T T and the sliding stops R

R, substantially as and for the purposes set forth.

25. The hollow slotted shaft M, plates L N', and jaws C, in combination with the pulley-extension O of the plate N', the loose pulley P, provided with the clutch *j*, and the sliding clutch K, as shown and described.

26. The combination, with the sliding table B and rotary jaws C, of the neck-holding clamp E, consisting of the fixed side *t*, and the pivoted side *t'*, operated by spring *l'*, the sides *t t'* being grooved at *y''* to receive the wire, as shown and described.

27. The combination, with the sliding table B, rotary jaws C, and clamp E, of the spring *n'* and the plunger *n*, grooved across its face at *y'*, to receive the wire, as shown and described.

28. The combination, with the sliding table, rotary jaws C, and clamp E, of the trough D, secured to said table B, as shown and described.

29. The machine for wiring corks in bottles, consisting of the sliding table or support B, clamp E, twisting-jaws C C, independently-revolving cam-plate N', plate N, perforated shaft M, spool-carrying plate L, fixed upon the shaft, and provided with spools of wire, substantially as and for the purposes set forth.

30. The combination, with the correspondingly-bent arms *h h'*, pivoted in the arm *b*, and carrying the cutters *m m'*, of the lever G, formed with the sleeve *g''* for opening and closing the arms for cutting the wire, substantially as described.

GEORGE C. COON.

Witnesses:

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H. A. WEST.