

(No Model.)

3 Sheets—Sheet 1.

C. RAHSSKOPFF.

MACHINE FOR DRYING VARNISHED LABELS.

No. 335,771.

Patented Feb. 9, 1886.

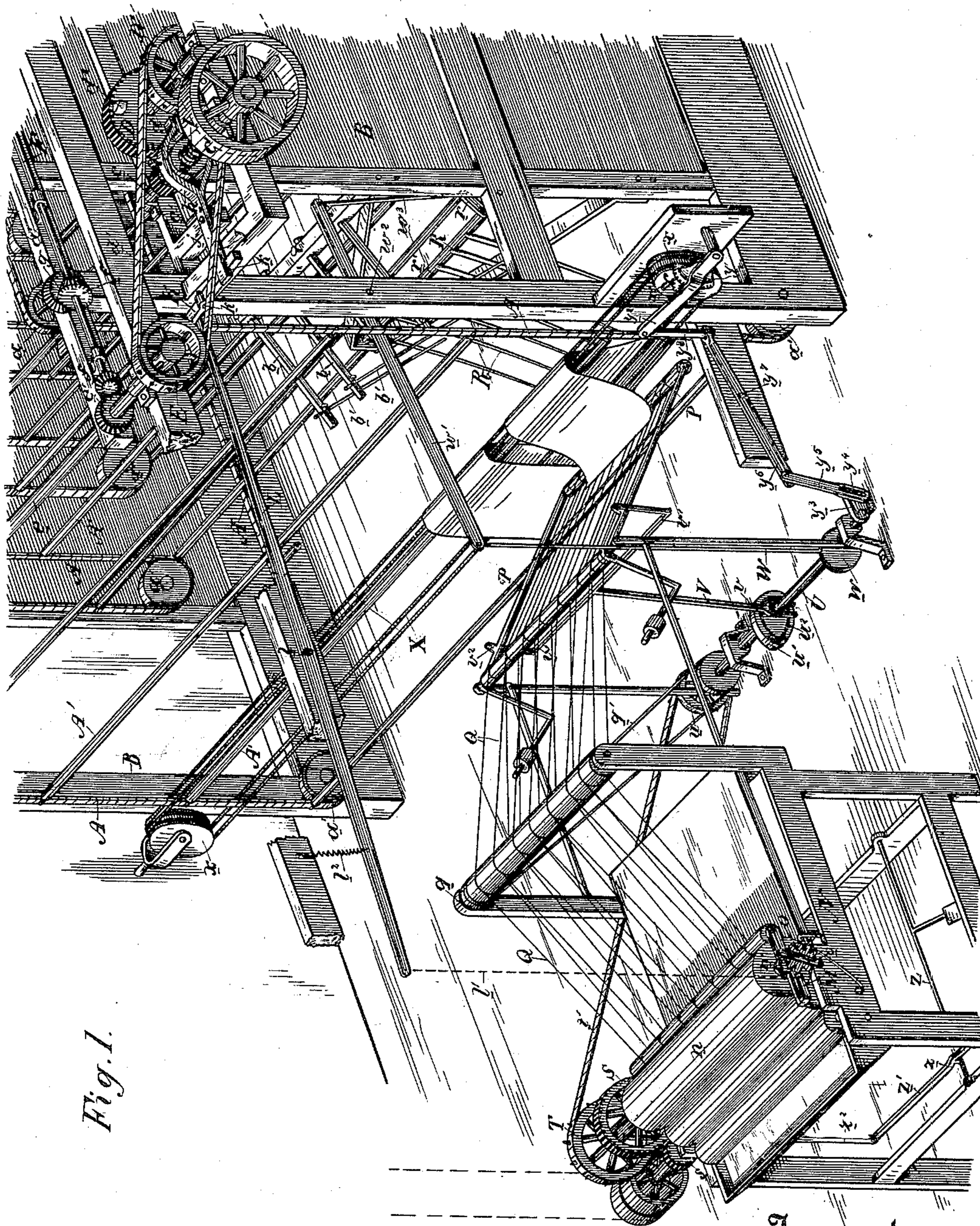


Fig. 1.

Witnesses,
Geo. H. Strong.
J. B. House.

Inventor,
C. Rahsskopff.
By
Dewey & Co.
Attorneys

(No Model.)

3 Sheets—Sheet 2.

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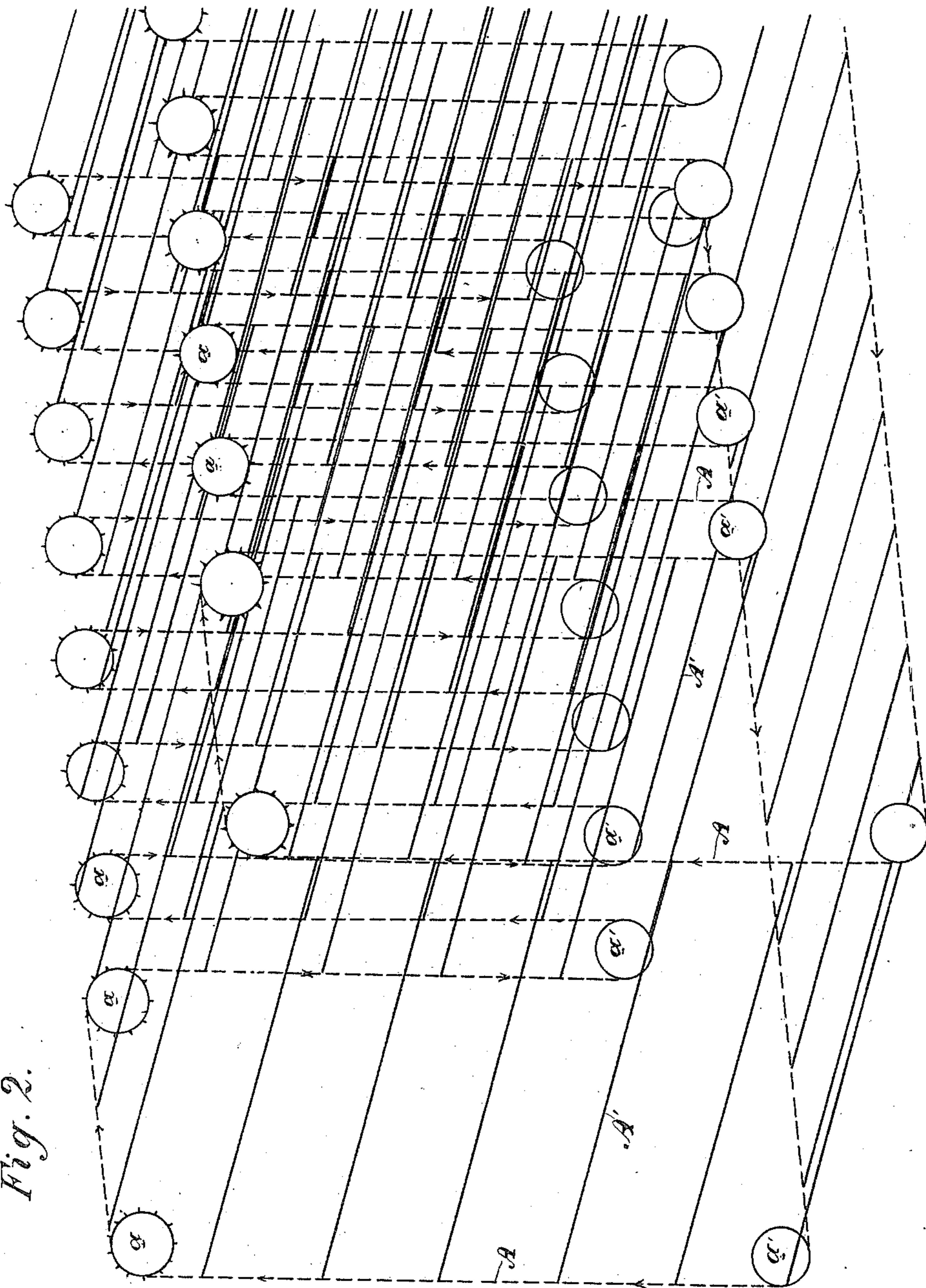


Fig. 2.

Witnesses,
Geo H. Strong
J. H. Strong

Inventor
C. Rahsskopff.
By Deucey & Co.
attorneys

(No Model.)

3 Sheets—Sheet 3.

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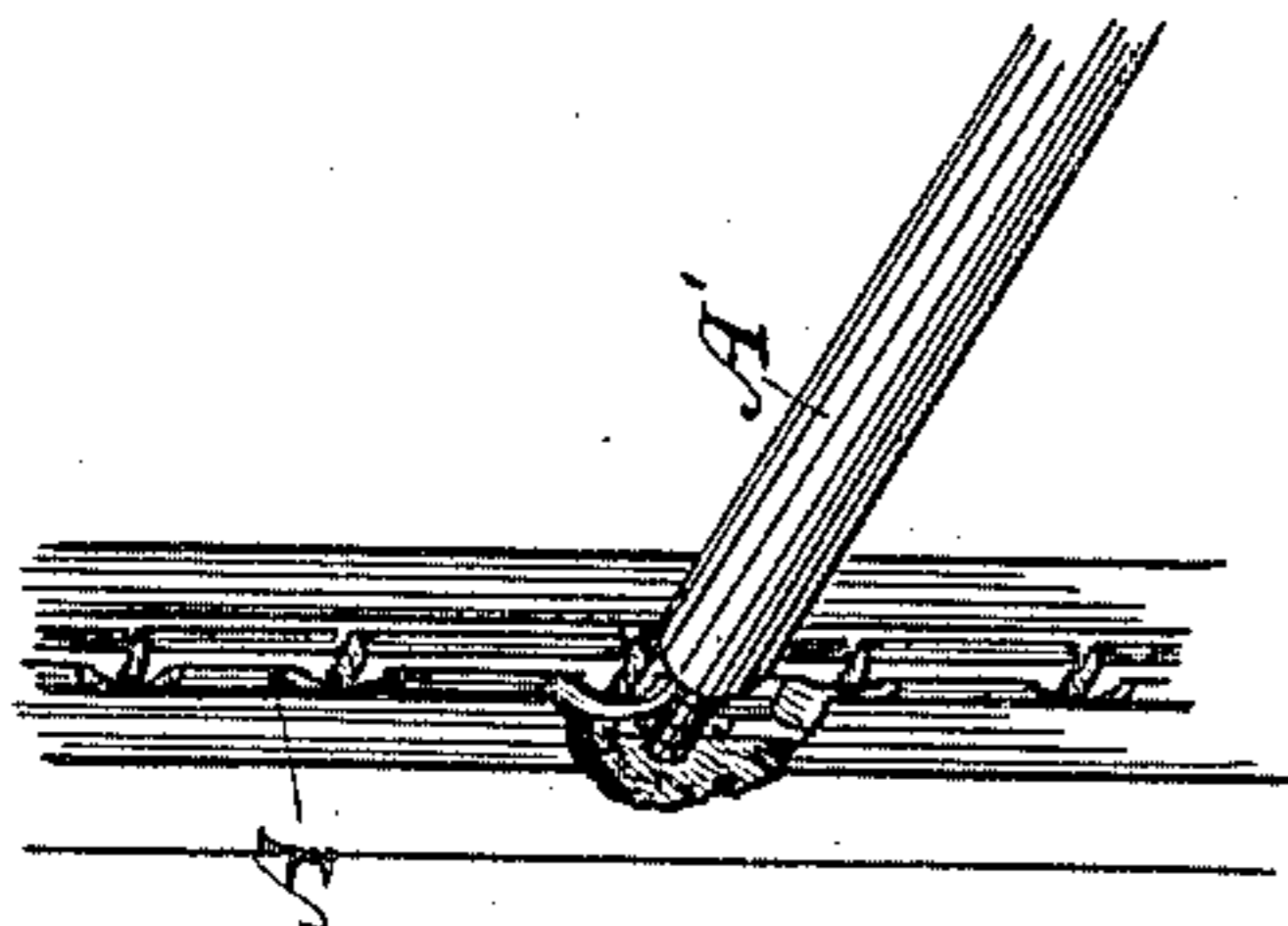


Fig. 3.

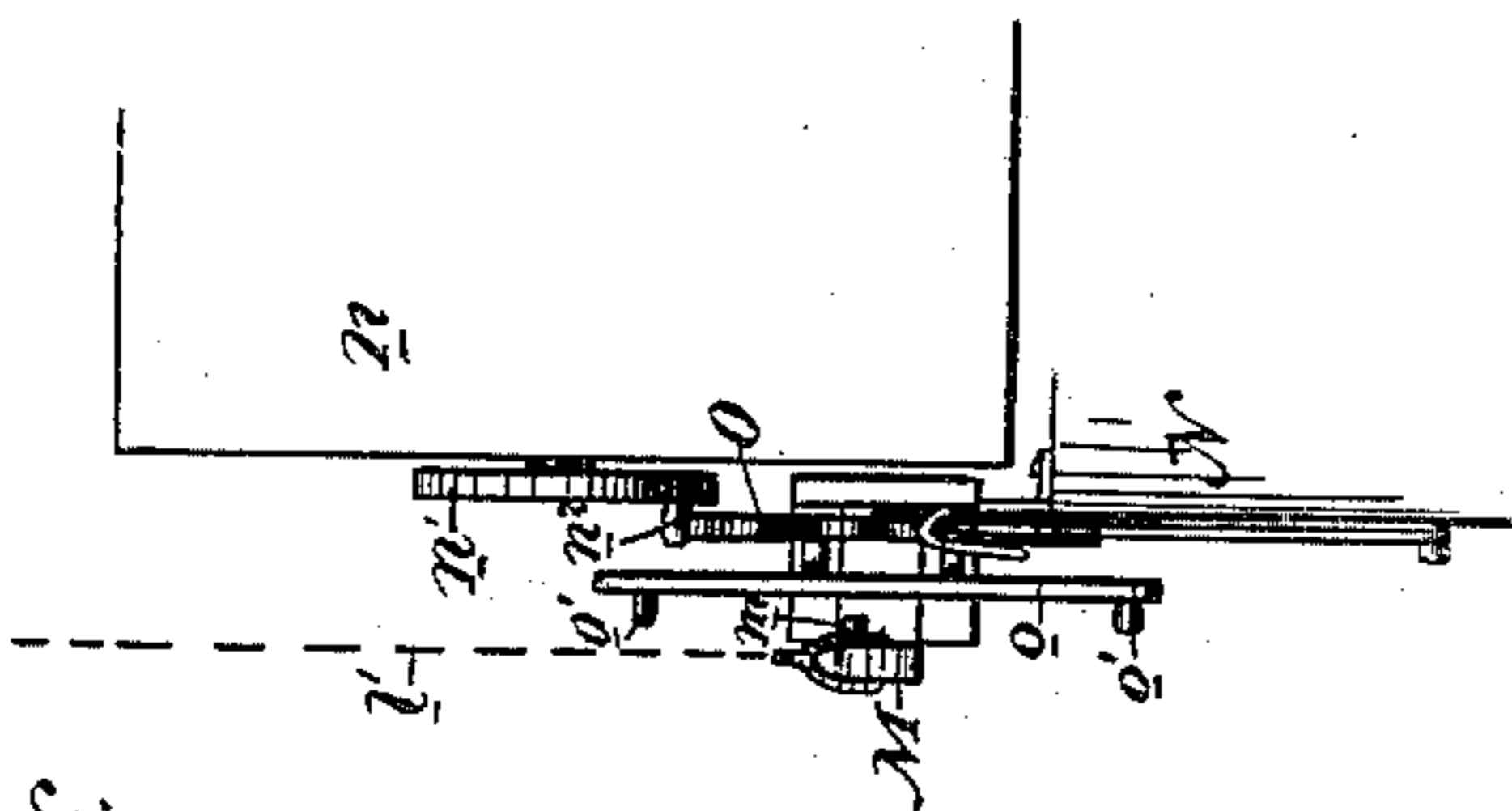


Fig. 6.

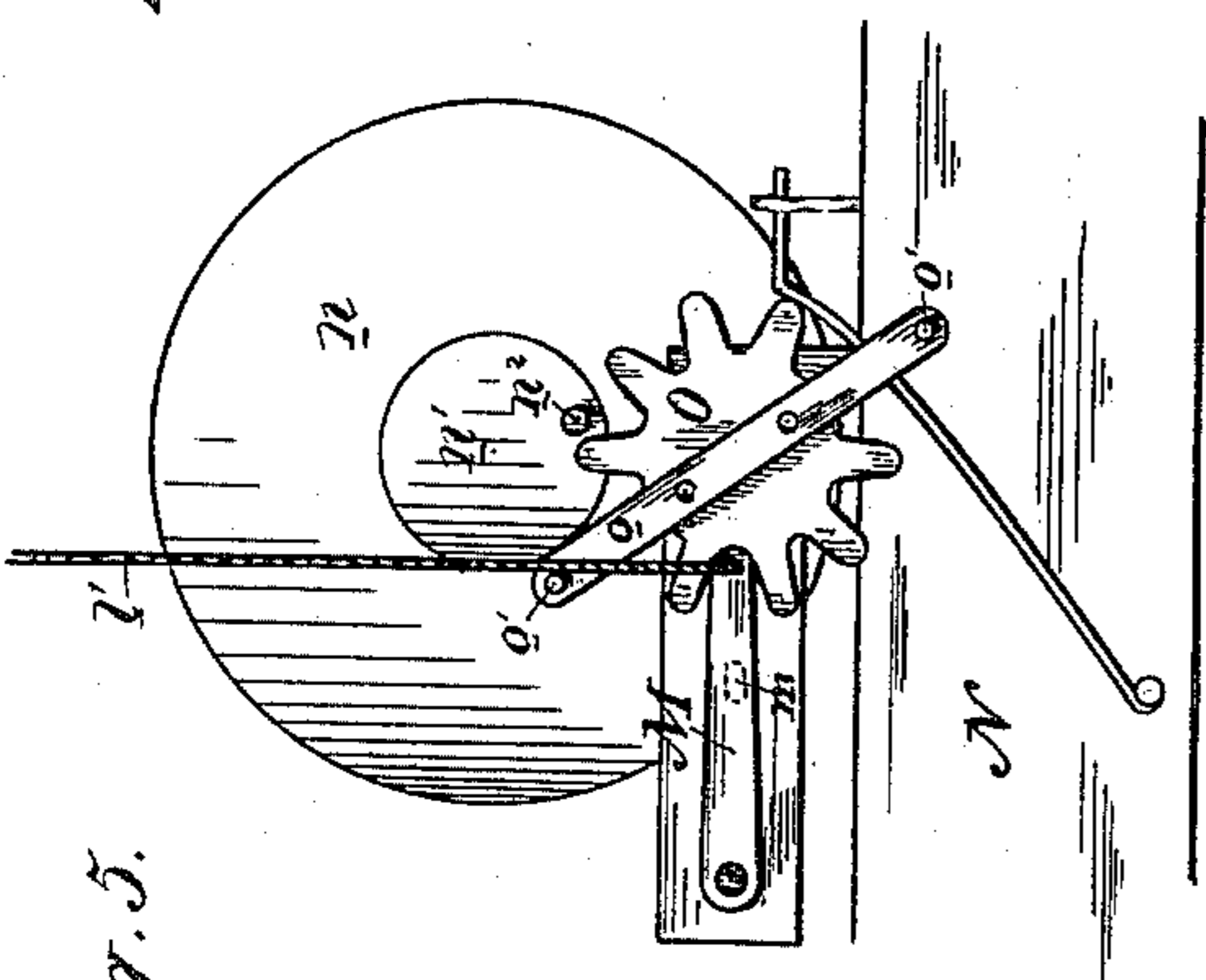


Fig. 5.

Witnesses,
Geo. H. Strong.
J. L. Moore.

Fig. 8.

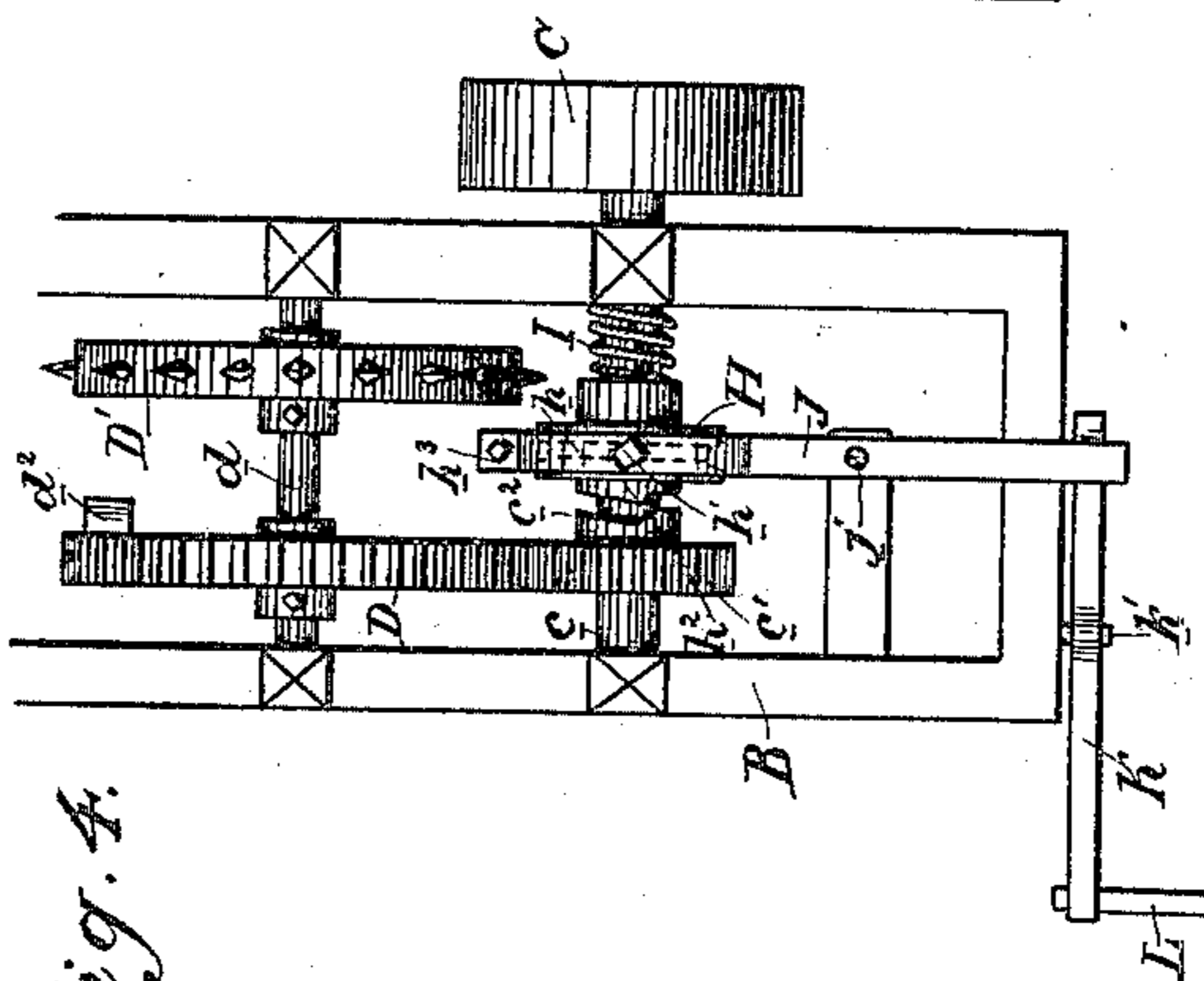
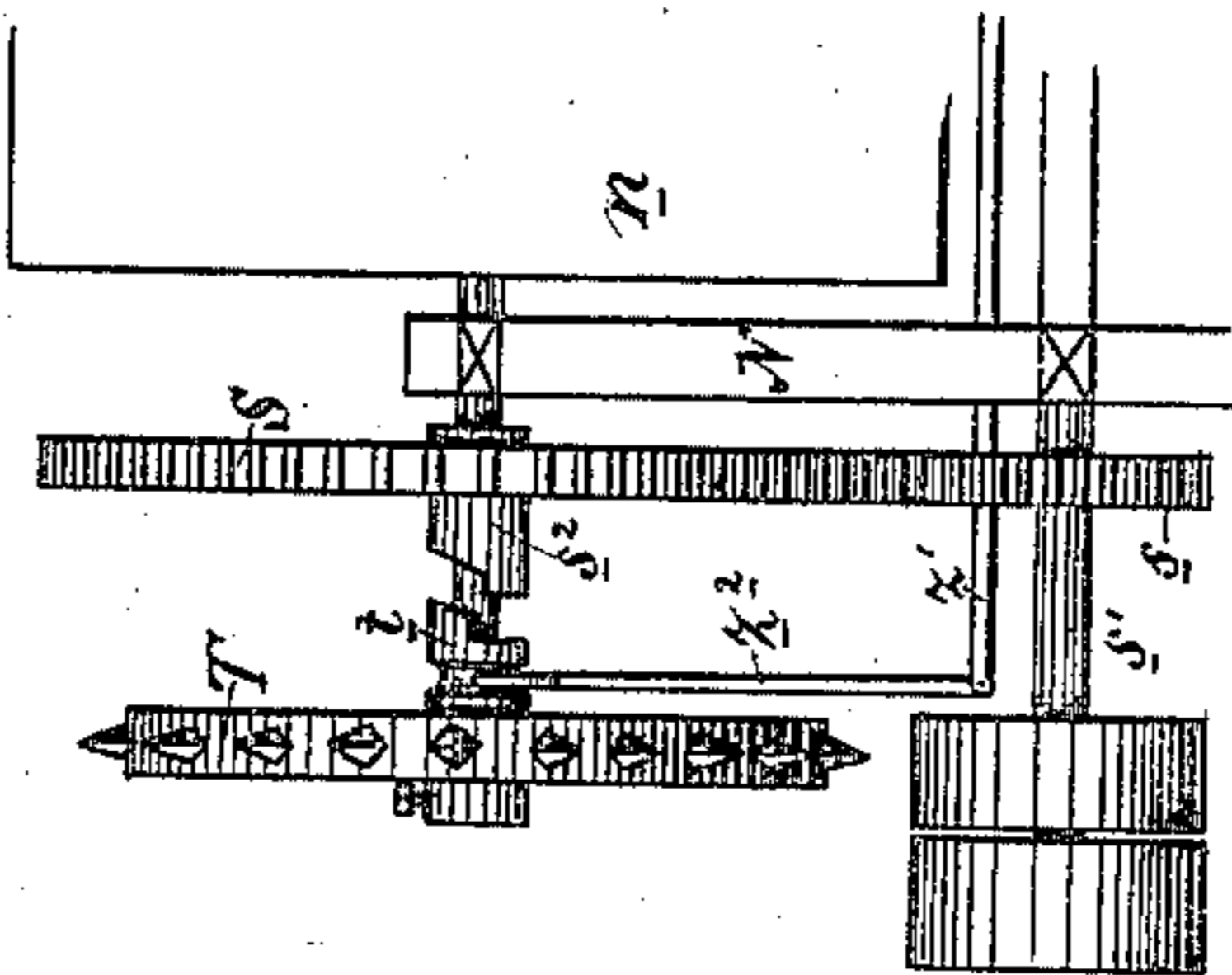


Fig. 4.

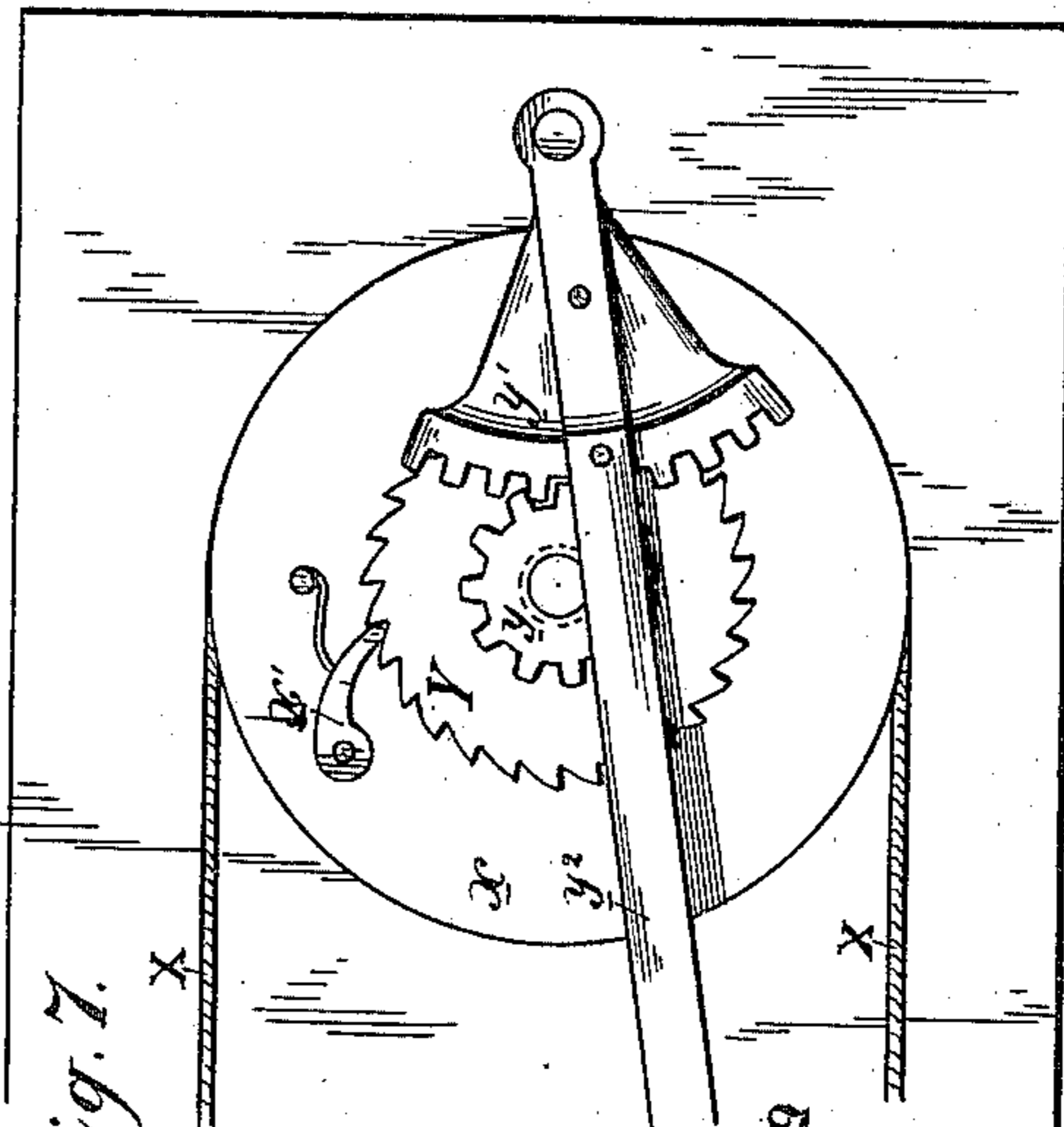


Fig. 7.

Inventor,
C. Rahsskopff.
By Dewey & Co.
attorneys

UNITED STATES PATENT OFFICE.

CARL RAHSSKOPFF, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO THE
SCHMIDT LABEL AND LITHOGRAPHIC COMPANY, OF SAME PLACE.

MACHINE FOR DRYING VARNISHED LABELS.

SPECIFICATION forming part of Letters Patent No. 335,771, dated February 9, 1886.

Application filed May 4, 1885. Serial No. 164,389. (No model.)

To all whom it may concern:

Be it known that I, CARL RAHSSKOPFF, of the city and county of San Francisco, State of California, have invented an Improvement in
5 Machines for Handling and Drying Newly-Varnished Labels; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a new and useful
10 machine, the object of which is to handle and dry wet or newly-varnished prints, sheets, labels, &c.; and my invention consists of an endless serpentine carrier consisting of side chains and parallel spaced transverse bars
15 adapted to receive and carry labels, &c., power-transmitting mechanism for driving the carrier, and a clutch mechanism operated and controlled by the varnishing-press for regulating and controlling the periodical move-
20 ment of the carrier, a novel arrangement of swinging flies for feeding the labels, an endless transverse belt located between the flies and adapted to receive the labels and deliver them to the carrier, and a mechanism oper-
25 ated and controlled by the press for periodically moving the belt, all of which, together with the various details of construction, I shall hereinafter particularly describe.

The particular application of my invention
30 is the handling of newly-varnished labels. These are put through the varnishing-press rapidly, and are too wet to handle without injury immediately after being varnished, and much time is wasted in attempting to take
35 them by hand and remove them to any drying apparatus or elsewhere; but by means of the machine which I have invented the labels are not touched by the operator, but are carried by the mechanism of the varnishing-press
40 through intermediate devices to the carrier, and are moved along by it for a length of time equal to the extent of the carrier, so that when they come out at the other end they are comparatively dry and can be easily handled.

Referring to the accompanying drawings,
45 Figure 1 is a perspective view showing my machine. Fig. 2 is a perspective view of the carrier. Fig. 3 is a perspective detail showing the attachments of one of the bars to side
50 chain of the carrier. Fig. 4 is a plan of the clutch mechanism controlling the periodical

movement of the carrier. Fig. 5 is an elevation of the mechanism on the varnishing-press for operating the clutch mechanism in Fig. 4. Fig. 6 is a vertical section of Fig. 5. Fig. 7
55 is an elevation of the mechanism by which the endless belt which moves the labels laterally is operated. Fig. 8 is a view of the clutch mechanism by which the machine is stopped and started. 60

The carrier, as will be seen by Fig. 2, consists of two endless side chains, A, between which extend transverse bars A'. These chains pass up over chain-pulleys *a* and down over smooth pulleys *a'*, the course being a serpen-
65 tine one, returning horizontally underneath to the point of beginning. These pulleys are all mounted in a suitable frame-work, B, which is shown in Fig. 1. The dimensions of the carrier are governed by the length of time
70 which it is desired the labels shall take in passing through from the feed end to the discharge end. This should be long enough to give them an opportunity to dry, either wholly or partially, the accomplishment of which ob-
75 ject may be assisted by any suitable arrangement of steam pipes or fans or other drying apparatus to be located within the frame-work B.

The bars A' are journaled loosely in suitable
80 bearings in the chains, as shown in Fig. 3, whereby they may accommodate themselves to their constantly-changing positions throughout the course of travel of the carrier. It is intended that the travel of the carrier shall
85 be periodical, so that it shall remain at a state of rest, with one of its bars in position to receive the labels, until said bar shall receive its complement, and then to make its move-
90 ment to carry the labels one step in advance and bring the succeeding bar in position for a fresh set of labels. To accomplish this result, I have the following mechanism, which is shown in Fig. 1, and more in detail in Fig. 4.

C is a pulley, which is adapted to receive
95 the driving-belt from any suitable source of power. This pulley is located on the side of the frame-work B, and has a shaft, *c*. Upon the inner end of the shaft is a loose pinion, *c'*, which carries on its side a toothed clutch, *c''*.
100 The pinion meshes with a gear, D, on a counter-shaft, *d*, which carries also a chain-pulley,

D', from which a belt, d' , Fig. 1, extends to a pulley, E, on a shaft, e , which extends transversely across the front of the frame B, and forward of the first line of side chains and bars of the carrier, so that it does not interfere with the labels.

Upon the shaft e is a beveled pinion, e' , Fig. 1, which meshes with a beveled pinion, f , on the end of a shaft, F. This shaft carries a number of beveled pinions, f' , which mesh with beveled pinions g on the small counter-shafts, which also carry the pulleys a , over which the chains of the carrier pass. A shaft similar to F, carrying a series of beveled pinions similar to f' , which mesh with beveled pinions similar to g , are located on the other side of the carrier, and are driven by means of a beveled pinion on the other end of the shaft e , which meshes with a beveled pinion similar to f . By this mechanism the carrier is driven from both sides, and also has a number of points where the power is applied directly, so that the strain of driving is not so great as if it were driven from but one chain-pulley.

Feathered upon the shaft c is a groove-faced disk, H, in the groove of which a collar, h , is loosely fitted, and is set by a screw, h' . A spring, I, upon the shaft c has a tendency to push the feathered disk H over into engagement with the clutch c^2 , the adjacent face of the disk being correspondingly shaped to form a clutch, h^2 , as shown in Fig. 4. The collar h has a projection, h^3 , with the side of which a beveled-faced lug, d^2 , upon the gear D is adapted to engage. The collar is formed with a lever-extension, J, pivoted at j , and having its other end adapted to fit in a notch, k , made in the end of a vertically-swinging lever, K, which is pivoted at k' . Under the other end of the lever K bears the forward end of a long lever, L, pivoted at l , and is influenced by a spring, l^2 . It has attached to its other end a wire or cord, l' . Referring now to Fig. 5, it will be seen that this wire or cord extends downwardly, and is attached to the forward end of a lever, M, which is pivoted to a bracket on the side of the varnishing-press.

N is the varnishing-press, the upper cylinder or roll, n , of which is provided, as shown in Fig. 5, with a disk, n' , on one end. This disk carries a pin, n^2 . Mounted upon a counter-shaft is a toothed wheel, O, here shown as having ten teeth, with one of which the pin n^2 is adapted to engage at each rotation of the cylinder n . Upon the side of the toothed wheel O is a diametrical lever, o , having in each end a pin or stud, o' . Upon the lever N is a pin or stud, m , with which the pins o' of the diametrical lever o are adapted to engage.

The operation of this mechanism is as follows: At every rotation of the cylinder n of the varnishing-press the pin n^2 comes in contact with and turns the toothed wheel O one tooth, and in five revolutions it turns the toothed wheel five teeth, whereby the lever o is carried around so that one of its pins o'

comes in contact with the pin m of the lever M. This forces down said lever, pulling the cord l' and drawing down one end of the lever L, by which the other end is raised. This end bearing under the inner end of the lever K, raises that end of said lever, whereby its outer end is lowered away from its engagement with the lever J. As this engagement was the resistance to the spring I, it now being relieved, said spring forces the clutch-disk H into engagement with the clutch c^2 , whereby power is transmitted through the gearing described to the carrier. It makes but a short movement, however, for in a revolution of the gear D its beveled lug d^2 , coming in contact with the projecting end h^3 of the collar h , forces said end outward, thus throwing the free end of the lever J into its engagement with the lever K, whereby the clutch-disk H is removed from the clutch c^2 , and is held in such disengaged position by reason of the engagement of the lever J with the notch k of lever K. This mechanism is so adjusted that the periodical movement of the carrier takes place after five labels have gone through the press, and therefore the length of the carrier-bars is also regulated to receive conveniently five labels. When a bar has received the five labels, the motion of the carrier takes place, and a fresh bar is presented for the reception of more labels.

Hinged to the rear of the press is a fly, P, which is adapted to receive the labels from the traveling cords or strings Q. Hinged to the frame-work B is a fly, R, which is adapted to receive the forward half of the label from the fly P. These flies rise approximately simultaneously to receive each label, about one-half lying on each fly, and they lower approximately together, thus folding the label over the cross-belt, which I shall hereinafter describe.

The fly P is operated by the following mechanism: Upon the end of the cylinder-shaft, Fig. 8, is loosely mounted a gear, S, with which meshes a gear, s , on the main driving-shaft s' . The gear S is provided with a clutch, s^2 , with which a clutch, t , feathered on the cylinder-shaft, engages. This clutch carries a pulley, T, from which a belt, t' , extends to a pulley, u , on a cross-shaft, U, under the press. Upon this shaft is a cam, u' , having a cam-groove, u^2 , in its side, which receives a stud, v , on the lower end of a rod, V, the upper end of which is connected with a bail, v' , which is itself connected with the fly P by links v^2 . The fly R is operated by means of the eccentric w on shaft U, over which plays an eccentric-strap, W, the rod of which is connected above with one end of a lever, w' , pivoted at w^2 and connected by a rod, w^3 , at its rear end with a crank-arm, r , on the shaft r' of the fly R. These devices should be so arranged that the movement of fly P will be a little in advance of fly R, so that they can accommodate themselves to the travel of the labels, each receiving it at the proper time and allowing

it to fall over the receiving-belt gently and evenly.

Secured to a short arm of frame B are arms *b*, which carry in their ends the stops *b'*. These consist of downwardly-extending fingers passing between the fingers of fly R. They are secured in the arms *b* by means of set-screws, whereby they may be vertically adjusted, and the arms *b* are themselves secured in a like manner for a similar purpose. The object of the stops *b'* is to limit the advance of the label and fix it in such a position that it shall hang with about an equal portion on each side.

Across the front of the frame B is the endless receiving-belt X. This consists, preferably, of two parallel and spaced ropes passing over double-faced pulleys *x*, at each side of the frame. They are located in the vertical plane of the front receiving-bars, which are adapted to rise between said ropes.

A periodical movement is given to the receiving-belt by the following mechanism: Referring to Fig. 7, it will be seen that the near pulley *x* is provided with a spring-pawl, *x'*. This pulley is loose upon its shaft. Y is a ratchet-wheel, fast on the pulley-shaft, and having a pinion, *y*, with which engages a pivoted segmental gear, *y'*, operated by a lever, *y''*, secured to its body. Upon the end of shaft U is a short crank, *y'''*, having a pin, *y''''*, upon which is slotted a bar, *y'''''*, the other end of which is pivoted to one end of a lever, *y''''''*, pivoted at *y'''''''*. With the other end of the lever is connected a bar, *y''''''''*, the upper end of which is connected with lever *y'''''''''*. Now, the crank *y'''*, as it moves through one-half its revolution, pulls down the bar *y'''''* and the forward end of lever *y''''''* raising its rear end. This raises the lever *y''''''*, which, through the segmental gear *y'* and pinion *y*, causes the rotation of the ratchet in a direction against the pawl, whereby the pulley *x* is rotated and causes the travel of the belt X across the front of the carrier. During the other half of the revolution of crank *y'''* the reverse movement takes place, and the ratchet simply slips by the pawl and the pulley remains at rest. This movement of the belt is so timed as to take place just after the flies have lowered and allowed the label to hang over said belt, so that the label is carried over out of the way of the next one.

In order to throw the whole machine out of or into gear, I have the rocking treadle-shaft Z, connected by a short crank, *z*, and bar *z'* with the clutch-lever *z''*, which embraces in the usual manner the feathered clutch *t*. By operating the shaft Z the clutch *t* is thrown into or out of engagement with the clutch *s''*, whereby the machine is started or stopped. The carrying-strings Q are driven from a drum, *q*, rotated by a belt, *q'*, from the shaft U.

A brief description of the operation of the entire device will conduce to a better understanding of the machine. The clutch *t* being thrown into engagement with the clutch *s''* and the machine started, the operator passes a label

through the rolls or cylinders. It is thence carried by the strings Q to and upon the fly P, which has just risen to or a little above the level of the belt X. About one-half of the label passes across the belt onto the fly R, which has risen to receive it, and the fingers *b'* stop it in such a position that it lies with about equal portions on each fly, and the belt X passing under its center. The flies now move down, allowing the label to hang on belt X, and almost at the same moment the belt travels laterally, carrying the label with it out of the way of the succeeding one. Five labels are thus received by the belt, when the engagement of the lever *o* with the lever M takes place. Power is by these means transmitted through spring-lever L to disengage lever J, whereby the spring I is allowed to throw the clutch *h''* into engagement with clutch *e''*, thereby transmitting the power from pulley C through the shafts, gears, and belts described to the chain-pulleys *a* by which the carrier is driven. As the carrier moves its cross-bar A', which lies immediately under the carrier-belt X, rises between the two parts of said belt and carries the labels up with it. By the time the succeeding bar of the carrier reaches its position under the belt X the beveled stud *d''* on gear D has come to its engagement with the projection *h'''* of the collar-extension *h* of lever J, whereby said lever is forced back to its engagement with lever K, in which position the clutch *h''* is out of engagement with clutch *e''* and the carrier stops. The belt X is again supplied, and a repetition of the operation described takes place. The labels are conveyed through the serpentine course of the carrier, and are taken off the other end, while the bars continue forward in a horizontal course in the lower portion of the frame B to the point of beginning. The serpentine course of the carrier is of advantage in creating a draft or movement of air as the labels move past each other, thereby drying them, even without the aid of other apparatus.

It is obvious that this machine may be applied to other purposes than handling wet labels.

Any kind of prints which would be injured by immediate handling can be put through the machine.

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

1. The carrier having transverse bars A', adapted to receive the wet or newly-varnished prints, sheets, or labels, means for driving the carrier, and a tripping mechanism comprising a pivoted lever, K, a lever, J, engaging the lever K, and a spring-lever, L, operated by the press-roll for imparting to said carrier a periodical movement when a bar has received its complement whereby a fresh bar is presented, substantially as herein described.

2. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, means for driving the carrier, a press

through which the labels, &c., are passed, provided with suitable advancing devices and a fly, in combination with a carrier consisting of endless side chains mounted and traveling in a serpentine course, and transverse spaced bars adapted to receive the labels, &c., from the fly of the press, a driving mechanism consisting of a shaft with a series of pinions meshing with pinions on the bars connected with the carrier, and a clutch mechanism, substantially as described, operated and controlled by the press, whereby the power or driving mechanism is alternately thrown into or out of gear to impart a periodical movement to the carrier, substantially as and for the purpose herein described.

3. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, a carrier consisting of side chains, A, mounted and adapted to travel in a serpentine course over suitable pulleys, and transverse bars carried by said chains, in combination with the side shaft, F, carrying a series of beveled pinions, f' , and driving-pinions f , the series of pinions g , meshing with pinions f' , and the chain-pulleys a of the shafts of pinions g , and engaging the chains of the carrier, the transverse shaft e , having pinions e' , meshing with pinions f , and devices for transmitting power to shaft e , whereby the carrier is driven, substantially as herein described.

4. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the combination of a press, an endless carrier to which the press feeds the labels, &c., power mechanism for driving the carrier, a clutch mechanism operating intermittently to impart a periodical movement to the carrier for the purpose described, and a tripping mechanism on and operated by the press for controlling and operating the clutch periodically, and comprising a pivoted lever, K, a lever, J, engaging the lever K, a spring-lever, L, and a connection between the lever L and the roll of the press, substantially as herein described.

5. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the carrier consisting of endless side chains and transverse bars, and a press adapted to treat and feed the labels, &c., to the bars of the carrier, in combination with a mechanism by which power is transmitted to the carrier, consisting of a main driving-shaft, a feathered clutch thereon actuated by a spring, and a loose pinion engaged by the clutch, a gear meshing with the pinion, and power-transmitting devices connecting said gear with the carrier, and a mechanism controlled by the press by which the clutch is disengaged and allowed to re-engage to impart a periodical movement to the carrier, consisting of a series of pivoted levers connected with the clutch and with a tripping mechanism on the press roller or cylinder, whereby the clutch is released and the carrier driven, and a lug on

the gear adapted to throw the clutch out again and into engagement with the lever mechanism, by which the carrier is stopped and is held in a state of rest, substantially as herein described.

6. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the clutch mechanism consisting of the disk H, feathered on the driving-shaft and having clutch h^2 , and the actuating-spring I and the loose pinion c' for transmitting power, and having a clutch, c^2 , in combination with the mechanism by which the clutches are disengaged, consisting of the collar h , encircling the disk H, and having a projection, h^3 , and a pivoted lever-extension, J, the beveled lug d^2 on a gear rotated by the pinion c' , said lug being adapted to engage the projection h^3 , whereby the clutch h^2 is moved out, and the lever K, having notch k , engaging lever J, whereby the clutch remains disengaged, substantially as herein described.

7. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, an endless carrier, and a press adapted to feed the labels, &c., thereto, in combination with a power mechanism automatically operated by the press-roll for driving the carrier, a clutch mechanism for making the power intermittent, whereby a periodical movement is given the carrier for the purpose described, a clutch-operating mechanism, and a mechanism by which the clutch mechanism is operated, consisting of the pin n^2 on the cylinder or roll of the press, the toothed wheel O, carrying lever o with pins o' , the pivoted lever H, with pin m , and the cord l' , connecting lever M with the clutch-operating mechanism, substantially as herein described.

8. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, an endless traveling carrier having transverse bars A', in combination with an independent double belt extending across the front of the carrier and adapted to receive the labels, &c., directly from the fly of the press and hold them above the bar of the carrier, whereby said bar in rising passes between the belts and picks up the labels, substantially as herein described.

9. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the cross-belt X, adapted to receive the labels from the fly of the press, in combination with a fast and loose pulley, and power mechanism comprising a segmental gear and intermediate devices controlled and operated by the press, whereby said belt is held stationary to receive a label, and then moved to present a fresh place for a succeeding label, substantially as herein described.

10. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, the cross-belt X, in combination with the mechanism for periodically driving it, as described, consisting of the loose pulley x , having pawl x' , the ratchet-wheel Y, engaging the

pawl, and the pinion y , the segmental gear y' , and lever y^2 , crank y^3 on a rotating shaft on the press, pivoted lever y^6 , and connecting-bars y^5 and y^8 , substantially as herein described.

5 11. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, oppositely-located and vertically-swinging flies adapted to receive the labels upon them, in combination with an intervening
10 belt upon which the belt is hung as the flies move down, substantially as herein described.

12. In a machine for handling and drying wet or newly-varnished prints, sheets, or labels, a vertically-swinging fly operated by the
15 press through which the labels, &c., pass, and an oppositely-located fly operated by said press to swing approximately simultaneously with the first fly, said flies being adapted to receive the labels, &c., between them, in com-
20 bination with a traveling belt between the two flies and adapted to hang or suspend successive labels as the flies move down, substantially as herein described.

13. In a machine for handling and drying
25 wet or newly-varnished prints, sheets, or labels, the combination of the oppositely-located and swinging flies P R, the intervening periodically-moving cross-belt X, and the periodically-moving main carrier having bars A',
30 adapted to rise up under and past the belt, all arranged and adapted to operate substantially as herein described.

14. In a machine for handling and drying wet or newly-varnished prints, sheets, or la-
35 bels, the swinging fly P and the cross-belt X,

in combination with the opposite swinging fly R, and the adjustable stops b' , by which the position of the label on the flies is defined, substantially as herein described.

15. A machine for handling and drying wet 40 or newly-varnished prints, sheets, or labels, comprising the press N, provided with suitable advancing-cords, Q, the oppositely-located and swinging flies P R, operated by the press and adapted to receive the labels be- 45 tween them, the cross-belt X between the two flies and adapted to receive and suspend the labels as the flies move down, and mechanism controlled and operated by the press for im- 50 parting to said belt a periodical movement, adapting it to receive successive labels, the endless carrier consisting of side chains, A, and transverse bars A', said bars being adapted by the movement of the carrier to rise up un- 55 der the labels on the belt and pick them up, a power mechanism for driving the carrier, and a clutch and tripping mechanism operated and controlled by the press for effecting an intermittent power transmission to impart a periodical movement to the carrier, where- 60 by the labels are taken from the belt when it has received a stated number, substantially as herein described.

In witness whereof I have hereunto set my hand.

CARL RAHSSKOPFF.

Witnesses:

RICHARD SCHMIDT,
HENRY BERNHARD.