

(No Model.)

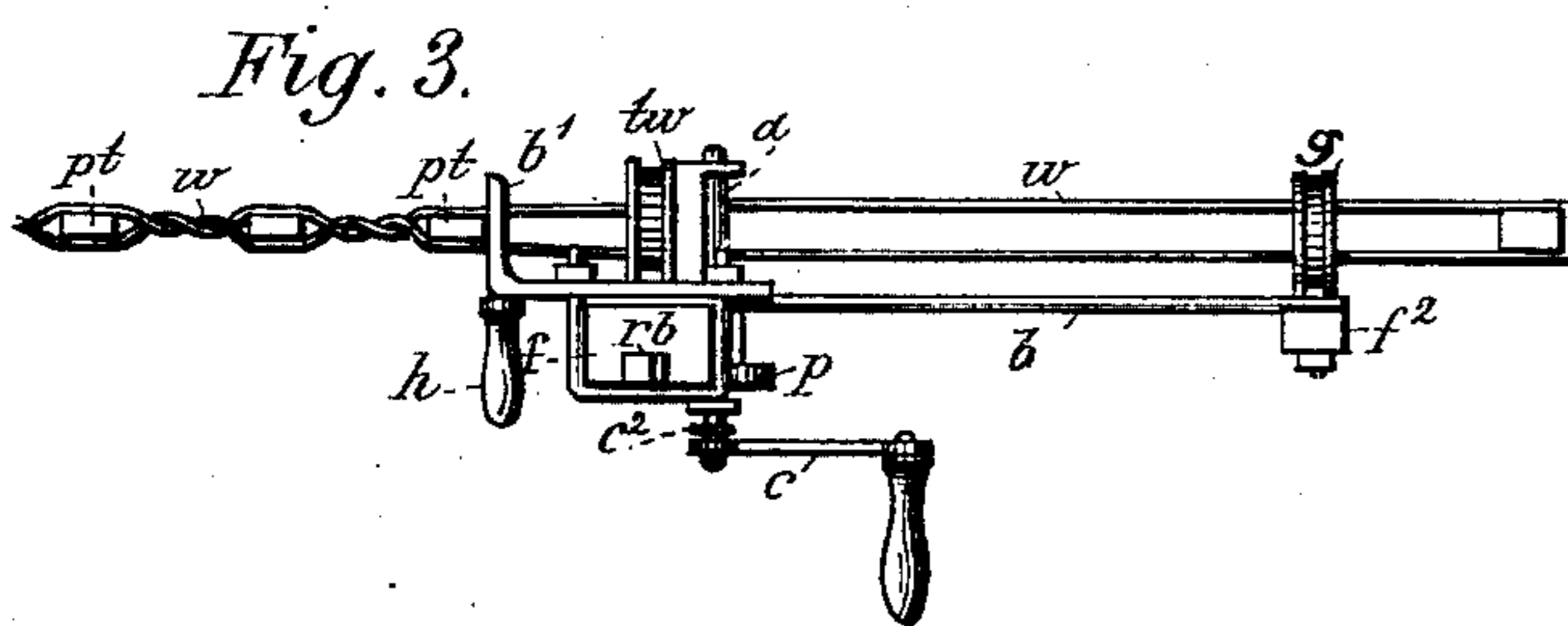
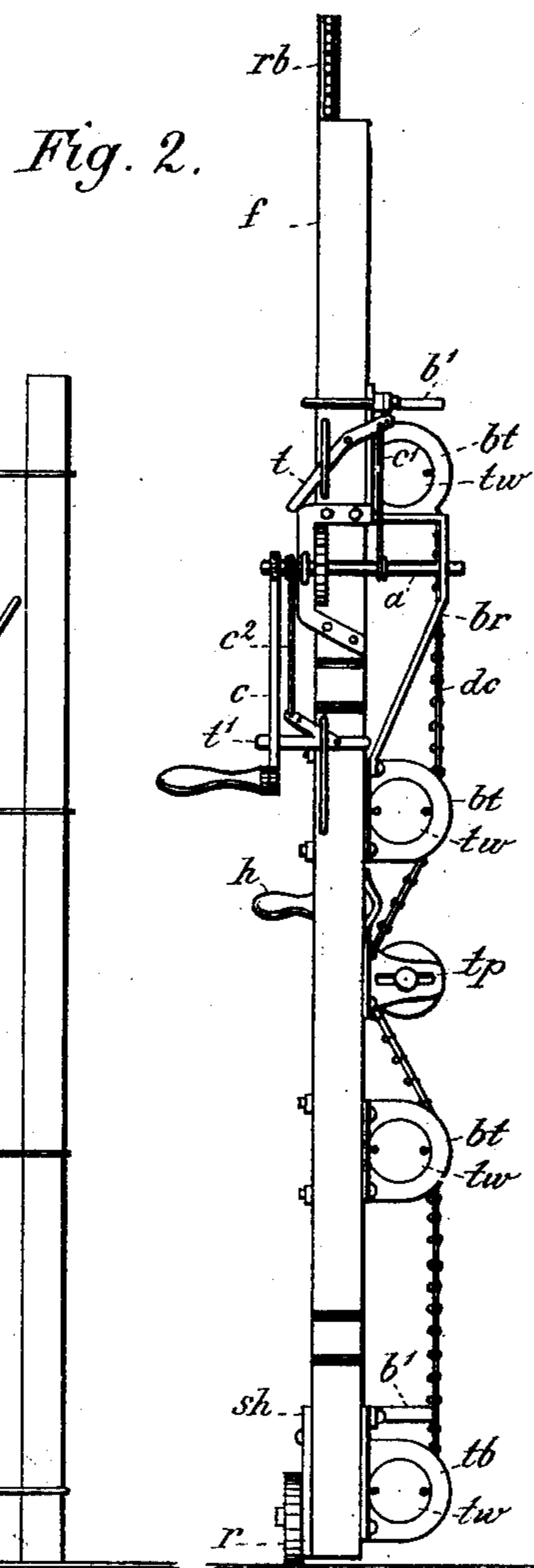
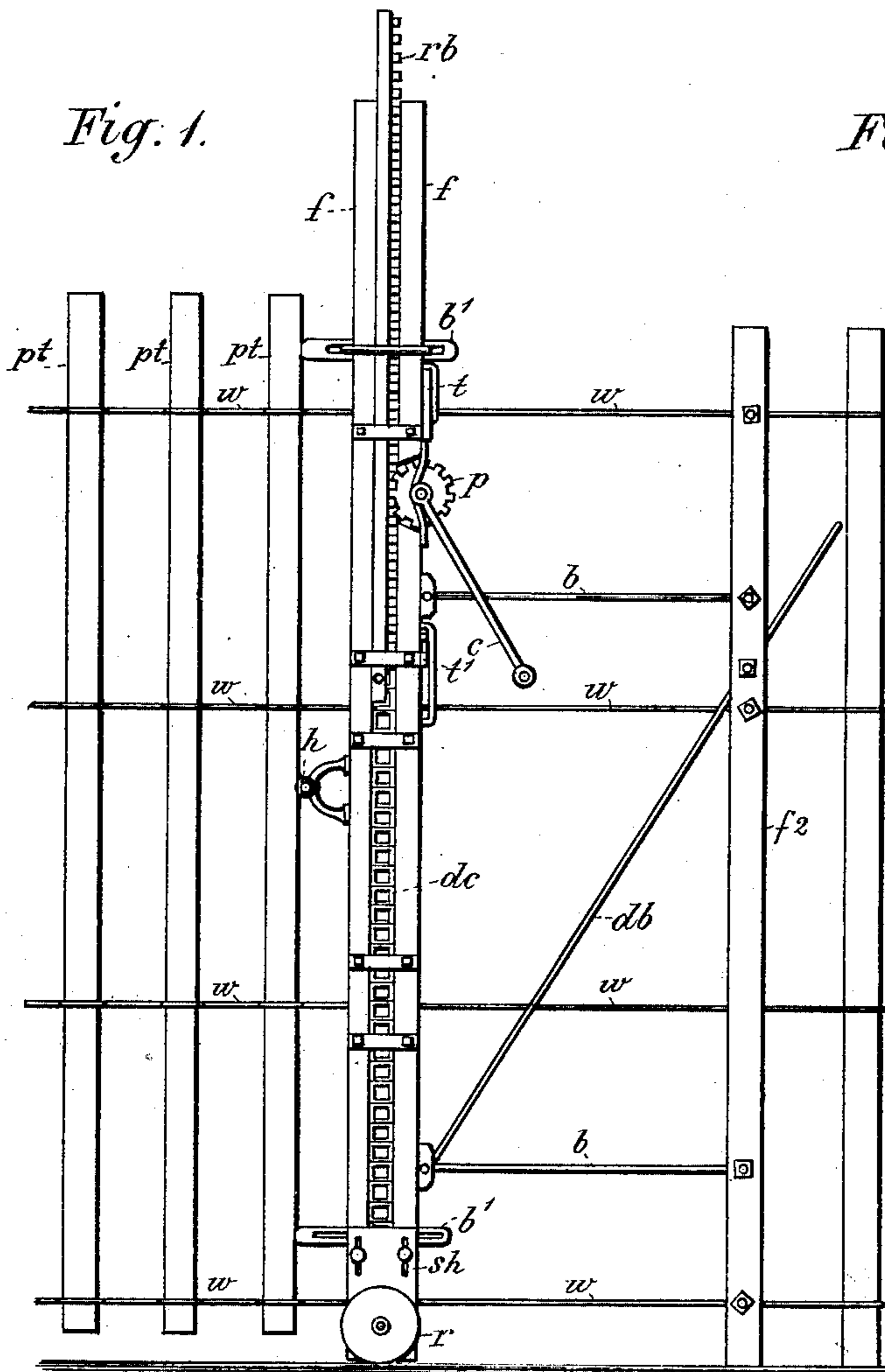
2 Sheets—Sheet 1.

F. M. & S. C. LOVE.

WIRE FENCE MACHINE.

No. 360,451.

Patented Apr. 5, 1887.



WITNESSES.

Gustav Bohn.
E. J. Ralston.

INVENTORS.

Francis M. Love.
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By C. F. Jacobs
Atty.

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Fig. 4.

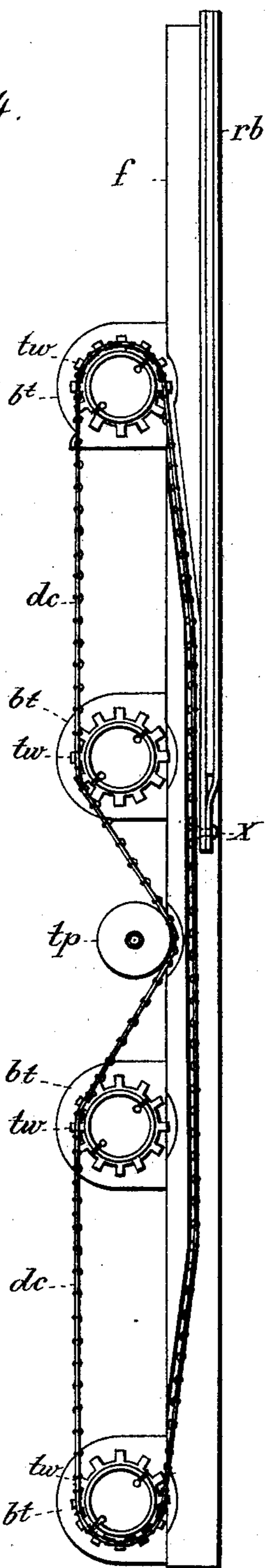
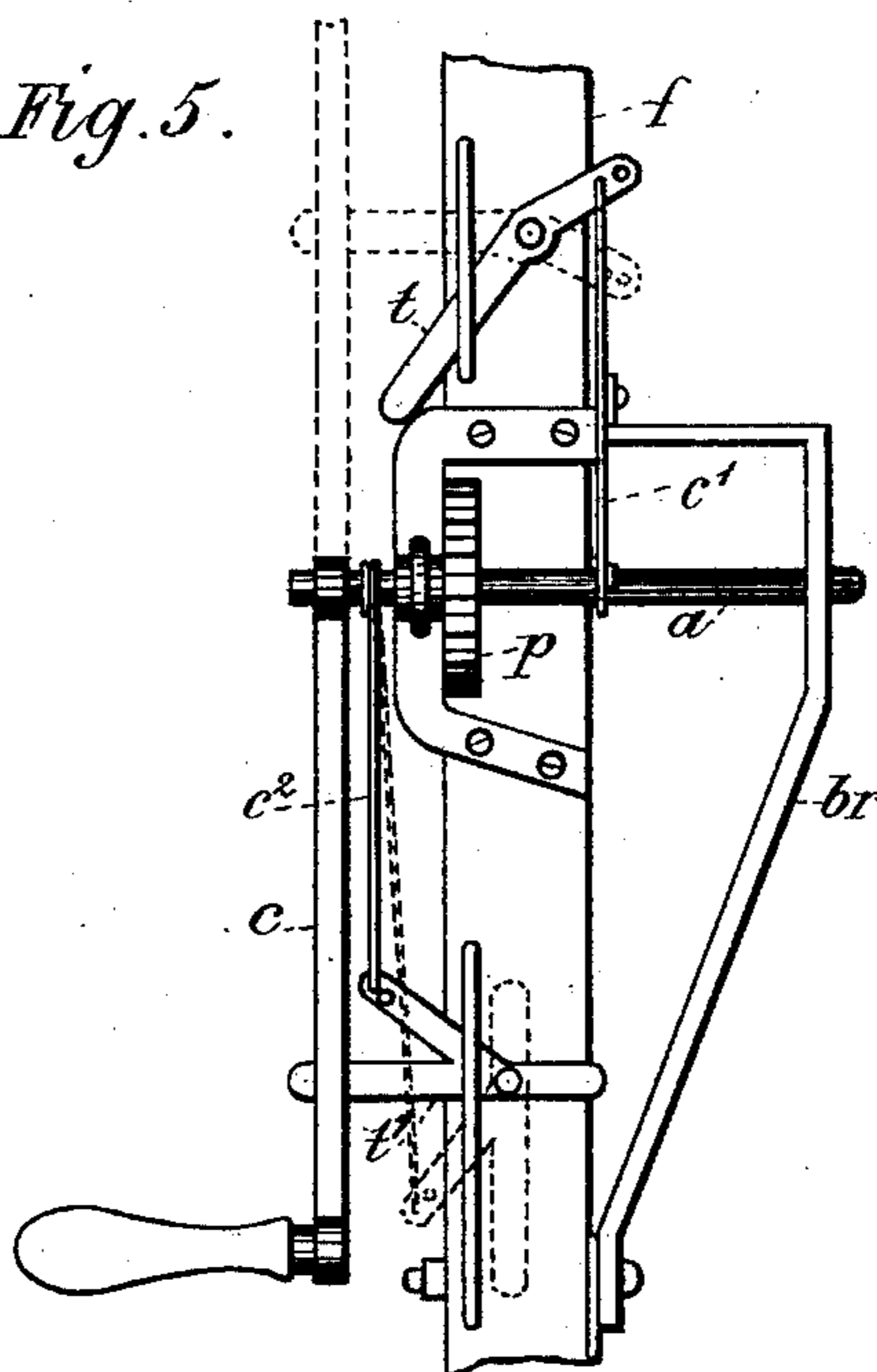


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANCIS M. LOVE AND SAMUEL C. LOVE, OF SHELBYVILLE, INDIANA.

WIRE-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 360,451, dated April 5, 1887.

Application filed November 30, 1886. Serial No. 220,273. (No model.)

To all whom it may concern:

Be it known that we, FRANCIS M. LOVE and SAMUEL C. LOVE, residents of Shelbyville, Shelby county, Indiana, have made certain
5 new Improvements in Wire-Fence Machines, a description of which is set forth in the following specification, reference being made to the accompanying drawings, in the several figures of which like letters represent like
10 parts.

Our invention relates to the construction of machines for weaving fences composed of wire and slats, and will be understood from the following description.

15 In the drawings, Figure 1 represents a rear view of the machine with the part of the fence as woven to the left, and to the right the auxiliary frame for steadying the machine while in operation, as shown in our former Letters Patent, issued to us November 2, 1886,
20 No. 352,061. Fig. 2 is a side view of the machine ready for operation. Fig. 3 is a top view of Fig. 1. Fig. 4 is a side view, on a larger scale, of the sprocket-wheel mechanism and
25 rack-bar that operates the twisters, one of the sides of the frame being removed. Fig. 5 is a detail view, on a still larger scale, of the trigger mechanism which is actuated by the crank.

In detail, *f* is the frame of the machine, at
30 the bottom of which is an iron shoe, *sh*, adjustable by means of the slots, as shown in Fig. 1, and on the bottom of all is a roller, *r*, upon which the machine is moved about, *h* being the handle by which it is lifted. This
35 frame is recessed to admit the sliding rack-bar *rb* and the passage of the drive-chain *dc* behind the rack-bar, the two being connected at X, Fig. 4, by a rivet or bolt, so that when the rack-bar is raised it sets the drive-chain in
40 motion.

c is a crank for revolving the pinion *p*, which is mounted on the short axle *a*, having bearings in the bracket *br*, connected with the framework. This pinion engages with the teeth of
45 the rack-bar, as shown in Fig. 1, so that when the crank is revolved the rack-bar is set in motion, and this in turn moves the drive-chain, which passes over the sprocket-wheels formed on the outside of the twisters *tw*, as shown in
50 Fig. 4. These twisters are inclosed in boxings *bt*, fastened to the frame, provided with the

ordinary slots or eyes for the admission of the wire, as shown in our former Letters Patent, hereinbefore mentioned.

tp is an idler or tightening-pulley, which re- 55
volves in bearings in a small bracket fastened about midway of the frame, as shown in Fig. 2, and this wheel is adjustable in its bearings, so as to be thrown in or out, according as it is
60 desired to tighten or loosen the drive-chain, as also shown in Fig. 2.

In the use of ordinary fence-machines it is well understood that after one slat or picket has been secured between the wires the operation of the machine is reversed for the next
65 picket—that is, the wires are twisted in an opposite direction—and opinions differ as to how many times the wire is to be twisted around the picket, some wanting one or one and a half
70 and others two and three twists; but whatever number of times the wire is twisted the operator is always obliged to look to see which way the wire was twisted, so that it may be re-
75 versed for the next picket, for if he makes a mistake about this and operates the twisters in the same direction upon two successive
pickets the work has to be undone, and much time is lost. In order to prevent any mistakes
80 of this kind, we have provided an automatic device for stopping the crank when the required number of twists have been made, so that it will be impossible to further operate
the twisters in the same direction. The movement of the crank must be reversed, because
85 the crank strikes against the top or trigger, which is raised or lowered by the action of the crank itself. This device is shown in detail in
Fig. 5.

Near the outer end of the axle *a*, and between the crank *c* and pinion *p*, is a cord, *c*², con- 90
nected at one end with the axle so as to wind upon it, and at the other end to a projection or arm on the trigger *t*, which is pivoted upon the side of the frame *f*. Beyond the pinion *p*
95 and on the same axle *a*, another cord, *c*², is connected so as to wind upon the axle, the other end of this cord having connection with the short end of the trigger *t*, which is also
pivoted to the frame, as shown in Fig. 5.

The cord *c*² is of such a length that when the 100
crank has been revolved a sufficient number of complete revolutions, (two or three, or more,)

the cord winding up on the axle will draw up the lower trigger, t' , until it stands as shown in Fig. 5, and when the crank has completed its set number of revolutions it will strike against the end of this trigger t' and stop, because it can go no farther in the same direction until this trigger has gotten out of the way. At the same time the cord c' is unwinding, letting the upper trigger, t , down out of the way of the crank; but both of these triggers are not necessary, so long as the crank is allowed to make any number of complete revolutions, as either one can be arranged to stop the crank in such case, the length of the cord being determined by the number of twists that is desired in the wire; but if a half-revolution is involved—that is to say, if it is desired to twist the wire one and one-half times or two and one-half times, in short, whenever the half-revolution is included—then both of the stops or triggers become necessary, and the cords are arranged so that one trigger or the other will stop the crank on the half-revolution thereof. Of course it is understood that the cords c' and c'' are wound in opposite directions upon the axle a . By means of this device, the form of which can be considerably varied without departing from the principle thereof, the operator winds up the cord gradually, and it will stop the crank at the right point when the proper number of twists have been given about any picket, and the pressure of the crank against the stop will readily indicate to the operator that in weaving the next picket he must turn his crank in the opposite direction, and this movement unwinds the cord connecting with the axle, and by the time the crank has made one revolution the one trigger is down out of the way and the other is beginning to rise in order to stop the crank at the proper point for the next weaving—that is, when half-revolutions are included—for if complete revolutions are always made, then, as before said, only one of these triggers are necessary, the length of the cord being adjusted so that the reversing of the machine, with the necessary number of revolutions, will not only drop the trigger out of the way of the crank, but will wind it up again in the opposite direction, so as to again lift it in time to stop the crank when the same number of revolutions have been completed.

The dotted and full lines in Fig. 5 indicate the different positions taken by the crank and trigger during the operation just described.

The auxiliary frame f^2 is connected to the machine by the horizontal braces b and the diagonal brace db , and this frame is provided with guides or eyes, as the one described in Letters Patent No. 352,061, before mentioned, and no part of this mechanism is herein separately claimed.

The machine being set up in the field, the wires are secured to the starting-post and passed through the eyes of the twisters tw and then through the guides g and the auxil-

iary frame f^2 , and thence to a post or any suitable tension device set up at a proper distance, and the pickets, being brought against the beaters b' , are held in place, the twisters are revolved by means of the crank c and its pinion p , causing the rack-bar rb to rise, drawing the drive-chain dc with it, and motion is thus imparted to the sprocket-wheels and the twisters, and as the crank revolves it operates the upper and lower triggers, t and t' , by means of the cords c' and c'' , connecting such triggers with the axle a of the crank, and when the number of desired revolutions are completed, for which the triggers have been set by the operator, the crank will strike against one or the other of these triggers and is stopped, and another picket being set in place the operation is reversed, and so on as long as desired.

Having now described the construction and operation of our improved fence-machine, what we claim, and desire to secure by Letters Patent, is the following:

1. In a fence-machine, the frame f , recessed to admit the sliding rack-bar rb , the drive-chain dc , fastened to the end of such rack-bar and passing over the sprocket-wheels connected with the twisters tw , the axle a , mounted in bearings connected to the frame-work, carrying the pinion p , which engages with the teeth of the rack-bar, the crank c , for actuating the same, and the auxiliary adjustable frame f^2 , detachably connected with the machine, all combined substantially as described.
2. In a wire-fence machine, a frame-work in which a vertical rack-bar slides, operating a drive-chain connected to such rack-bar and actuated by a pinion mounted on an axle connected with the frame, with means for revolving such pinion, the drive-chain composed of links which pass over the sprocket-wheels connected with the twisters, the twisters mounted in boxings connected with the frame, an idler revolving in adjustable bearings connected with the frame for tightening or loosening the tension of the drive-chain, and the triggers t and t' , pivoted to the frame-work above and below the axle a of the driving-pinion p and connected to such axle by suitable cords, whereby the revolutions of the axle winds up one cord and unwinds the other, the frame-work having an adjustable shoe or plate at the bottom, which provides bearings for rollers upon which the frame is movable, and a handle for lifting the same, all combined substantially as described.

3. In a fence-machine, one or more stops or triggers pivoted to the frame-work and connected to the axle to which the power is applied, whereby the revolution of such axle operates to raise such stop in position to arrest the operation of the machine at the given point determined by the length of the connection of the stop to such axle, substantially as described.

4. In a fence-weaving machine, the triggers

5 t or t' , pivoted to the frame-work above or below the axle a of the driving-pinion p and connected to such axle by the cord c' or c^2 , whereby the revolution of the axle in one direction winds up the cord and brings the trigger in such position as to stop the movement of the crank at the desired point, and the opposite motion of the axle unwinds and drops the trigger out of the way of the revolution of

the crank in the opposite direction, substantially as shown and described.

In witnesss whereof we have set our hands this 20th day of November, 1886.

FRANCIS M. LOVE.
SAMUEL C. LOVE.

Witnesses:

C. P. JACOBS,
E. J. RALSTON.