

(No Model.)

2 Sheets—Sheet 1.

C. H. BLOSS.

STOP MECHANISM FOR SPINNING MACHINES.

No. 545,768.

Patented Sept. 3, 1895.

Fig. 1.

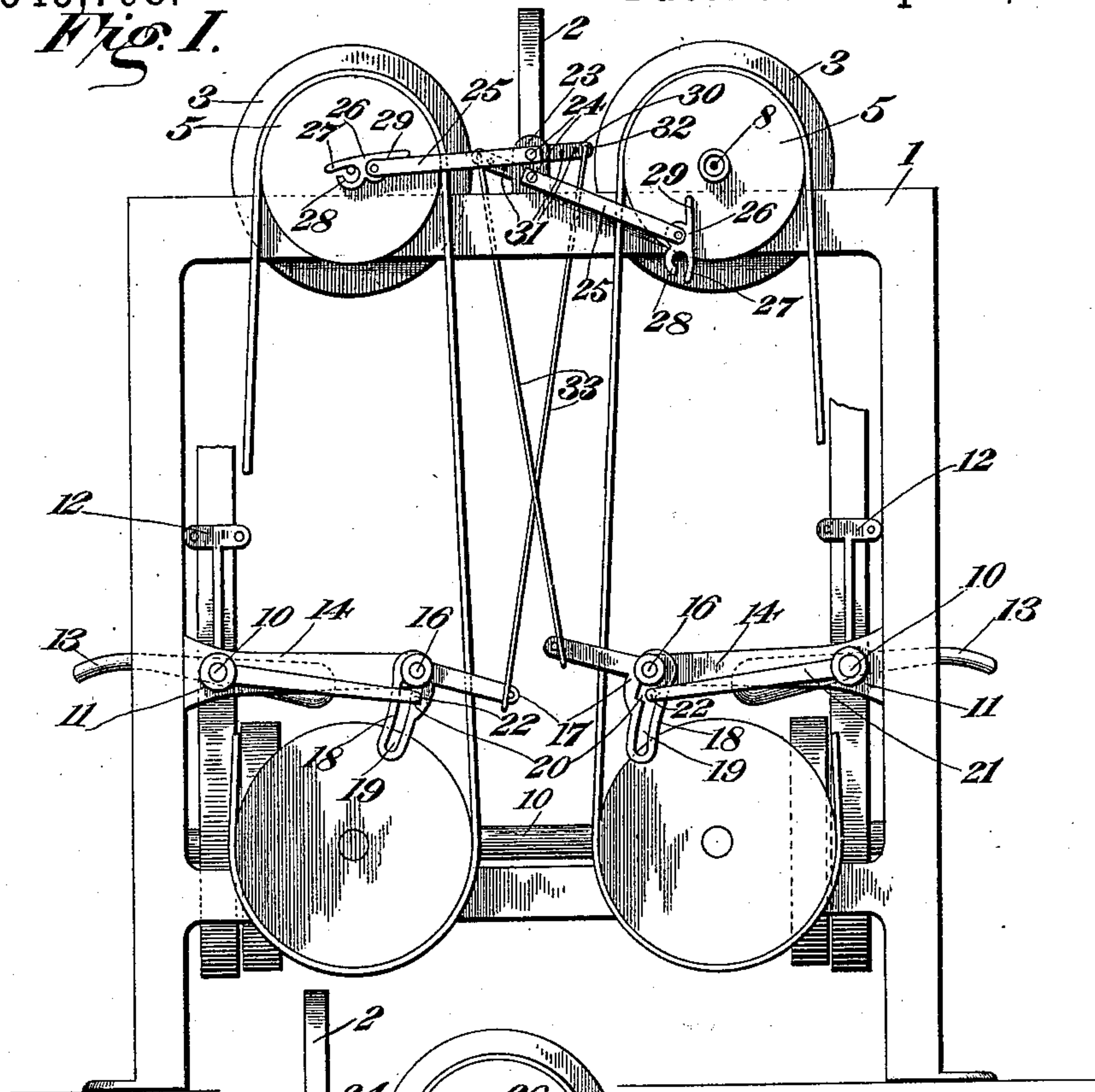
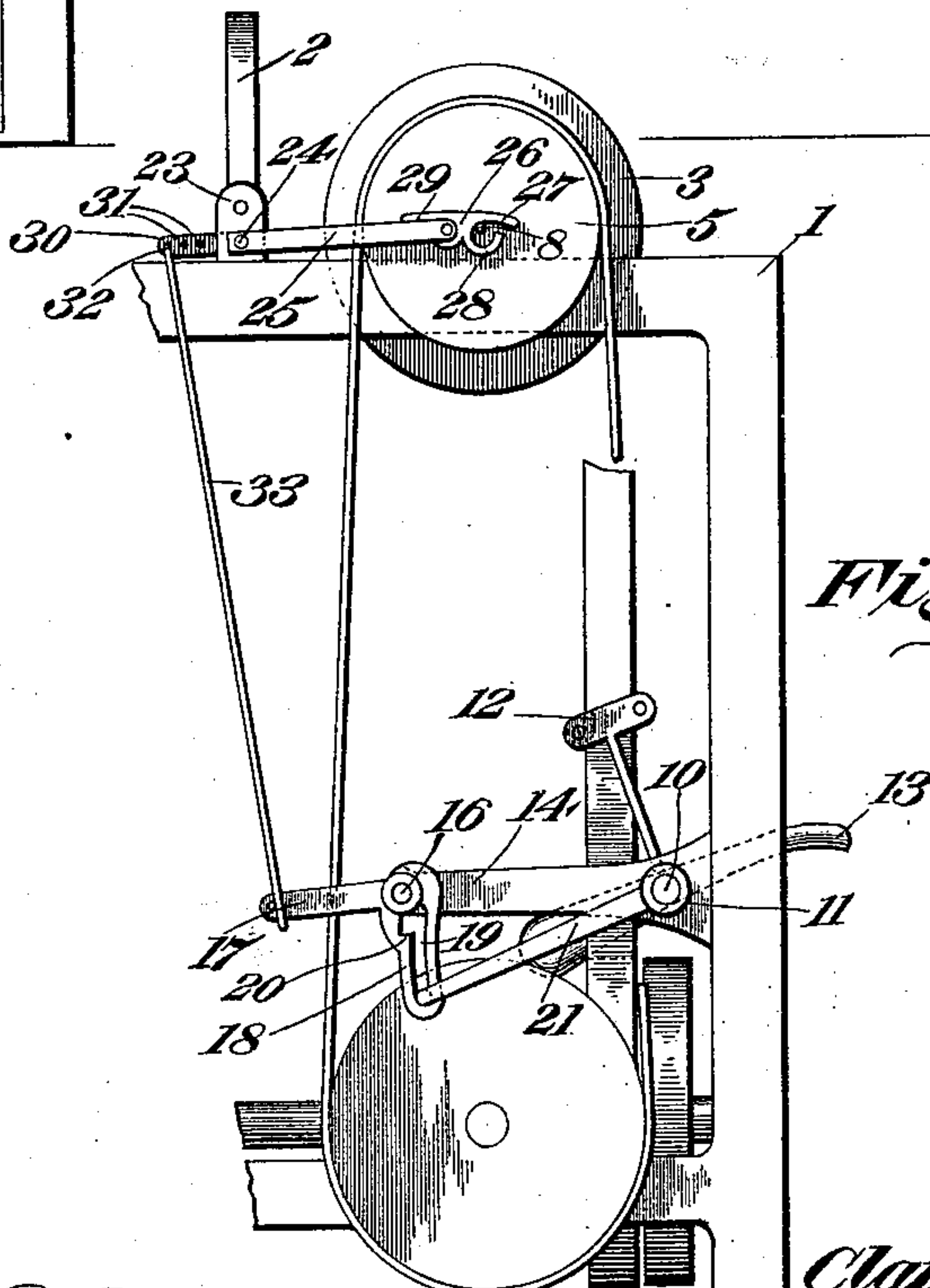


Fig. 2.



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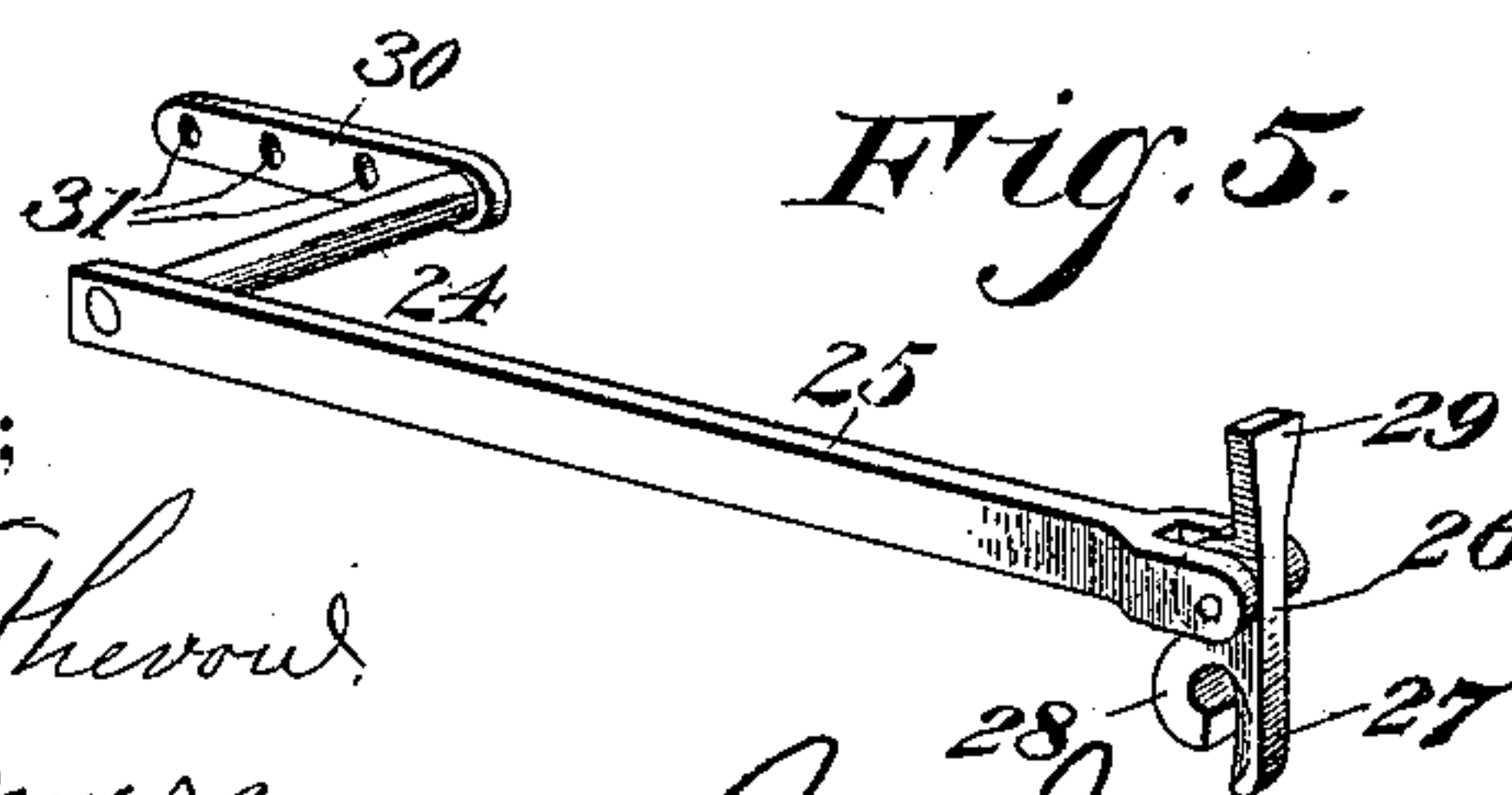
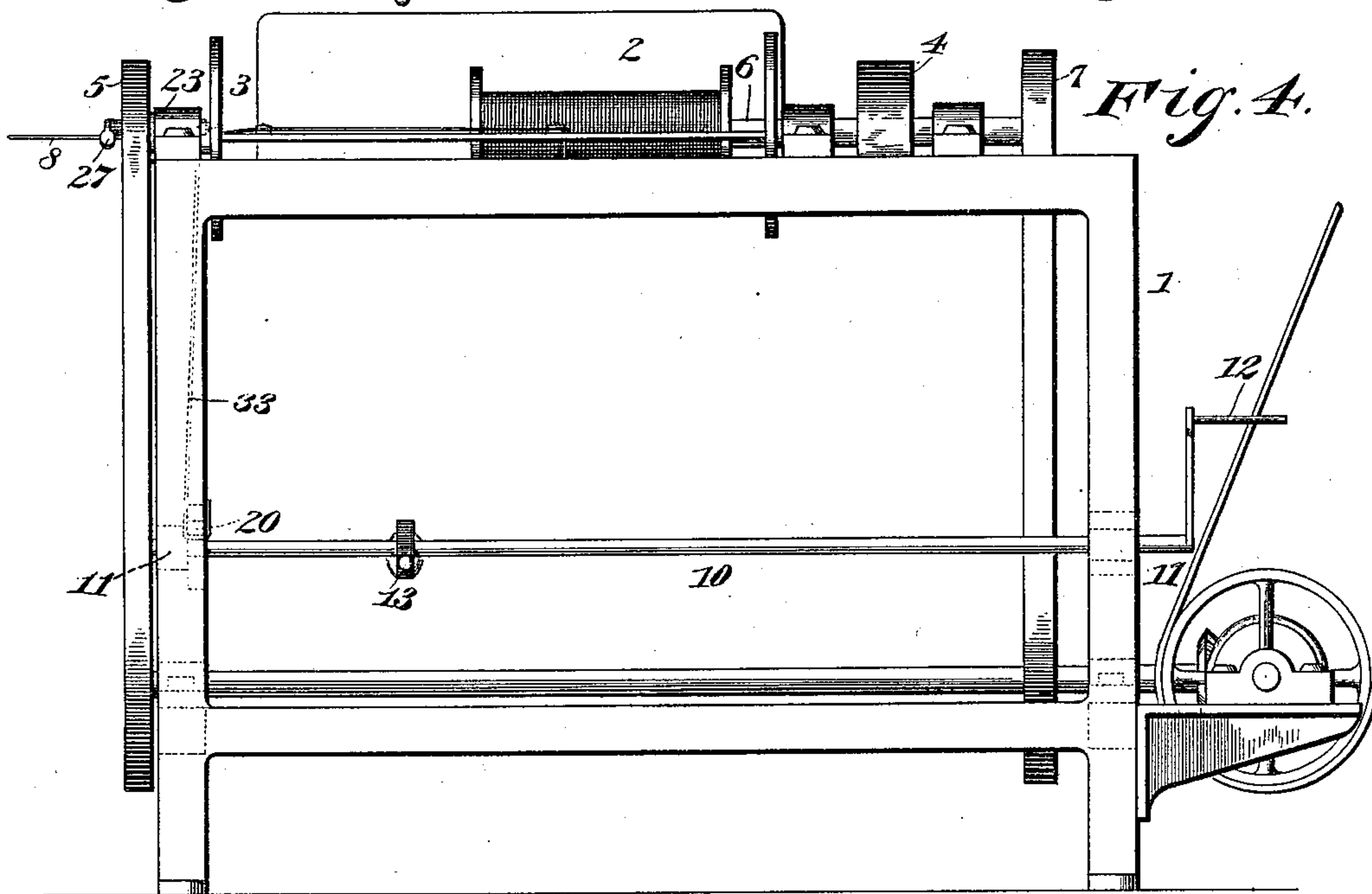
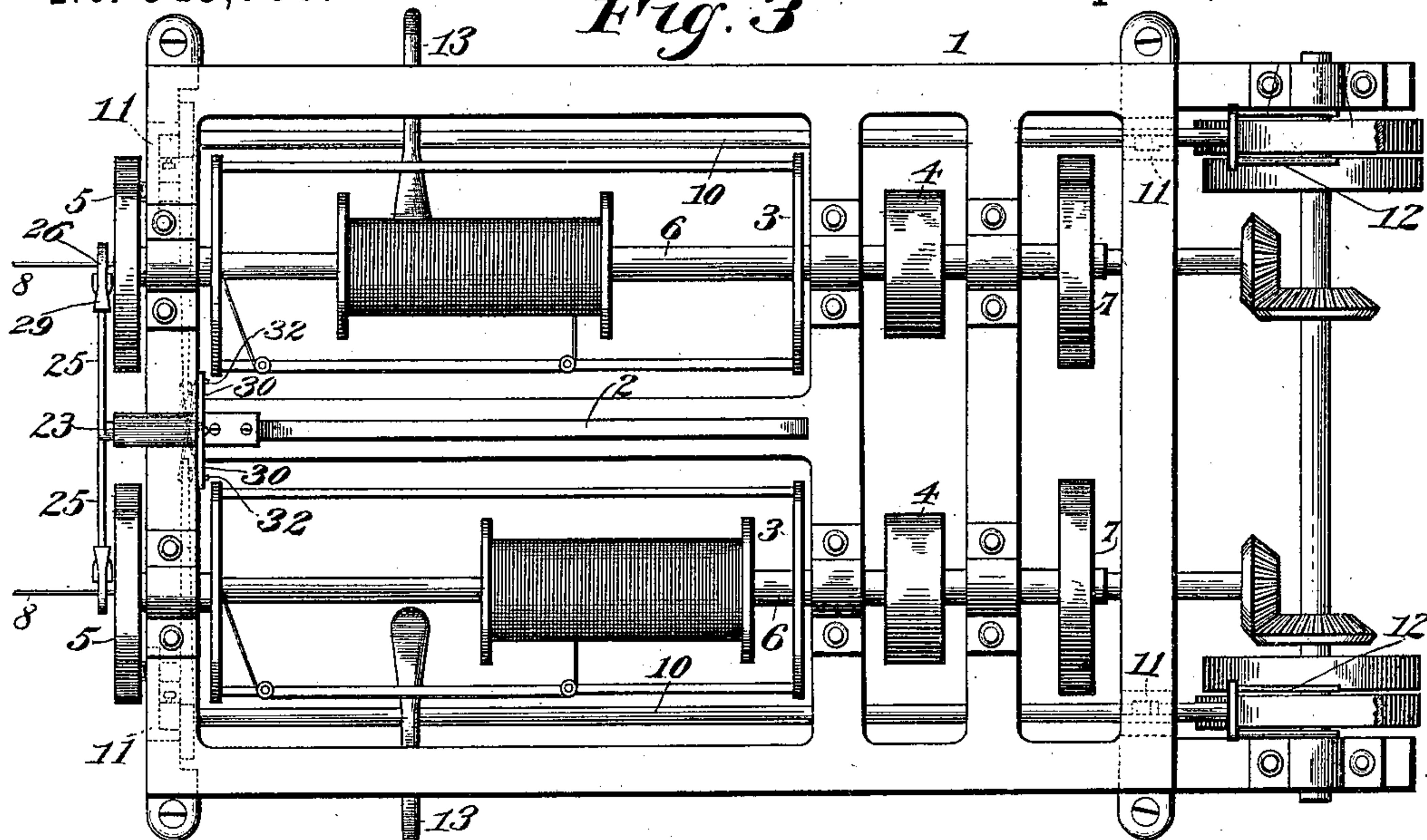
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

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STOP MECHANISM FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 545,768, dated September 3, 1895.

Application filed February 25, 1895. Serial No. 539,602. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE H. BLOSS, of Miamisburg, county of Montgomery, State of Ohio, have invented certain new and useful
5 Improvements in Stop Mechanism for Spinning-Machines, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce
10 mechanism adapted to act with certainty and precision in bringing spinning-machines—as, for example, a jenny—to a full stop upon the breakage of the yarn or twine. Heretofore mechanism has been devised for actuating a
15 shifter upon the breakage of the yarn; but it has been found in practice that after wear such mechanism fails to act by the mere shock of a break in the twine. My mechanism is designed to insure the prompt and certain
20 action of the shifter to drive the belt from the driving-pulley to the loose pulley and stop the machine.

In the accompanying drawings, Figure 1 is an end view of my invention. Fig. 2 is a similar
25 view of a portion of my machine, showing the parts in a different position. Fig. 3 is a top plan view. Fig. 4 is a side elevation of my machine. Fig. 5 is a perspective view of a part of my machine.

Referring to the figures on the drawings, 1
30 indicates a jenny-frame, which, as usual, carries on opposite sides of a fender 2 duplicate spinning mechanism. 3 3 designate the fliers. 4 4 indicate the flier-pulleys and 5 5 the capstan-pulleys. 6 6 indicate the tubes and 7 7
35 the bobbin-pulleys. The fliers 3 and pulleys 4 are connected and move independently of the bobbins and pulleys, as usual.

The parts above described may be of any
40 suitable or ordinary construction and are merely referred to incidentally to illustrate the application of my invention.

8 indicates the twine or yarn which passes continuously into the machine while it is in
45 operation, except for accidental interruption—as, for example, when the breakage of the twine occurs. It is for the purpose of stopping the operation of the machine proper when such interruption occurs, in order to
50 prevent the tangling of the twine about the moving parts, as well as to economize the motive power, that my invention is designed.

Coming now to the detail description of the mechanism which constitutes my invention,

10 indicates a longitudinal shaft journaled in
55 boxes 11 at the opposite ends of the frame 1. This shaft is operatively connected with a belt-shifter 12 and is provided, preferably at a point intermediate of its ends, with a counterweighted lever 13, secured thereto in such
60 relative position as to rotate the shaft when the weighted end gravitates from the horizontal position and thereby actuate the shifter to shift the belt from the power-pulley to the loose pulley. The brackets 14, in which the
65 boxes 11 are formed, are elongated and are provided at their outer ends with a bearing for the pivot-pin 16 of a trip-lever 17, provided with an arm 18 at right angles thereto, having a curved slot 19, defining a projection or
70 catch 20. To the extremity of the shaft 10 beyond the bracket I secure a lock-lever 21, extending in the direction of the arm 18 and provided at its extremity with a lug 22, projecting through the slot and co-operating with
75 the catch to sustain the lock-lever in the elevated position or to release it in the manner and for the purpose hereinafter specified. Preferably in line with the fender I provide
80 a journal-box 23, in which is journaled a balance-lever 24, the long arm 25 of which extends nearly to the twine in front of and adjacent to the capstan-pulley.

26 indicates what I term a "twine-tilt," pivoted to the extremity of the arm 25, provided
85 with a spoon end 27, adapted to lie gently upon the twine, and with a curved finger 28 thereunder which prevents the bouncing of the lever incident to the rapid movement of the
90 twine.

Inasmuch as it may be desired at times to disengage the balance-lever from the twine without stopping the machine, I provide a
95 stop 29 upon the tilt, which permits a disengagement of the lever from the twine by the elevation of its long arm, but which bears against the lever and affords a rigid connection between the tilt and lever when the parts are sustained by the twine.

The short arm 30 of the balance-lever is
100 provided with graduated apertures 31 for the reception of the stud 32 of a connecting-rod 33, loosely connected at its lower end with a tilt-lever, by means of which loose connection slight play and motion of the connecting-
105 rod and balance-lever is provided for.

The balance-lever and its connecting parts are so nicely balanced and adjusted that the

lever bears with the slightest pressure (and one not sufficient to interfere with the machine proper) upon the twine or yarn. While this is true the lever is not in perfect equilibrium; but there is constant, though slight, tendency of the lever to gravitate, which tendency is overcome by the resistance of the yarn.

Supposing the machine to be in operation and the twine for any reason to be severed, the balance-lever will drop and the trip-lever being thereby actuated through the intermediate mechanism, the latch will be swung out of engagement with the lug upon the lock-lever and later will gravitate within the limits prescribed by the slot in the arm 18, the dropping of the lock-lever and the rotation of the shaft being accomplished by the gravitation of the counterweight of the lever 13. It will thus be seen that the instant the resistance of the twine is withdrawn from the balance-lever the lock-lever will be released and the belt-shifter will be actuated to shift the belt and stop the machine through the rotation of the shaft under the impetus of the counterweight-lever. It is desirable, however, that when the balance-lever by its gravitation shall have performed its function of tripping the belt-shifter mechanism it shall be restored to its elevated position by continuation of the automatic operation, in order that the twine may be readily threaded through the tilt. In order to accomplish this, the slot 19 in the arm 18 is so curved that the gravitation of the balance-lever will by the rotation of the trip-lever throw said slot forward of the line of the arc described by the downward passage of the lug 22 under the impulse of the counterweight. It will be readily observed that this construction will cause the descent of the lock-lever 21 to swing the trip-lever upon its pivot and thereby elevate the balance-lever.

In order to prevent the depression of the balance-lever when the lock-lever 21 is raised, a loose connection is provided between the lower end of the connecting-rod 33 and the extremity of the trip-lever. It will be seen that when the lever 21 is raised the lever 17 will also be elevated without depressing the balance-lever, and as soon as the lug 22 arrives opposite the notch 20 the trip-lever 17 will drop back in positive relation with the rod 33, the notch 20 slipping under the lug 22. The only manual labor then necessary to restore the perfect operation of the machine is the restoration of the continuous strand, threading it through the tilt, and the restoration of the counterweight-lever and lock-lever to their initial positions by the depression of the handle of the former.

What I claim is—

1. In stop mechanism for spinning machines, the combination with driving mechanism, a belt shifter and belt shifter actuating mechanism, of trip mechanism to trip the belt shifter actuating mechanism, and mech-

anism to restore said trip mechanism to its initial position when displaced, substantially as specified.

2. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of trip mechanism to trip the belt shifter actuating mechanism, and mechanism operatively connected with the trip mechanism and belt shifter actuating mechanism to restore said trip mechanism to its initial position simultaneously with the actuation of the belt shifter, substantially as specified.

3. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of a lever supported normally by the yarn, a belt shifter and intermediate mechanism, and mechanism to restore said lever to its initial position when displaced, substantially as specified.

4. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of a lever normally supported by the yarn, a trip lever operatively connected with said lever and provided with an elongated slot and catch, a counterweighted shaft operatively connected with the belt shifter and provided with a lock lever co-operating with the catch and slot of the trip lever, substantially as specified.

5. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of a counter-weighted shaft connected with the belt shifter and provided with a lock lever, a balance lever, and a trip lever actuated in one direction by the balance and in the opposite direction by the lock lever, substantially as specified.

6. In stop mechanism for spinning machines, the combination with driving mechanism and a belt shifter, of a balance lever operatively connected with the belt shifter and provided with a pivoted tilt, substantially as specified.

7. In stop mechanism for spinning machines, the combination with a balance lever and connected mechanism, of a curved finger at the extremity of the balance lever and a projecting end above the finger, substantially as specified.

8. In stop mechanism for spinning machines, the combination with a balance lever and connected mechanism, of a pivoted tilt upon the extremity of the balance lever, and a stop upon the tilt, substantially as specified.

9. In stop mechanism for spinning machines, the combination with a balance lever and connected mechanism, of a tilt provided with a curved finger a superimposed spoon end, and a stop, substantially as specified.

In testimony of all which I have hereunto subscribed my name.

CLARENCE H. BLOSS.

Witnesses:

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