

No. 875,609.

PATENTED DEC. 31, 1907.

W. N. PARKES.
STOP MECHANISM FOR SEWING MACHINES.

APPLICATION FILED MAR. 26, 1903.

2 SHEETS—SHEET 1.

Fig. 2.

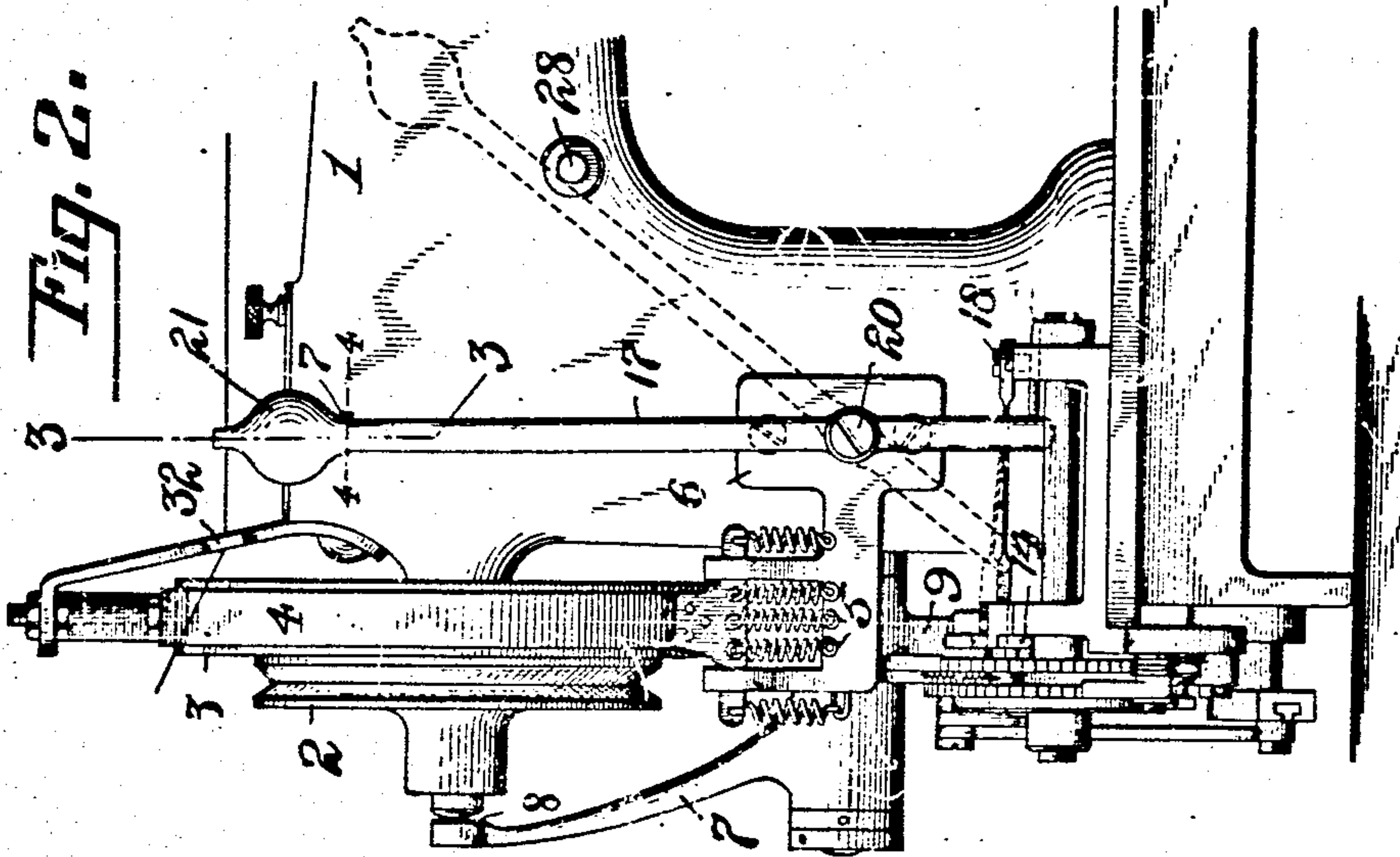


Fig. 1.

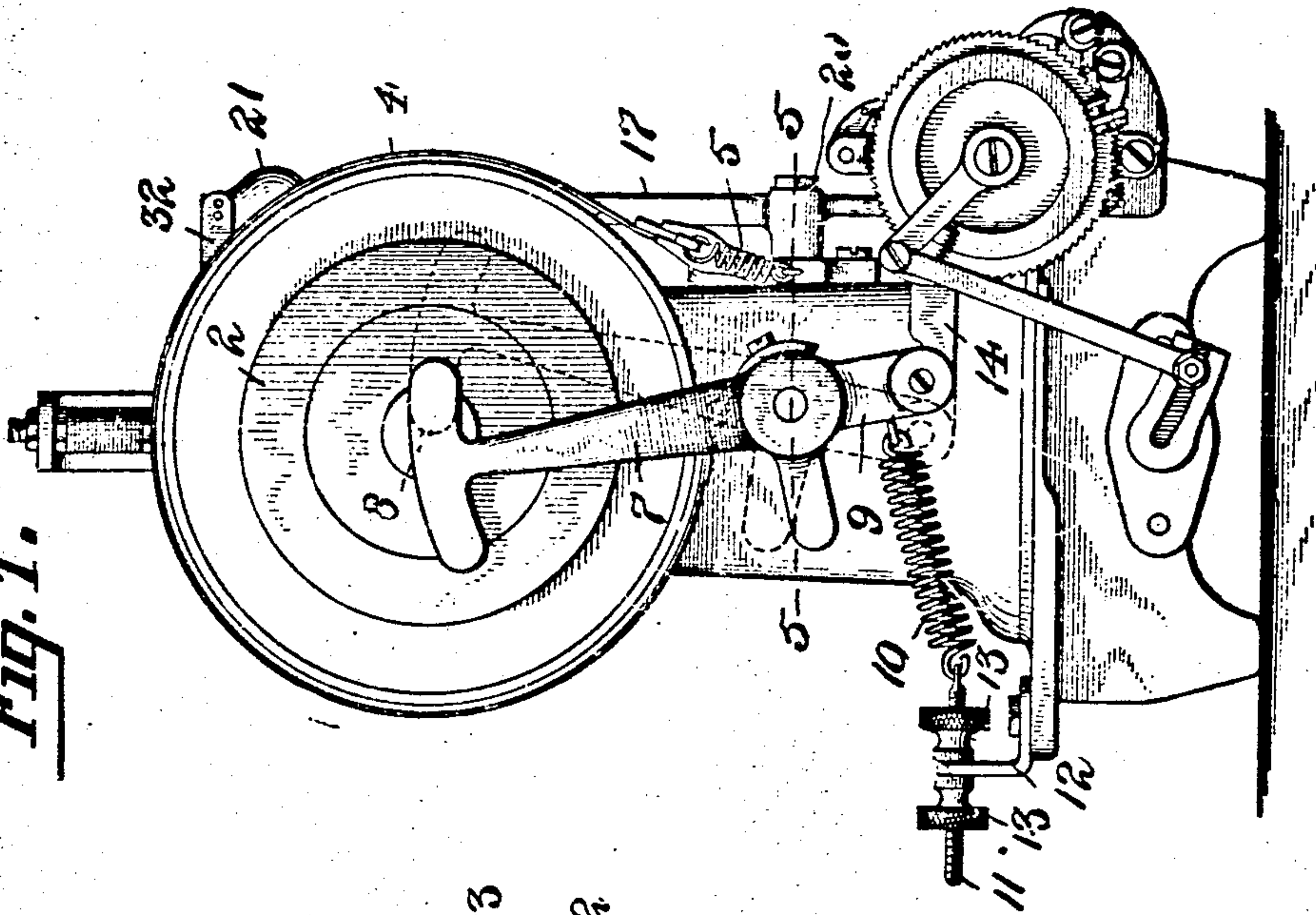


Fig. 3.

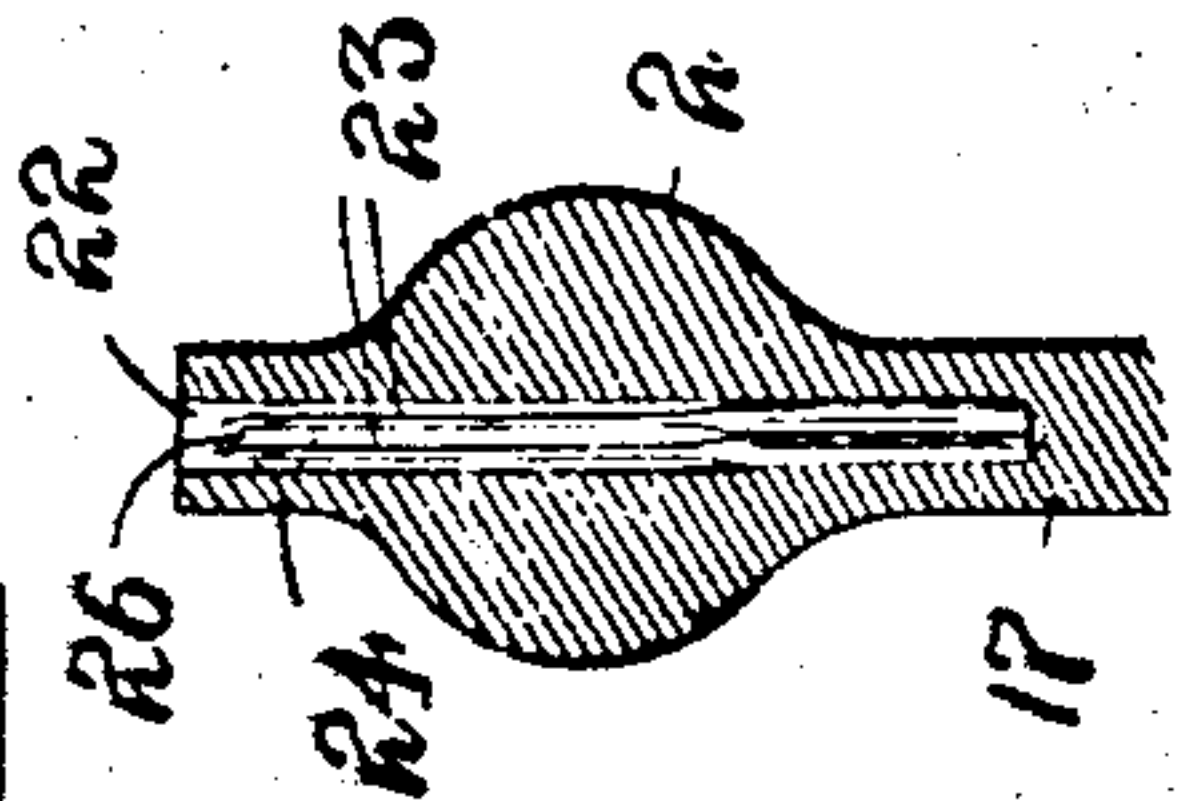


Fig. 4.

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WITNESSES:

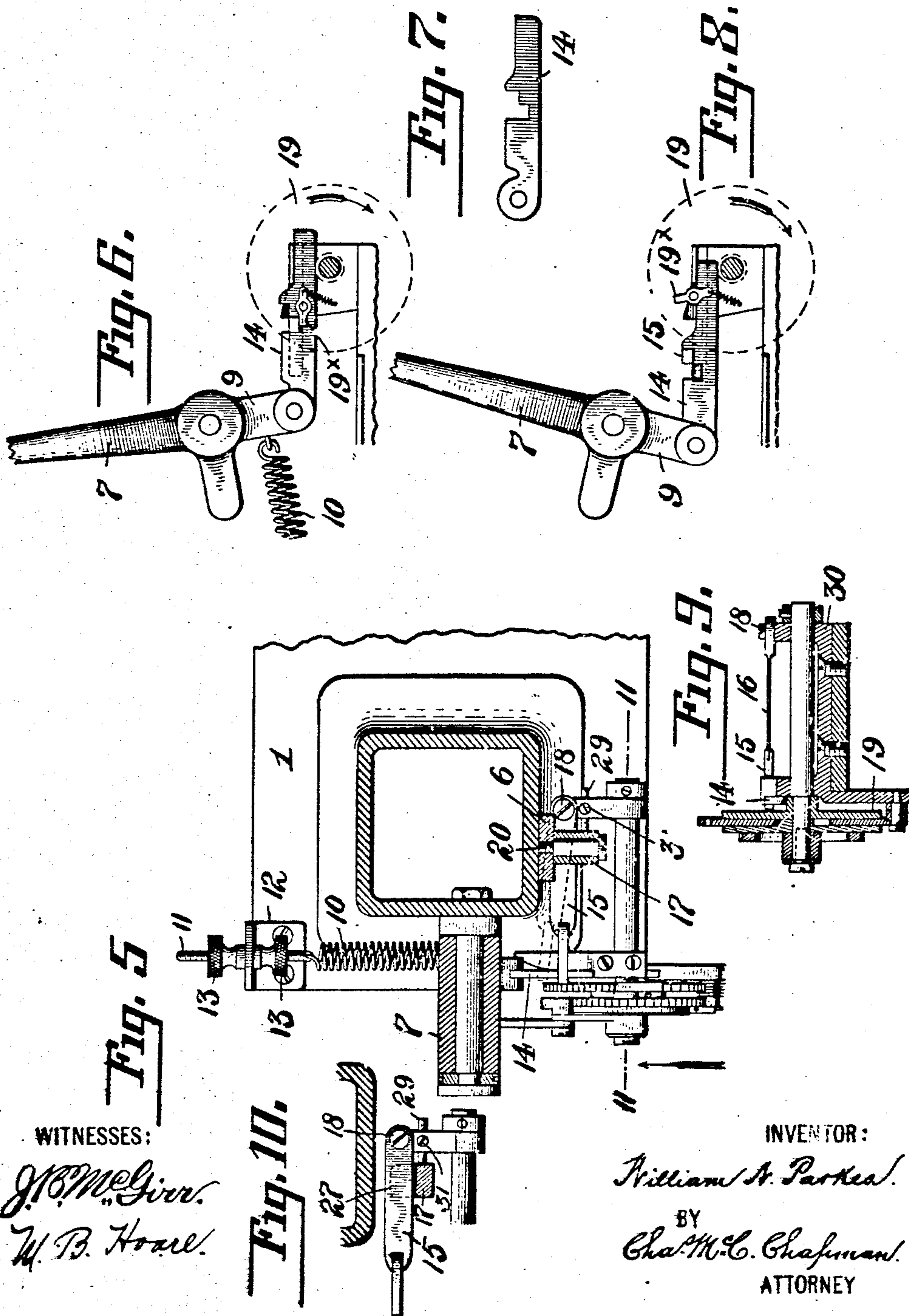
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UNITED STATES PATENT OFFICE.

WILLIAM N. PARKES, OF BROOKLYN, NEW YORK.

STOP MECHANISM FOR SEWING MACHINES.

No. 875,602.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed March 26, 1903. Serial No. 149,660.

To all whom it may concern:

Be it known that I, WILLIAM N. PARKES, a citizen of the United States, residing in Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Stop Mechanism for Sewing-Machines, of which the following is a description.

This invention relates to stop mechanism for sewing machines, and particularly to stop-mechanisms which are automatically tripped into action at a predetermined time, or after a predetermined number of operations are completed.

One of the main objects of my invention is to provide improved means for holding a stop motion in its normal or inoperative position, to combine therewith an improved device for actuating said means to trip the motion into action, and to adapt said device to be operated by the movement of a knot, or thick place, or other obstruction in the thread as it passes from the supply to the needle. It is obviously better to stop the machine before these bad places in the thread reaches the tension or needle, and thereby avoid the damage which is caused by the same, and it is one of the main objects of my device to prevent such damage. When the knot causes the device to act and stop the machine, as in my device, not a single stitch need be lost, the operator cuts the knot out pulls the thread through, rethreads the needle and starts the machine again without the loss of a single stitch. This is advantageous in any machine, but more especially in button-hole, and automatic embroidery machines such as is shown by me in U. S. Patent No. 658,578, button-hole machine, dated September 25, 1900, and No. 693,666 automatic embroidery machine, dated February 18, 1902.

My present invention may be used in connection with any suitable stop motion device; but in this application it is shown in combination with a stop motion device substantially the same as that which is shown in my U. S. Patent No. 670,163 dated March 19, 1901.

With the above object in view, and others which will be noted in the course of this description, the invention consists in the elements and combinations hereinafter described and claimed.

In the drawings: Figure 1 is a rear end ele-

vation of a sewing machine, showing a stop mechanism and my invention applied thereto; Fig. 2 is a rear elevation of the mechanism shown in Fig. 1; Fig. 3 is a vertical section on the line 3—3 of Fig. 2; Fig. 4 is a transverse section on the line 4—4 of Fig. 2; Fig. 5 is a horizontal section of Fig. 1 on the line 5—5; Figs. 6, 7, 8 and 9 are detail views of parts of the tripping mechanism, Fig. 9 being a section on line 11—11 Fig. 5; and Fig. 10 is a sectional detail showing the relation of the tripping lever 17 and the latch 15 and details of other parts adjacent thereto.

The frame of the machine is indicated by 1; and 2, is the loose driving pulley carried by the main shaft of the machine; 3, the fixed driving pulley; 4, the brake-strap or band encircling the periphery of the fixed pulley, and one end of which is yieldingly connected, by means of a series of springs 5, to a bracket 6 secured to the frame of the machine, as shown in Fig. 2. The other end of the brake-strap is suitably secured to the hub of the clutch-lever 7, the cam-face 8, of which bears upon the hub of the loose driving pulley 2. The depending arm 9, of the clutch-lever has connected thereto a spring 10, which normally tends to draw the lower end of the lever toward the front of the machine and keep the cam portion of said lever out of engagement with the hub of the loose pulley 2. The outer end of the spring 10, is connected to an adjustable screw 11, passing through a bracket piece 12, on the frame of the machine and also through two holding nuts 13, arranged on opposite sides of said bracket 12.

The lower end of the clutch-lever is pivotally connected to a sliding latch-bar 14, provided with suitable depressions in which a spring-latch 15, may rest and hold the latch-bar and its connected lever in either an operative or inoperative position. The latch is provided with a flexible portion 16, of any suitable shape, to be operated upon by a lifting or tripping lever 17. The latch 15, is fixed at 18 and can only be flexed vertically to release the latch-bar 14. Ordinarily, the latch is lifted from the notch by means of a tripping device carried by some rotary part 19, for example a ratchet-wheel, driven at a predetermined speed, and causing such tripping device 19, to operate upon the latch and lift the same from engagement with the latch-bar 14, at a predetermined time, thus

allowing the spring 10, to operate the lever 7, and unclutch the driving pulley from the fast pulley. No stress is laid upon the particular stop-mechanism here described, and its details are not further set forth because the same are not important to my invention. The only essential is that the stop-mechanism may have a latch, or equivalent device, susceptible of being automatically operated, to throw into action the stop-mechanism to stop the sewing, by the device now to be described.

The lever 17, is suitably pivoted to the frame of the machine at 20, so as to stand in a substantially vertical position. At its upper end the lever 17, is provided with a portion 21, which may be properly and sufficiently weighted, as by enlarging the same, as shown in Figs. 2 and 3. The portion 21, is bored vertically so as to provide the socket 22, for the reception of the thread-guides 23. Said guides may be ordinary, eye-pointed needles of the same size as the sewing needles used in the machine; and one or more of such guides may be used, according to the number of needle-threads used in the machine. The character of the guides is not essential, except that the opening through which the thread passes should be small enough to prevent any thick portion of the thread passing through it that would not pass freely through the needle. Each guide 23, is provided with a thread-eye or guide 24, and is held in place by means of a screw 25, passing through the lever and bearing against the shank or stem of the guide 23. The lever 17, is also provided with a transverse bore or eye 26, passing through the socket 22; and the guides 23, are secured in the socket with their eyes 24, coinciding with the eye 26, in the lever 17.

The lower end of the lever 17, is provided with an angular extension 27, Fig. 10, which extends under the portion 16, Fig. 9, of the latch 15, so that when the lever is thrown into the dotted line position of Fig. 2, said extension will lift the latch 15, from its seat in the latch-bar 14. The frame is provided with a stop 28, for limiting the movement of the lever 17, when thrown into the dotted-line position of Fig. 2, by the engagement of a knot in the thread with the guide 23. The frame is also provided with an adjustable stop 29, located adjacent the lower end of the lever 17, and against which the said lower end normally rests. The stop 29, is in the form of a pin and slides freely in a bore in the frame, or a bracket 30, thereon, and its position is regulated by means of a screw 31, passing through the bracket and engaging the pin. By this means, the upper end of the lever can be positioned with reference to the center of gravity, and so placed as to enable the lightest pull thereon to overbalance it, start it into action and cause it to lift the latch and trip the stop-mechanism into ac-

tion to stop the machine. A thread guide 32, of any suitable character may lead the thread in line to the tripping lever 17.

The operation of the stop-mechanism will be clear from the above description; and it will be noted that the said stop-mechanism is not only tripped into action at a predetermined time by the tripping device 19^x, but may also be tripped into action by the lever 17, which may be termed an "emergency device."

An important feature of this device is simplicity. It will be noted that the lever 17 is practically all there is to it except the parts of the stop motion that are adapted to be operated by said device. And it will be noticed that these stop motion parts are not additional stop motion parts, but the regular stop motion parts, so the only mechanism added by applicant's device is said lever and thread guides carried by it, and the stop pins for limiting the movement of the lever.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. A stop motion for sewing machines, a device adapted to trip said stop motion into action, means separate from the thread for holding said device out of action, means whereby a knot or thick place in the thread causes said device to commence to act after which it continues to act independent of said thread until it has tripped said stop motion into action.

2. A stop motion for sewing machines, a device adapted to trip said stop motion into action, means separate from the thread for holding said device out of action, means for guiding a thread through a part of said device whereby a knot in the thread causes said device to commence to act after which it continues to act independent of the thread until it has tripped said stop motion into action.

3. A stop motion for a sewing machine having a latch disposed in a horizontal plane, a catch disposed in a horizontal plane at right angles to said latch, a lever adapted to turn in a vertical plane and thereby engage said latch, and means whereby a knot or thick place in the thread causes said lever to commence to act after which it continues to act independent of the thread until it has tripped said stop motion into action.

4. A stop motion for sewing machines having a latch and catch, a lever the lower end of which is adapted to engage said latch, the upper end of said lever weighted, a stop for said lever against which it normally rests so that gravity prevents it from turning on its pivot, and means whereby a knot or thick place in the thread causes said lever to turn on its pivot and thereby engage said latch.

5. A stop motion for sewing machines having a latch and catch, a pivoted lever the

lower end of which is adapted to engage said latch, and the upper end of said lever provided with a needle through which the thread passes in its way to the aforesaid thread carrying needle.

6. A stop motion for sewing machines having a latch and catch, a pivoted lever the lower end of which is adapted to engage said latch, the upper end of said lever weighted, said weighted portion provided with a needle through which the thread passes on its way to the aforesaid thread carrying needle, a stop against which said lever normally rests, and a stop for limiting its action when operated.

7. A stop-mechanism comprising a latch-bar and flexible latch for holding the same; and a weighted lever coöperating with the latch and which may be caused automat-

ically to flex the latch by its weight to release the latch bar.

8. A stop-mechanism comprising a latch-bar and latch; means for lifting said latch including a lever; and means for adjusting the normal position of the lever to determine the power required to actuate the same.

9. A stop-mechanism comprising a latch, a tripping lever in engagement with the latch, said lever having an enlarged weighted portion, a socket in the latter, and a thread guide housed in the socket.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM N. PARKES.

Witnesses:

CHAS. MCC. CHAPMAN,
M. B. HOARE.