No. 859,008. PATENTED JULY 2, 1907.

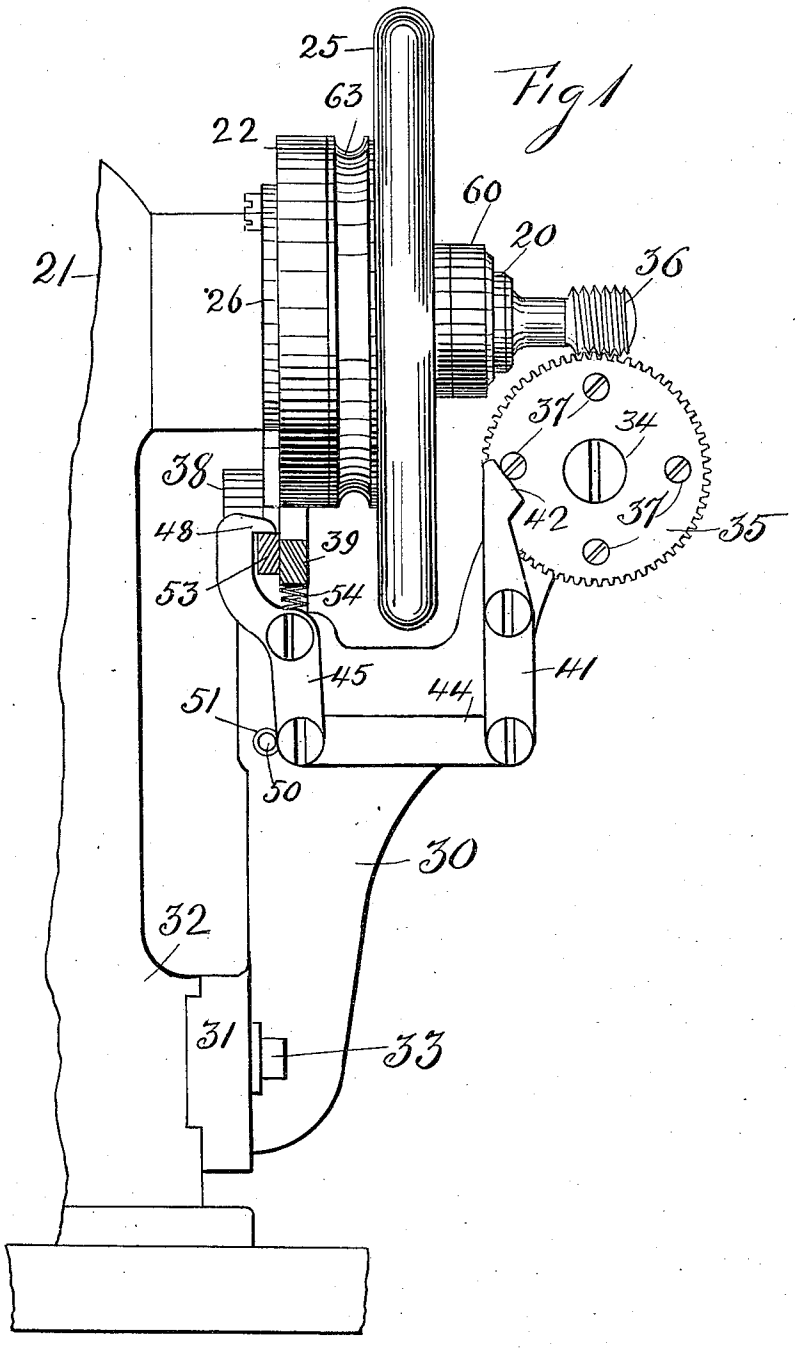
C. E. ONGLEY.

STOP MOTION MECHANISM FOR SEWING MACHINES.

APPLICATION FILED APR. 19, 1906.

4 SHEETS—SHEET 1.

Fig 1



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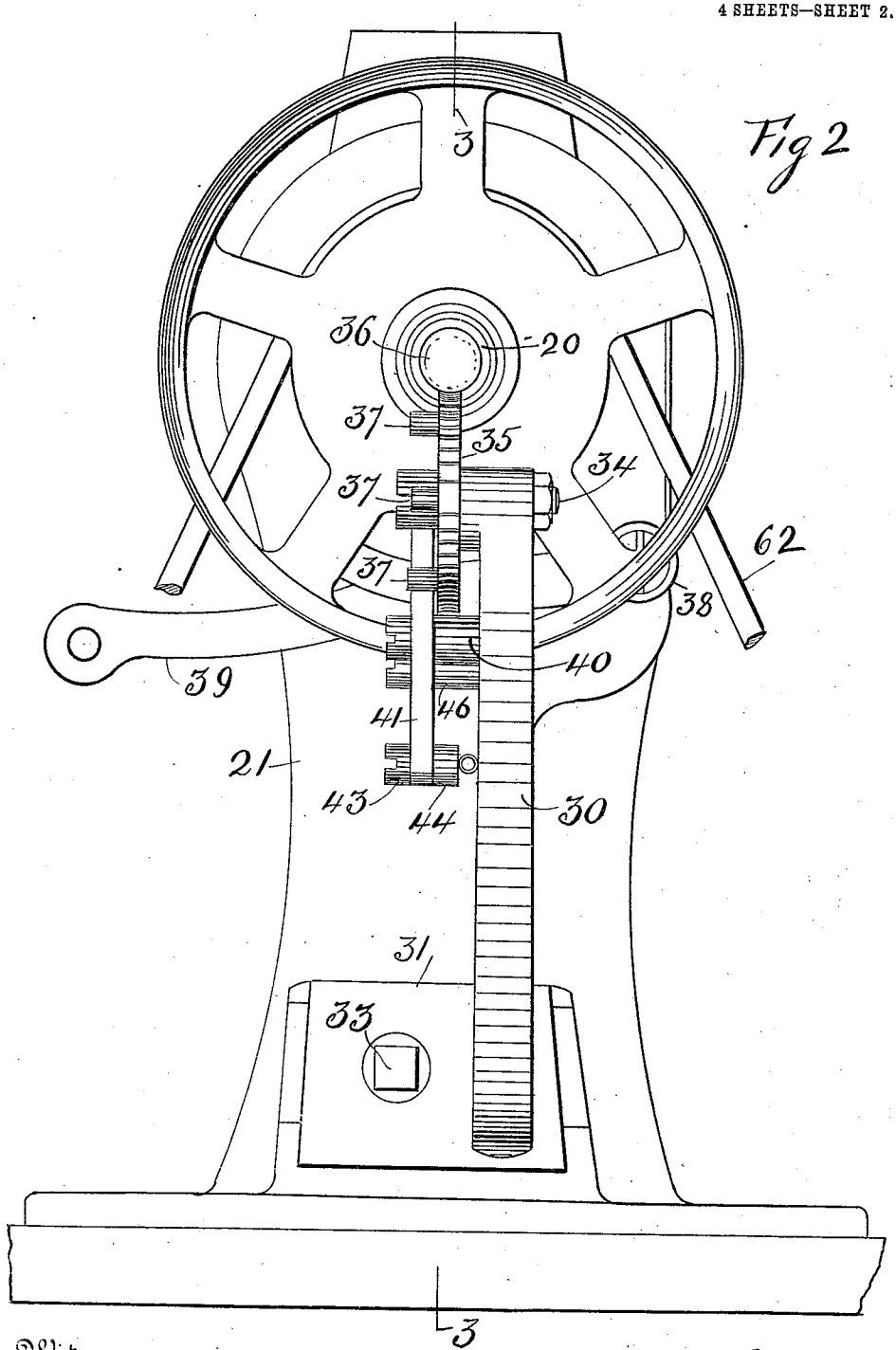
4 SHEETS—SHEET 2.

Fig 2



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4 SHEETS—SHEET 3.

Fig 3.

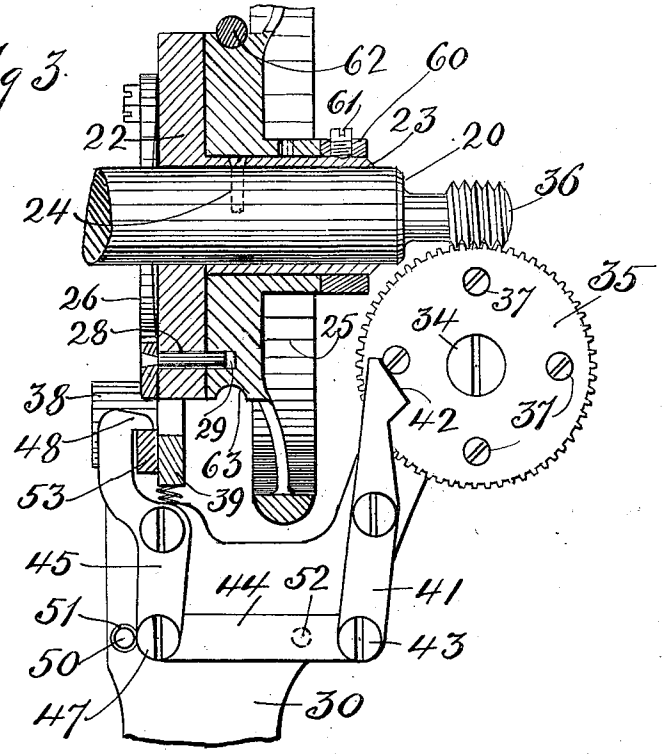
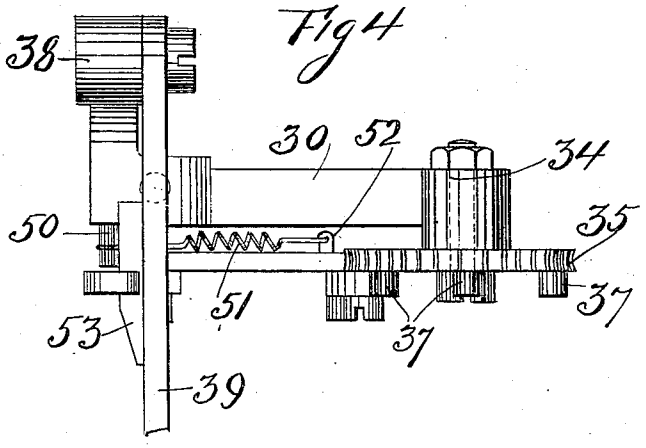


Fig 4



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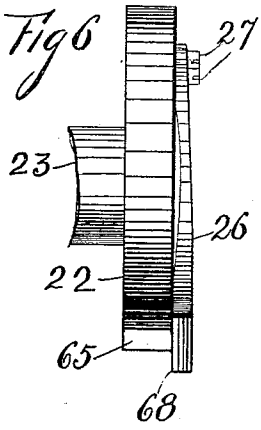
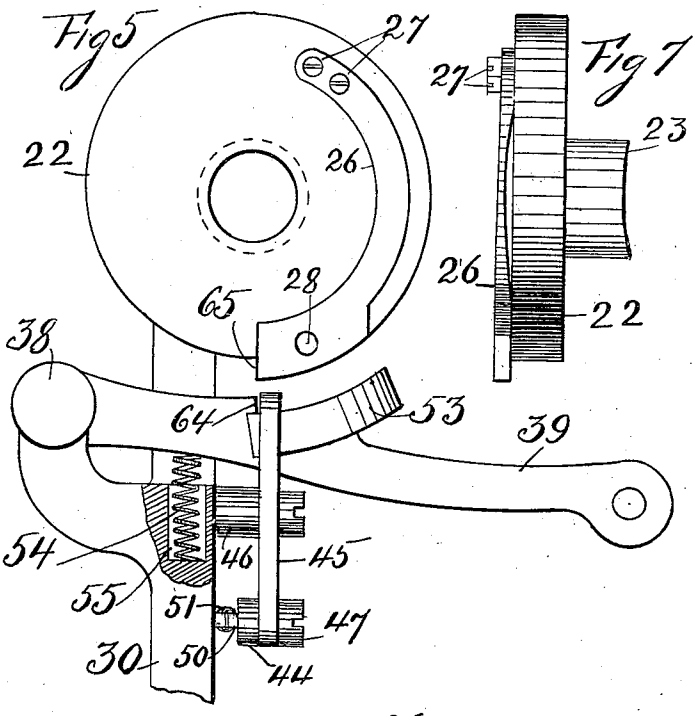
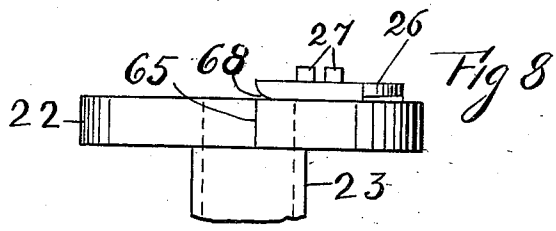
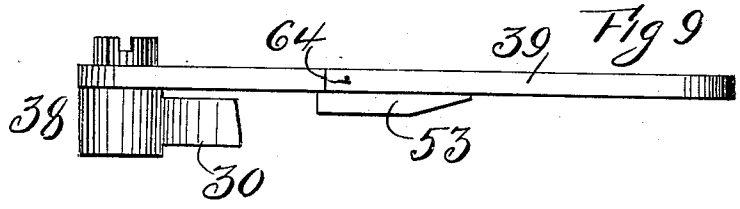
4 SHEETS—SHEET 4.









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UNITED STATES PATENT OFFICE.

CHARLES E. ONGLEY, OF NEW YORK, N. Y., ASSIGNOR TO BUTTON SEWING ATTACHMENT COMPANY, A CORPORATION OF MAINE.

STOP-MOTION MECHANISM FOR SEWING-MACHINES.

No. 859,008. Specification of Letters Patent. Patented July 2, 1907.

Application filed April 19, 1906. Serial No. 312,536.

To all whom it may concern:

Be it known that I, CHARLES E. ONGLEY, a citizen of the United States, and a resident of the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Stop-Motion Mechanism for Sewing-Machines, of which the following is a specification.

This invention relates to means for governing the number of stitches to be sewed by a sewing machine. It is applicable to the various functions of a sewing machine, and especially for sewing a button to a piece of material, sewing two pieces of material together, and the like. It contains means for reciprocating a needle with a predetermined number of reciprocations. It is especially applicable to attachments for sewing machines, for sewing buttons to various materials. Its object is the production of what I term a stitch governor, that may be easily attached to any sewing machine, for controlling the number of reciprocations of the needle bar of the machine. Its organization comprises essentially means for clamping and releasing, the driving pulley of a sewing machine, with the driving shaft thereof, between which latter and the needle bar of the machine is interposed mechanism for reciprocating the needle bar of the machine. By thus clamping and releasing the driving pulley, the number of reciprocations, and consequently the number of stitches are controlled.

In the drawings Figure 1 represents a side elevation of a device, embodying the invention, with a fragmentary portion of a sewing machine, Fig. 2 is an end view of Fig. 1, Fig. 3 is a partial vertical section of Fig. 2 about on the line 3, 3, Fig. 4 is a partial top view of the lower portion of Fig. 3, Fig. 5 is a partial left hand end view of Fig. 3, Figs. 6 and 7 show respectively, a left hand and right hand end view of a portion of Fig. 5, Figs. 8 and 9 represent top views of portions of Fig. 5.

On the driving shaft 20 of a sewing machine 21 is fastened a circular disk 22 with its sleeve 23, by means of the screw 24. A shoulder 65 is formed in the circumferential edge of the disk 22. Supported on the sleeve 23 and abutting against the outer face of the disk 22 is the grooved driving pulley 25 of the sewing machine. A collar 60 is secured to the sleeve 23 by a screw 61, which maintains the pulley 25 in operative position, and a belt 62 is carried in the groove 63 of the pulley 25. A spring 26 is attached to the disk 22 by means of the screws 27 at one end thereof. It has one of its edges beveled as shown at 68. A pin 28 extends from the free end of the spring 26, which is guided through an opening in the disk 22, and can engage with an opening 29 in the driving pulley 25. The spring 26 with its pin 28, and the disk 22 constitute a spring clutch. To the frame of the sewing machine 24 is fastened a bracket 30. The latter has extending therefrom the foot 31, which engages with a dovetailed projection 32 of the sewing machine, a screw 33 clamping the bracket in place. On the bracket 30 is supported a pin 34, on which intermittently rotates a worm wheel 35, that meshes with a worm 36 extending from the shaft 20. Pins 37 are screwed into one of the side faces of the worm wheel 35. A boss 38 extends from the bracket 30, on which is fulcrumed the clutch lever 39, which latter has formed in its upper edge the shoulder 64. A boss 40 extends from the said bracket 30 on which is fulcrumed the releasing lever 41. The releasing lever has formed at one end thereof, the beveled head 42 and at the other end it carries a pin 43, by means of which it is joined with the link 44. A hook lever 45 is fulcrumed in a boss 46 extending from the bracket 30, and it is connected at one end with the link 44, by means of the pin 47, while at the other end it has a hook 48, which can engage with the clutch lever 39, or with a knife 53 extending therefrom. A stop pin 50 extends from the bracket 30, and a spring 51 extends therefrom to a pin 52 carried on the link 44. The clutch lever 39 carries a knife 53, and is kept in a raised position by bearing on a spring 54 located in a pocket 55, formed in the bracket 30.

To operate the invention, it may be supposed that the pin 28 of the spring clutch is engaged with the opening 29 in the pulley 25. The sewing machine is operated and the said pulley rotates. The pulley 25 continues rotating until one of the screws 37 engages the beveled head 42 of the releasing lever 41, by which engagement the head 42 is moved to the left of the position shown in the drawings. This movement swings the lower end of the lever 41 to the right, and with it the link 44 which latter pulls against the spring 51 and thereby disengages the hook 48 from engagement with the clutch lever 39, or, as in the present case with the knife 53 connected to said lever 39. The lever 39 with its knife is then forced upwardly by the action of the spring 54, and the knife is forced between the spring 26 and the face of the circular disk 22. This last action forces the pin 28 out of engagement with the pulley 25 and allows the said pulley to rotate on the sleeve 23, without turning the driving shaft 20. While the pulley is thus rotating on the sleeve the beveled head 42 is still in engagement with one of the screws 37, and during this interval, and before the beveled head 42 and the screw 37 are disengaged, the lever 39 is pulled down. Upon the further rotation of the worm wheel 35, the lever 42 snaps from its screw 37 with which it is engaged, and the hook 48 engages with the lever 39, or its knife, and keeps the same out of engagement with the spring 26, the latter having forced the pin 28 in engagement again with the opening 29 in the wheel 25. The power transmitted

by the belt 62 will again be communicated to the shaft 20 to reciprocate the needle bar with the needle of the sewing machine.

It will be noted that the end of the spring 26 is beveled off as shown at 68, so that the knife can easily find its way between the said spring and the face of the disk 22. Should this knife 53 not find its way between the spring 26 and the face of the disk 22, the shoulder 64 on the lever 39 engages with the shoulder 65 formed on the disk 22, when the pulley will be tightly held and the belt 62 will slide in its groove 63. It will be noted that the number of stitches are governed by the number of screws 37 located in the worm wheel 35, because each time one of the said screws comes into engagement with the head of the lever 41, the pulley 25 is disengaged from the driving shaft 20 of the sewing machine.

Having described my invention, I claim:

1. In a stop motion mechanism for sewing machines the combination of a driven shaft, a driving pulley carried on the shaft, a clutch secured to the shaft arranged to engage with the driving pulley, a worm extending from the driven shaft, a worm wheel meshing with said worm, means between the worm wheel and clutch to disengage the latter from the driving pulley.

2. In a stop motion mechanism for sewing machines the combination of a driven shaft, a disk extending from the shaft, a driving pulley on the shaft, a spring carried on the disk, a pin extending from the spring and engaging with an opening in the pulley, a worm on the driven shaft, a worm wheel meshing with the worm, and connections between the worm wheel and the pin to disengage the latter from the pulley.

3. In a stop motion mechanism for sewing machines the combination of a driven shaft, a disk extending from the shaft, a driving pulley on the shaft, a spring carried on the disk, a pin extending from the spring and engaging with an opening in the pulley, a clutch lever fulcrumed under the spring, means to force the lever against the spring and disengage the pin extending therefrom from the opening in said pulley, a worm on the driven shaft, a worm wheel meshing with said worm, a hook lever fulcrumed below the clutch lever to engage therewith, a releasing lever fulcrumed adjacent to the clutch lever, a link connecting the two latter levers, pins on the worm wheel to engage the releasing lever at predetermined intervals.

4. In a stop motion mechanism for sewing machines the combination of a sleeve secured to the driving shaft thereof, a disk extending from the sleeve, a driving pulley on the sleeve, a spring carried on the disk, a pin extending from the spring and engaging with an opening in the pulley, a clutch lever fulcrumed under the spring, means to force the lever against the spring and disengage the pin extending therefrom from the opening in the said pulley, a bracket below the driving pulley, a worm wheel journaled on the bracket, a worm formed on the driven shaft meshing with said worm wheel, a hook lever fulcrumed on the bracket, located to engage with the clutch lever, a releasing lever fulcrumed on the bracket, a connection between the two latter levers, pins extending from the worm wheel in the path of the releasing lever.

5. In a stop motion mechanism for sewing machines the combination of a driven shaft, a clutch secured to the shaft, a driving pulley carried on the shaft, a worm extending from the driven shaft, a worm wheel meshing with the said worm, pins extending from the worm wheel, a clutch lever fulcrumed under the clutch to disengage the latter, connections between the clutch lever and the pins on the worm wheel to hold the clutch lever out of engagement with the clutch.

Signed at the borough of Manhattan, city of New York in the county of New York and State of New York this 16th day of April A. D. 1906.

CHARLES E. ONGLEY.

Witnesses:
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