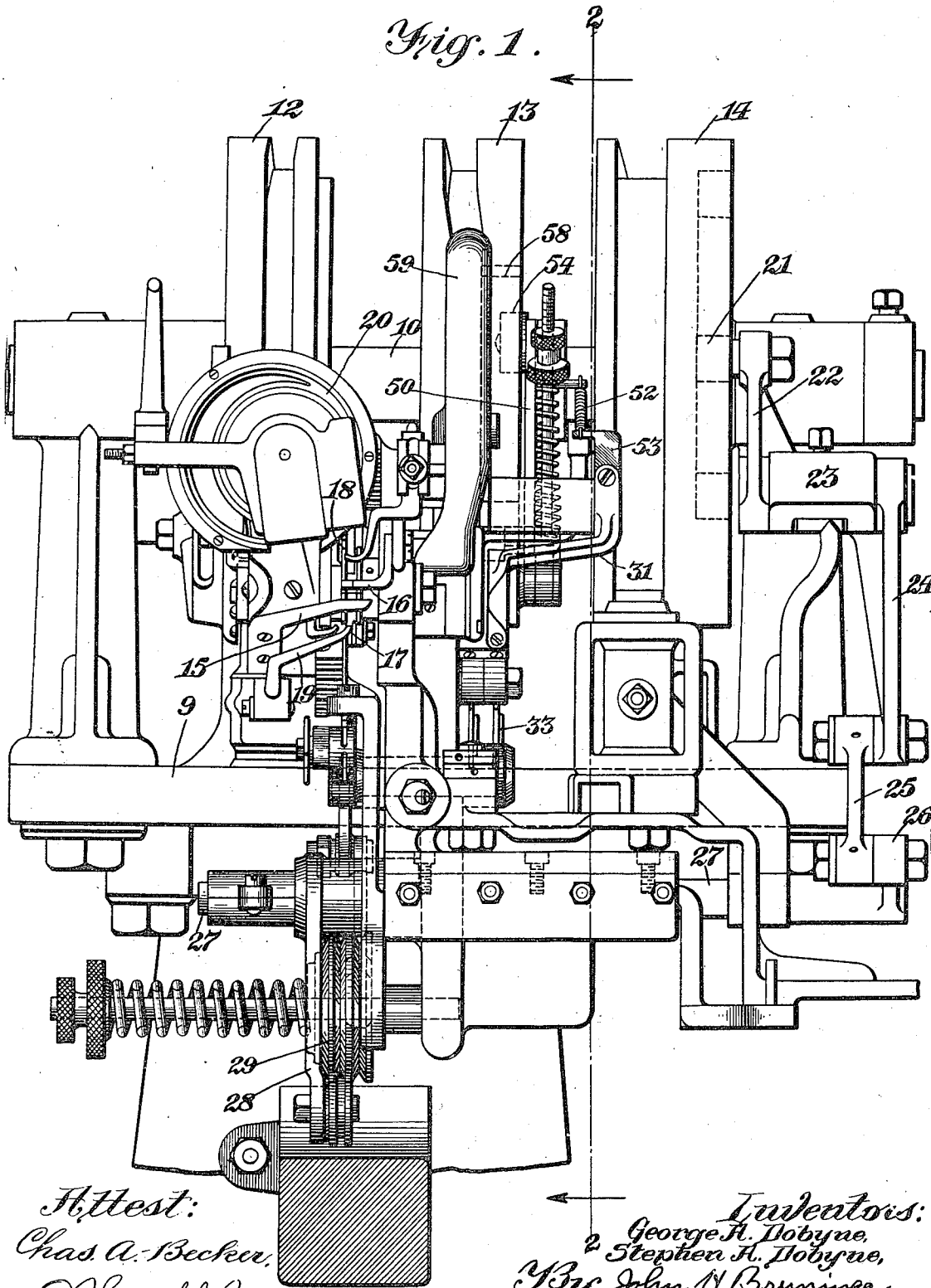


G. A. & S. A. DOBYNE.  
PRESSER FOOT MECHANISM FOR SEWING MACHINES.  
APPLICATION FILED DEC. 6, 1912.

1,237,245.

Patented Aug. 14, 1917.  
3 SHEETS—SHEET 1.



*Attest:*  
Chas. A. Becker,  
Clerk.

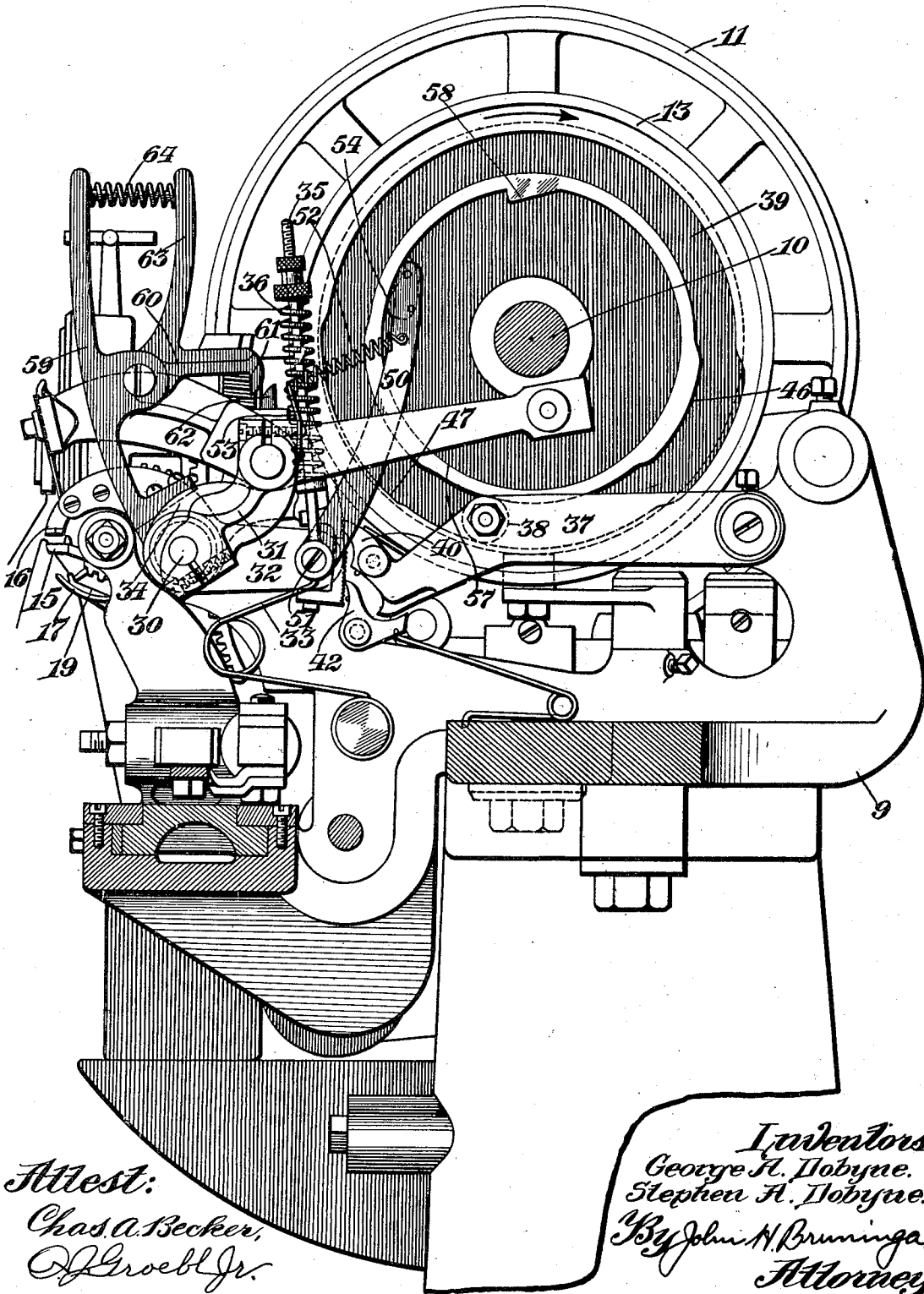
*Inventors:*  
George H. Dobyne,  
Stephen H. Dobyne,  
By John H. Brunning,  
Their Attorney

G. A. & S. A. DOBYNE.  
PRESSER FOOT MECHANISM FOR SEWING MACHINES.  
APPLICATION FILED DEC. 6, 1912.

1,237,245.

Patented Aug. 14, 1917.  
3 SHEETS—SHEET 2.

*Fig. 2.*



*Attest:*  
*Chas. A. Becker,*  
*Off Groebel Jr.*

*Inventors:*  
*George H. Dobyne,*  
*Stephen H. Dobyne.*  
*By John N. Brunning,*  
*Attorney.*

G. A. & S. A. DOBYNE.  
 PRESSER FOOT MECHANISM FOR SEWING MACHINES.  
 APPLICATION FILED DEC. 6, 1912.

1,237,245.

Patented Aug. 14, 1917.

3 SHEETS—SHEET 3.

Fig. 3.

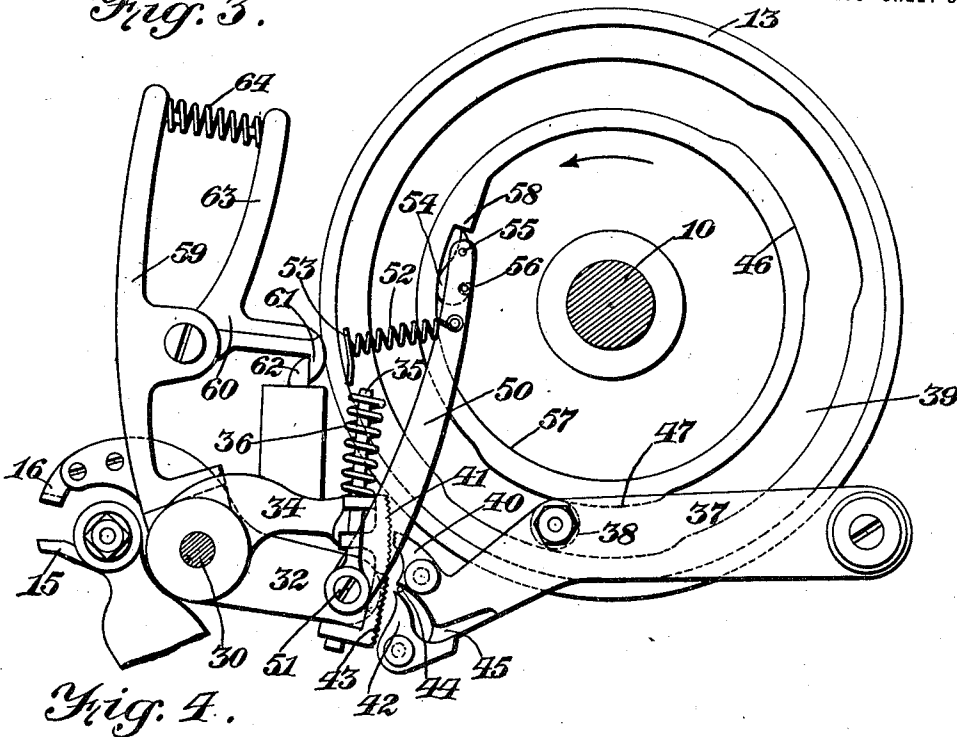
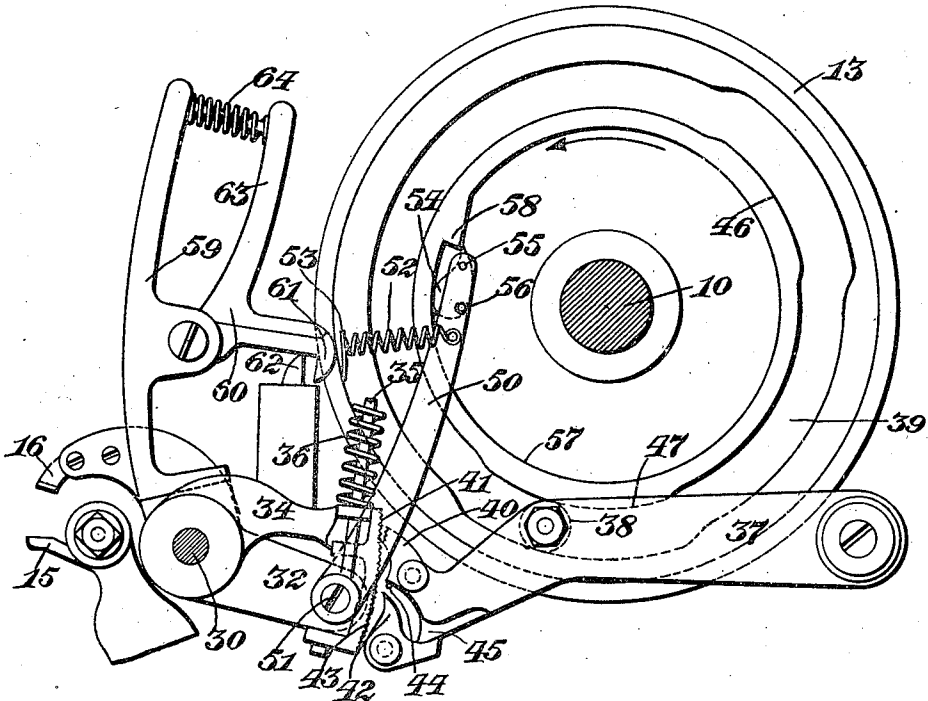


Fig. 4.



Attest:  
 Chas. A. Becker,  
 J. Groebler.

Inventors:  
 George H. Dobyne,  
 Stephen H. Dobyne,  
 By John H. Brunning,  
 Attorney.

# UNITED STATES PATENT OFFICE.

GEORGE A. DOBYNE AND STEPHEN A. DOBYNE, OF ST. LOUIS, MISSOURI, ASSIGNORS TO  
CHAMPION SHOE MACHINERY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION  
OF MISSOURI.

## PRESSER-FOOT MECHANISM FOR SEWING-MACHINES.

1,237,245.

Specification of Letters Patent. Patented Aug. 14, 1917.

Application filed December 6, 1912. Serial No. 735,213.

*To all whom it may concern:*

Be it known that we, GEORGE A. DOBYNE and STEPHEN A. DOBYNE, both citizens of the United States, and residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Presser-Foot Mechanism for Sewing-Machines, of which the following is a specification.

10 This invention relates to sole-sewing machines of the general type described in Patent No. 473,870, dated April 26, 1892, and more particularly to presser-foot mechanism therefor.

15 In sole-sewing machines the work is supported upon a work support or table and is held in place by a movable presser-foot. The presser-foot is held down on the work by the pressure of a light spring, and the pressure of this spring is increased at intervals and the presser-foot is locked in the position of increased pressure. During the feed of the work the increased pressure is relieved and the presser-foot is unlocked. It is desirable that the presser-foot be raised from the work to permit removal of the work and this must be done at a time when the awl and needle are out of the work and when the thread controlling mechanism is in position to release the thread so as to permit it to be drawn.

20 One of the objects of this invention therefore is to construct a machine in which the presser-foot can be raised from the work with a minimum amount of time and labor.

25 Another object is to so construct the machine that the presser-foot is raised automatically when the machine is placed in position to permit removal of the work, and to so interconnect this presser-foot mechanism with the stitch-forming and thread controlling mechanisms that these mechanisms may be simultaneously placed in position to permit removal of the work.

30 Another object is to retain the presser-foot in raised position and to provide means whereby this presser-foot can be readily moved down on the work.

35 Further objects will appear from the detail description taken in connection with the accompanying drawings in which:

40 Figure 1 is a front elevation of a machine embodying this invention,

Fig. 2 is a section on the line 2—2 Fig. 1, and

55 Figs. 3 and 4 are detail views illustrating the operation of the machine, the views being similar to Fig. 2 but showing the parts in different positions.

Referring to the accompanying drawings 60 9 designates a machine head and 10 a drive shaft having mounted thereon a hand wheel 11 and cam wheels 12, 13 and 14. A work support or table 15 is mounted upon the machine head and has cooperating therewith 65 a presser-foot 16. The stitch-forming mechanism comprising an awl 17, a needle 18, a looper 19 and a shuttle 20 may be of a construction substantially as described in the above patent. 70

The thread controlling mechanism may be of any suitable construction, but as shown is of the construction shown and described in our application Serial No. 735,212, filed of even date herewith. The cam wheel 14 75 is provided with a cam groove cooperating with a cam roll 21 on an arm 22 mounted on a rock shaft 23, which rock shaft has an arm 24 thereon connected by a link 25 to an arm 26 on a take-up shaft 27 extending across 80 the machine. This take-up shaft has mounted thereon a take-up lever 28 cooperating with a tension 29. As described in the above application, the thread tension is unlocked when the take-up is at its lower limit, so 85 that the thread may be drawn at this time.

The presser-foot 16 is mounted on a rock shaft 30 supported in the machine head and in a bracket 31 mounted on the machine head. The presser-foot has a rearwardly 90 extending arm 32 rigidly connected therewith and this arm is engaged by a light spring 33 mounted on the machine head, which spring operates to force the presser-foot down and against the work on the work support with a normally light pressure. An arm 34 loosely mounted on the rock shaft 30 is yieldingly connected with the arm 32 by a link 35 and a spring 36. A lever 37 is provided with a cam roll 38 100 engaging a cam groove 39 in the cam wheel 13, and this lever 37 has a pawl 40 engaging a toothed rack 41 on the arm 34. A pawl 42 mounted on the machine head engages a toothed rack 43 on the arm 32. A pin 44 105 on the machine head engages and trips the

pawl 40, and a lug 45 on the lever 37 engages and trips the pawl 42. The cam groove 39 is provided with cam portions 46 and 47 which operate to depress the lever 37.

5 The above construction is substantially as shown and described in the above patent and its operation is well known. During the operation of the machine the presser-foot is normally held against the work on

10 the work support under the tension of the light spring 33, the cam 39 operates to increase the pressure due to the spring 33 at intervals, and the pawl 42 operates to lock the presser-foot in its position of in-

15 creased pressure. When the cam portions 46 and 47 are in engagement with the cam roll the presser-foot is relieved of the increased pressure and unlocked as shown in Fig. 3, the cam portion 46 operating during the

20 feed of the work and the cam portion 47 operating at the time when the work is to be removed. In this construction, however, the length of the cam portion 47 is long as compared to the corresponding cam portion

25 in the patent so as to permit revolution of the drive shaft through a considerable angle while this cam portion is operating.

A link or arm 50 is pivotally connected to the arm 32 at 51 so as to permit this link

30 to swing on the arm. A spring 52 connected at one end of the link 50 and at the other end to a projection 53 on the bracket 31 tends to move this lever to the left Figs. 2, 3 and 4. A block 54 is pivoted at 55 on

35 the link, and this link is provided with a pin 56 engaging a slot in the block so as to limit the pivotal movement of this block in a counterclockwise direction. The spring 52 normally tends to hold the block 54 in

40 engagement with a circumferential shoulder 57 on the cam wheel 13. This shoulder 57 has formed thereon a beveled tooth 58. The presser-foot has mounted thereon an

45 arm 59 forming a handle whereby this presser-foot may be raised. A lever 60 pivoted on the handle is provided with a hook 61 adapted to snap behind a lug or keeper 62 on the machine head, and with a handle

50 63. A spring 64 positioned between the handles 59 and 63 normally operates to move the hook 61 down.

The machine normally rotates in the direction of the arrow Fig. 2. During the operation of the machine when rotating in

55 this direction the tooth 58 will merely snap over the block 54 and move the link 50 on its pivot 51 without operating the presser-foot. When however, the machine is stopped and the presser-foot is to be raised,

60 the operator will first move the drive shaft forward in the direction of the arrow Fig. 2 until he hears the block 54 snap over the tooth 58. He will then rotate the shaft backward in the direction of the arrow

65 Fig. 3. This will cause the shoulder of

the tooth 58 to engage the block 54 and move the link 50 down and in the direction of its length so as to move the arm 32 down and raise the presser-foot. It will be noted that when the tooth 58 is in a position to

70 engage the block 54 the cam portion 47 is in position to engage the cam roll 38 so as to relieve the presser-foot of the increased pressure and to unlock the same, and the

75 parts are so constructed and arranged that the presser-foot will be relieved and unlocked just before the tooth 58 starts to engage the block 54 to raise the presser-foot. When the presser-foot is raised the arm 59

80 will move with it and the hook 61 will snap over the lug 62 so as to lock the presser-foot in raised position as shown in Fig. 3. If the shaft 10 is now rotated farther in the direction of the arrow Figs. 3 and 4, the

85 link 50 will move down still farther and as this link is moved down the engagement of the lower end or heel of the block 54 with the shoulder 57, which acts as a cam, will cause the link 50 to be swung backward

90 still more until the toe of the block moves out of engagement with the tooth as shown in Fig. 4. The spring 33, which has been placed under tension, will now operate to raise the arm 32 and lever 50 and cause the

95 block 54 to slide over the tooth 58 so that the block will pass completely out of engagement with the tooth. The shaft may therefore be rotated freely while the presser-foot will be locked in raised position by the locking means on the handle 59. When the

100 machine is again to be started the presser-foot can be dropped on the work by merely grasping the handles 59 and 63 and releasing the hook 61 from the lug 62.

The parts are so arranged that when the

105 presser-foot is moved to raised position theawl and needle will be out of the work, the take-up will be down to its lower limit, and the thread tension will be unlocked to unlock the thread. The presser-foot, stitch-form-

110 ing, and thread controlling mechanisms are therefore in position to permit removal of the work with the last stitch completed.

It will thus be seen that the invention accomplishes its objects. The operator can

115 raise the presser-foot and place the machine in position to permit removal of the work by merely reversing the drive shaft, and when the presser-foot is raised it is locked in raised position against the tension of its

120 spring. The presser-foot is raised automatically when the thread controlling mechanism and the stitch forming mechanism are placed in a position to permit removal of the work, and the presser-foot mechanism

125 becomes disconnected from the shaft after it is raised and locked in position, so that the drive shaft may be moved at pleasure. The presser-foot raising mechanism has a connection to the presser-foot independent

130

of the pressure increasing and locking means. The presser-foot when raised is therefore independent of its pressure increasing and locking means and the drive shaft can therefore be operated to independently position the other instrumentalities of the machine. The presser-foot may be lowered at any time by operating the handle thereon irrespective of the positions of the other elements of the machine.

It is obvious that various changes may be made in the details of construction without departing from the spirit of this invention, and it is therefore to be understood that this invention is not to be limited to the specific construction shown and described.

Having thus described the invention what is claimed is:

1. In a sole-sewing machine, the combination with a work support, of a movable presser-foot, means to force said presser-foot against the work on the work support with a normally light pressure, means to increase said pressure at intervals and to lock said presser-foot when the pressure has been increased, and means under the control of the operator for raising the presser-foot and means independent of said raising means for locking said presser-foot in raised position.

2. In a sole-sewing machine, the combination with a drive shaft, of a work support, a movable presser-foot, means to force said presser-foot against the work on the work support with a normally light pressure, means to increase said pressure at intervals and to lock said presser-foot when the pressure has been increased, and means operated upon reversal of said shaft for raising the presser-foot and means independent of said raising means for locking said presser-foot in raised position.

3. In a sole-sewing machine, the combination with a drive shaft, a work support and a presser-foot, of means operated upon reversal of said shaft for separating said

presser-foot and work support, and means independent of said driving shaft for locking said parts in separated position.

4. In a sole-sewing machine, the combination with a drive-shaft, a work support and a movable presser-foot, of operating means operated upon reversal of said shaft for raising said presser-foot, said operating means being constructed and arranged to become disconnected from said shaft after said presser-foot is raised, and constructed to leave said presser-foot in raised position, and means for locking said presser-foot in raised position.

5. In a sole-sewing machine, the combination with a drive-shaft, a work support and a movable presser-foot, of operating means, inoperative when said drive shaft moves in its normal direction, but operated upon reversal of said shaft for raising said presser-foot, said operating means being constructed and arranged to become disconnected from said shaft after said presser-foot is raised, and constructed to leave said presser-foot in raised position, and means for locking said presser-foot in raised position.

6. In a sole-sewing machine, the combination with a drive-shaft, a work support and a movable presser-foot, of a spring for moving said presser-foot toward said work support, a member connected with said presser-foot, operating means on said shaft engaging said member upon reversal of said shaft, constructed and arranged to raise said presser-foot and thereafter become disconnected from said member, and means for locking said presser-foot in a raised position.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE A. DOBYNE.  
STEPHEN A. DOBYNE.

Witnesses:

L. F. MAHLER,  
J. H. BRUNINGA.