

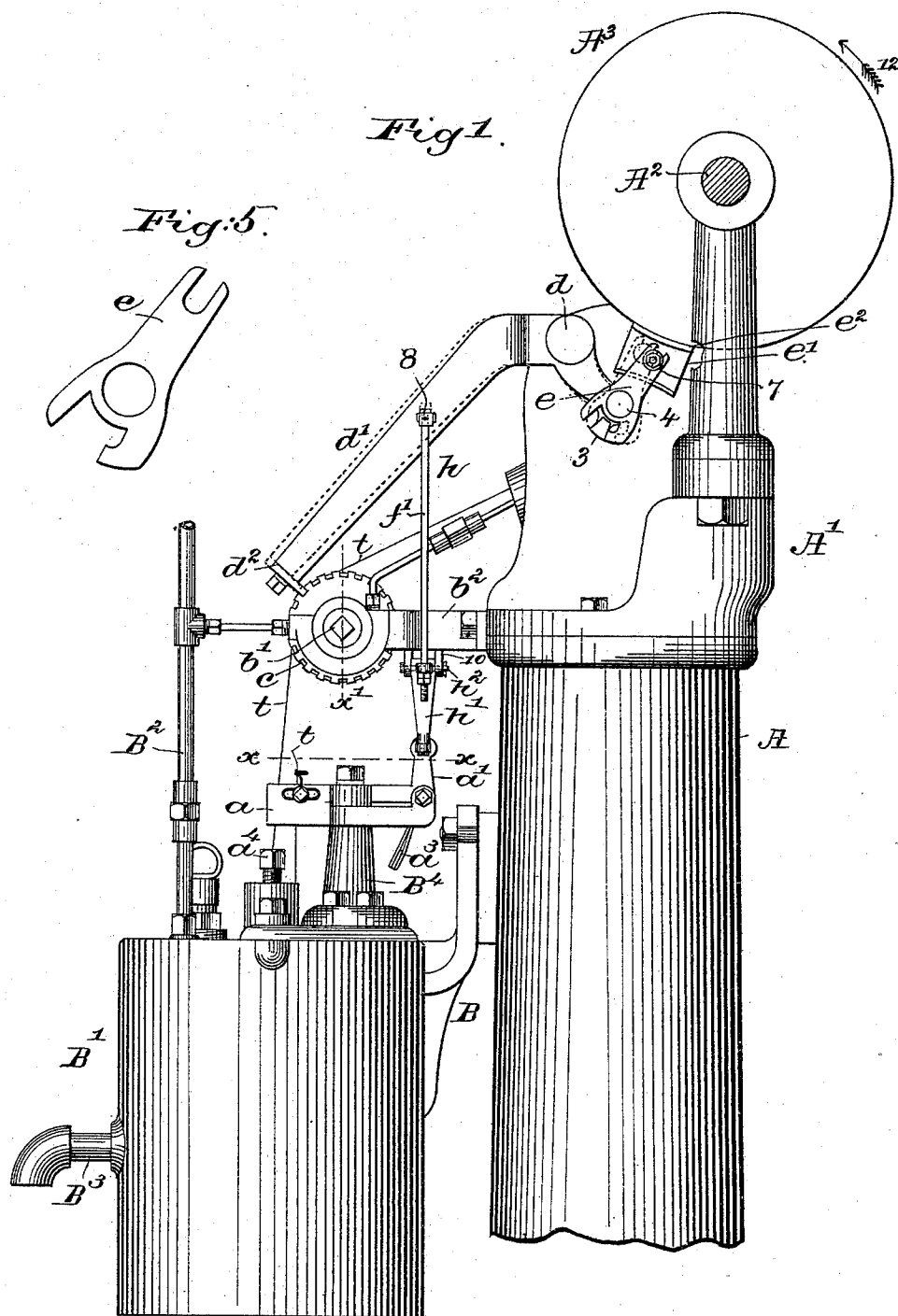
(No Model.)

2 Sheets—Sheet 1.

A. C. SPENCER.
TENSION DEVICE FOR SEWING MACHINES.

No. 488,508.

Patented Dec. 20, 1892.



Witnesses.
Edward F. Allen.
Louis N. Goull

Inventor:
Alvah C. Spencer
by Crosby & Gregory
Attys.

(No Model.)

2 Sheets—Sheet 2.

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Fig: 2.

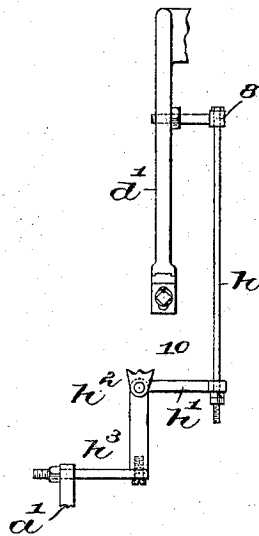


Fig: 3.

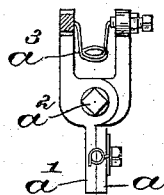
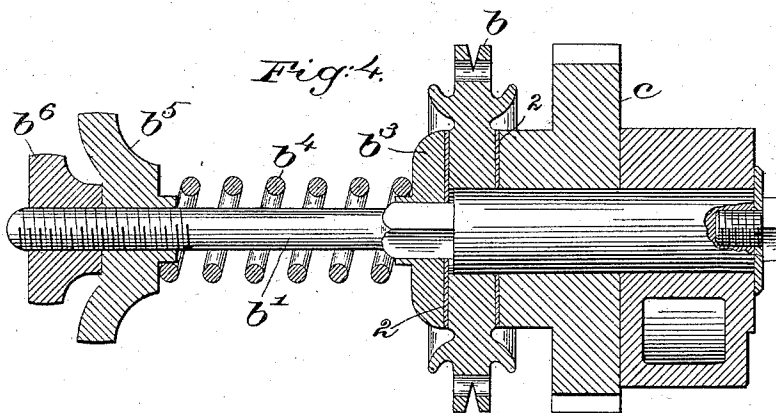


Fig: 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

ALVAH C. SPENCER, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE GOOD-YEAR SHOE MACHINERY COMPANY, OF HARTFORD, CONNECTICUT.

TENSION DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 488,508, dated December 20, 1892.

Application filed July 23, 1892. Serial No. 441,006. (No model.)

To all whom it may concern:

Be it known that I, ALVAH C. SPENCER, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This improvement in sewing machines relates more especially to that class of machine using waxed thread and employed for stitching leather, the particular part of the machine improved by me being that for controlling the delivery of the thread to the needle.

Figure 1, in side elevation represents a sufficient portion of a sewing machine with my improvements added to enable my invention to be understood. Fig. 2, is a detail looking at the machine shown in Fig. 1 from the left chiefly to show the devices employed to open the clamping jaws. Fig. 3, is a view of the clamping jaws looking down below the line x , Fig. 1. Fig. 4, is a much enlarged section in the line x' , Fig. 1, and Fig. 5, an enlarged view of the lever e .

The column A, the head frame A' thereon; the main cam shaft A² and the cam A³, are and may be all as common in United States Patent No. 412,704, dated October 8, 1889. The column has an attached bracket B which supports a wax pot B' of usual construction heated in usual manner by or through the pipes B², B³. The wax pot has erected upon it a post B⁴, on which are mounted the clamping jaws composed of two members a , a' , one being pivoted on the other at a^2 , a spring a^3 acting normally to keep the jaws closed on the thread t , in its dry state and on its way into the wax pot from some suitable spool, cop, or bobbin. The dry thread is led into the wax pot, under a roll therein, not shown, and thence out through a scraper and the hollow screw a^4 all as usual. The waxed thread goes from the screw a^4 directly to and about a rolling tension wheel b , mounted on a stud b' supported in the stand b^2 . The stud b' has mounted on it loosely a locking-wheel c shown as toothed at its periphery. Surrounding a squared part of the stud b' is a friction plate b^3 acted upon by a spiral spring b^4 made ad-

justable as to its effective strength by a nut b^5 held in place by a check nut b^6 . I shall preferably place felt or equivalent friction washers, as 2, at each side the tension wheel.

On the head A' on a stud d I have mounted a locking device shown as a lever d' having a finger or plate d^2 to engage the locking wheel c , the finger or plate as shown being shaped to enter the notches in the said wheel c as shown by full lines Fig. 1 and restrain it from rotation so long as the main shaft is being turned in its forward direction indicated by the arrow near the wheel A³ in Fig. 1, the rotation of the tension wheel being then restrained frictionally by a force due to the spring and its adjustment. The short arm of the lever d' has a lug 3, and a pivot 4; and on the pivot is mounted a lever e shown in Figs. 1 and 5, the latter figure showing the said lever much enlarged. The lever e is forked at its lower end to leave two lugs 5, 6, which cooperate with the lug 3 and prevent too great movement of said lever. The upper end of the lever e is also shown as forked to receive a pin 7 constituting a center of motion or fulcrum of a brake block e' preferably having a concave face covered with leather as e^2 or with some other usual friction surface. The lever d has a lug 8 through which is extended or to which is jointed a rod h connected loosely but in an adjustable manner with an elbow lever h' pivoted at h^2 in ears 10, of the stand b^2 . The lower end of the elbow lever h' is joined by link h^3 with an ear of the jaw a' , the construction being such that the raising of lever d' will open the clamping jaws and leave the dry thread free to rend through them. When the lever e occupies its full line position Fig. 1 which is its position when the cam wheel A³ is being rotated in its forward direction the pin 7 is out of center with relation to the center of the shaft A² and the pivot 4 of the lever e , and in this condition the finger or plate d^2 enters a notch in and holds wheel c , and the rotation of the tension wheel is restrained to thus give tension to the waxed thread, and the clamping jaws are kept closed on the dry thread.

When the stitching of a shoe has been completed, the machine is stopped with the usual

needle out of the shoe and at this time it is desired to release the thread from tension so that as the shoe is removed the thread connected to it at the last stitch may be pulled
 .5 freely from the machine. To effect this the operator just after the machine has been stopped will reverse the shaft A^2 and wheel
 10 wheel A^3 for a slight distance, he having his hand on the usual hand-wheel, thus turning the wheel A^3 in a direction opposite the arrow 12, such movement of the wheel A^3 acting on the
 15 brake block e' and moving it to the left viewing Fig. 1 into its dotted line position, and putting the pivot 7 in line with the center of shaft A^2 , and pivot 4, thus turning the lever
 20 d' into its dotted line position which results in removing the finger or plate d^2 from the wheel c and in opening, as stated, the clamping jaws.

20 I do not broadly claim releasing the tension by reversing the shaft A^2 , nor do I broadly claim releasing both the tension wheel and jaws simultaneously, but I have produced a novel and simple mechanism for effecting the
 25 release of the thread at the proper time.

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

1. In a wax thread sewing machine, a tension wheel, a locking wheel against which it
 30 is held frictionally, and the levers d' and e , combined with a brake block, and the wheel A^3 adapted only in its reverse rotation to act

on said brake block and, move the said levers in a direction to release the locking wheel, substantially as described. 35

2. In a wax thread sewing machine, a tension wheel, a locking wheel against which it is held frictionally, and the levers d' and e , combined with the wheel A^3 adapted only in
 40 its reverse rotation to move the said levers in a direction to release the locking wheel, clamping jaws for the thread on its way to the wax pot, and connections between said jaws and the said lever d' whereby the tension wheel
 45 and clamping jaws are made to release the thread simultaneously, substantially as described.

3. The tension wheel, the locking wheel notched at its periphery, the lever d' having the plate d^2 and the lever e pivoted on the lever d' , and the wheel A^3 , combined with a
 50 brake mounted upon the said lever e and adapted to be acted upon to move the lever d' and effect the release of the locking wheel only upon the reverse rotation of the said
 55 wheel A^3 , substantially as described.

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

ALVAH C. SPENCER.

Witnesses:

GEO. W. GREGORY,
 FRANCES M. NOBLE.