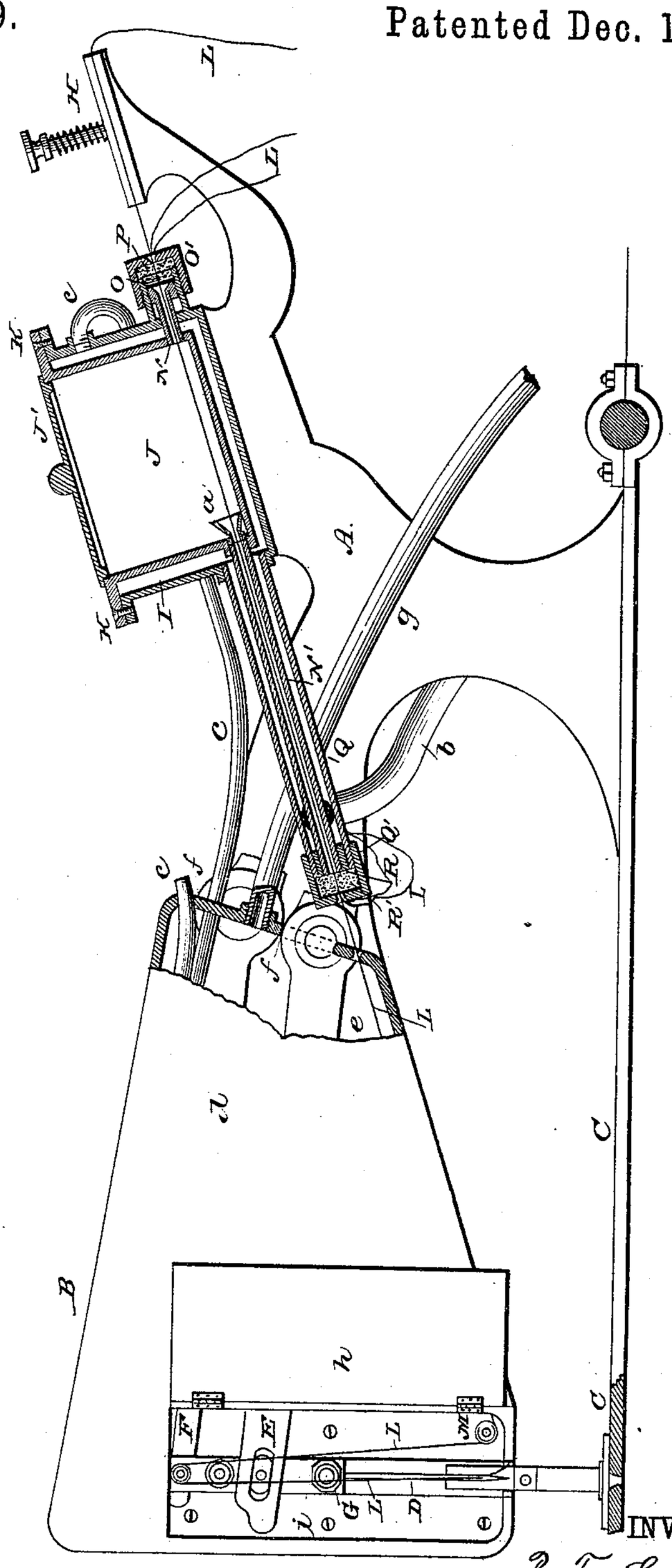
(No Model.)

B. F. LANDIS.

THREAD WAXING AND HEATING DEVICE FOR SEWING MACHINES.

No. 332,259. Patented Dec. 15, 1885.



WITNESSES:

Fred. G. Dieterich

W. L. Stevens.

INVENTOR:

B. F. Landis

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

BENJAMIN FRANKLIN LANDIS, OF ST. JOSEPH, MISSOURI.

THREAD WAXING AND HEATING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 332,259, dated December 15, 1885.

Application filed March 18, 1885. Serial No. 159,298. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN FRANKLIN LANDIS, of St. Joseph, Buchanan county, Missouri, have invented a new and useful Improvement in Thread Waxing and Heating Devices for Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same.

The object of this invention is to provide means whereby the upper thread used on a sewing-machine may be waxed during its passage from the tension to the needle, means whereby the thread may be shielded from cold air and be kept warm from the waxing device to the eye of the needle, and means whereby the thread may take a direct course from the tension device through the waxing device to the delivery-stud near the needle.

To this end my invention consists in the construction and combination of parts hereinafter described and claimed, reference being had to the accompanying drawing, which is a front elevation, part in section, of a portion of a sewing-machine showing my invention.

A represents the frame of the machine; B, the overhanging arm or head thereof; C, the work-table; D, the needle in the holder G, which is fitted to slide in the head B; E, the needle arm or carrier; F, the thread take-up, and H the tension. All these parts—in fact, all of the machine proper—may be of any construction suitable for a wax-thread sewing-machine, except that the location of the tension should be at the extreme right hand of the machine, to give room for my waxing device.

J is the wax-pot, inclosed within a steam-chamber, I, and secured thereto by means of flanges K. The steam-chamber is enough larger than the wax-pot to permit steam to pass between the two at all sides and at the bottom.

L is the thread, which is drawn from a ball or spool through the tension H and through the wax-pot J, in a direct line to and beneath the delivery-stud M, thence over the take-up F, and down to the eye of the needle D.

N is a tube secured in the wax-pot and extending out through the steam-chamber to a stuffing-box, O. This stuffing-box is to be filled with any elastic stuffing, P, which will prevent the escape of melted wax from the pot through pipe N.

O′ is a screw-cap for holding the stuffing in, and centrally perforated to permit the thread L to pass through.

N′ is a pipe secured in the wax-pot opposite to and in line with the pipe N, and extending to some distance out through the steam-chamber to and secured in a ring, R.

Q is a pipe surrounding the pipe N′, secured at its outer end upon the ring R, at its inner end secured in the steam-chamber, and serving as an extension of the steam-chamber around the pipe N′.

R′ is elastic stuffing held upon the end of the pipes N′ and Q, to prevent escape of wax from the former.

Q′ is a screw-cap for holding the stuffing R′ in place. A needle long enough to reach from the cap O′ to the stud M is used for inserting the thread, and the pipe N′ is bell-mouthed or provided with a funnel, *a*, to assist in guiding the needle into the pipe. Steam or heated air is provided to the chamber I through a pipe, *b*, entering the pipe Q.

c is a discharge-steam pipe, which may be carried along other parts of the machine which require to be heated.

d is a shield or heating-chamber inclosing all that portion of the head whereon the upper thread plays in the act of forming and taking up the loops in sewing. The form of this shield may be somewhat arbitrary; but I find that it may be made close with least trouble and expense by extending it across the axes of the arms E and F, which reciprocate in it, and by providing these arms with circular hubs having arcs *f*, fitted closely to oscillate in holes in the wall of the chamber.

g is a pipe through which hot air may be admitted to the chamber *d;* or the steam-pipe *c* may be passed through the chamber to furnish heat thereto.

h is a door hinged to the front wall of the chamber *d* to close the opening *i*, through which the works of the head may be reached for any purpose.

e represents the back of the chamber, which may be formed as a portion of the casting of the head B; or it may be secured thereon in any suitable manner.

With different styles of machines the form of the shield *d* would vary to suit each one, and the length of the pipes N Q will conform so as to reach as near to the shield as may be and leave space for removal of the screw-cap Q′.

J is a movable lid or cover for the wax-pot.

In operation a number of threads of different sizes—say three, four, and six corded threads —may be inserted through the wax-pot and out through pipe N′. Either one of these threads may be inserted in the needle for use, while the others may be tied around anything convenient, such as the end of the pipe Q. The thread in use will draw past the others without moving them, and either of them may be at any time exchanged for the one in use, so that the operator may at any time change the thread to suit the work at hand without waiting to insert the different thread required. Either dry heat or steam may be supplied in any usual way for use in the pipes and chambers. By placing the wax-pot at an incline and passing the thread through it near its bottom, the wax may be all used out. The screw-nut Q′ may be screwed upon the stuffing with any degree of pressure required to wipe surplus wax from the outside of the thread. It is not designed to produce any tension upon the waxed thread, but to produce all the tension required on the thread before it is waxed, thus producing much more even work than can be done where the tension acts on the waxed thread, because the thread can never be perfectly evenly waxed, and because the wax is more sticky at some times than at others. The aperture into the hot-air chamber *d*, where the needle plays out and in, permits sufficient escape of heat to preserve a current, and this escape is around the thread while it is unprotected from cold by the shield, thus utilizing the heat to the very last stage of the thread's passage. By this construction only a low degree of heat is required to keep the thread in working order, so low that all the parts of the shield and its contents may be handled with safety.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a tension device, H, and the delivery-stud M of a sewing-machine, of a wax-pot having holes through its two sides in the path of the thread, stuffing-boxes around said holes and elastic stuffing therein, substantially as shown and described.

2. The combination of the flanged wax-pot J, the pipes N N′, secured in line with each other at opposite sides of the said pot, the steam-jacket I, surrounding the said pot and secured to the flanges thereof, the pipe Q, surrounding the pipe N′, and secured at one end in the jacket I, the ring R, connecting the pipes N′ and Q, and steam-passages *b c* to and from the steam-chamber, substantially as shown and described.

3. The combination of the steam chamber or jacket I, the wax-pot J, secured at its upper edges therein, the stuffing-box O at the side of the jacket, the perforated cap O′ therefor, the pipe N, connecting the wax-pot with the jacket, the pipe N′ in the wax-pot opposite to the pipe N and in line therewith, the pipe Q, surrounding the pipe N′, and secured at one end in the jacket I, the ring R, connecting the pipes N′ and Q, steam-passages *b c* to and from the steam-chamber, and the perforated stuffing-box cap Q′ on the end of pipe Q, substantially as shown and described.

4. The combination of the steam-chamber I, the wax-pot J within it, pipes passing from opposite sides of the wax-pot out through the chamber and connected therewith, and stuffing-boxes provided with perforated caps upon the ends of the pipes, and pipes leading to and from the steam-chamber, substantially as shown and described.

5. The combination, with the wax-pot, the steam-chamber and their adjuncts (described) secured upon a sewing-machine between the tension and the needle, of the shield *d*, fitted upon the head of the machine, and a heat-pipe leading thereto, substantially as shown and described.

6. The combination, with the overhanging head B of a sewing-machine, of the shield *d* and the back secured thereto, covering the thread-carrying parts thereon, and an inlet-pipe, *g*, substantially as shown and described.

7. The combination, with the sewing-machine head B, of the shield *d*, secured thereon, heat-conductors therefor, and the aperture *i* and door *h*, substantially as shown and described.

BENJ. F. LANDIS.

Witnesses:
SOLON C. KEMON,
CHAS. A. PETTIT.