

(No Model.)

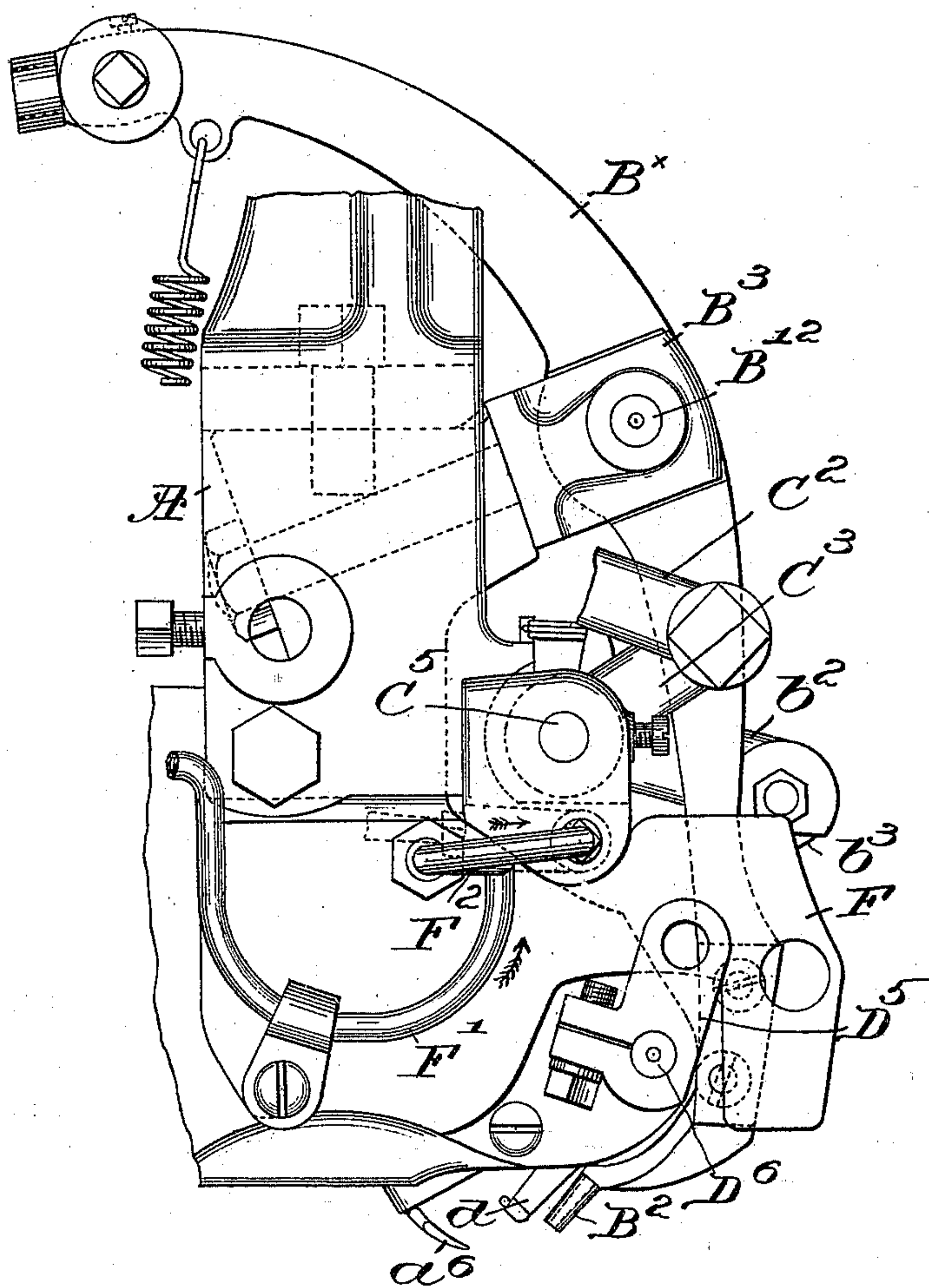
2 Sheets—Sheet 1.

Z. T. FRENCH.
SEWING MACHINE.

No. 561,386.

Patented June 2, 1896.

Fig. 1.



Witnesses.

Fred S. Grunhof.
A. C. Harmon.

Inventor.

Zachary T. French.
by Crosby & Gregory
attys.

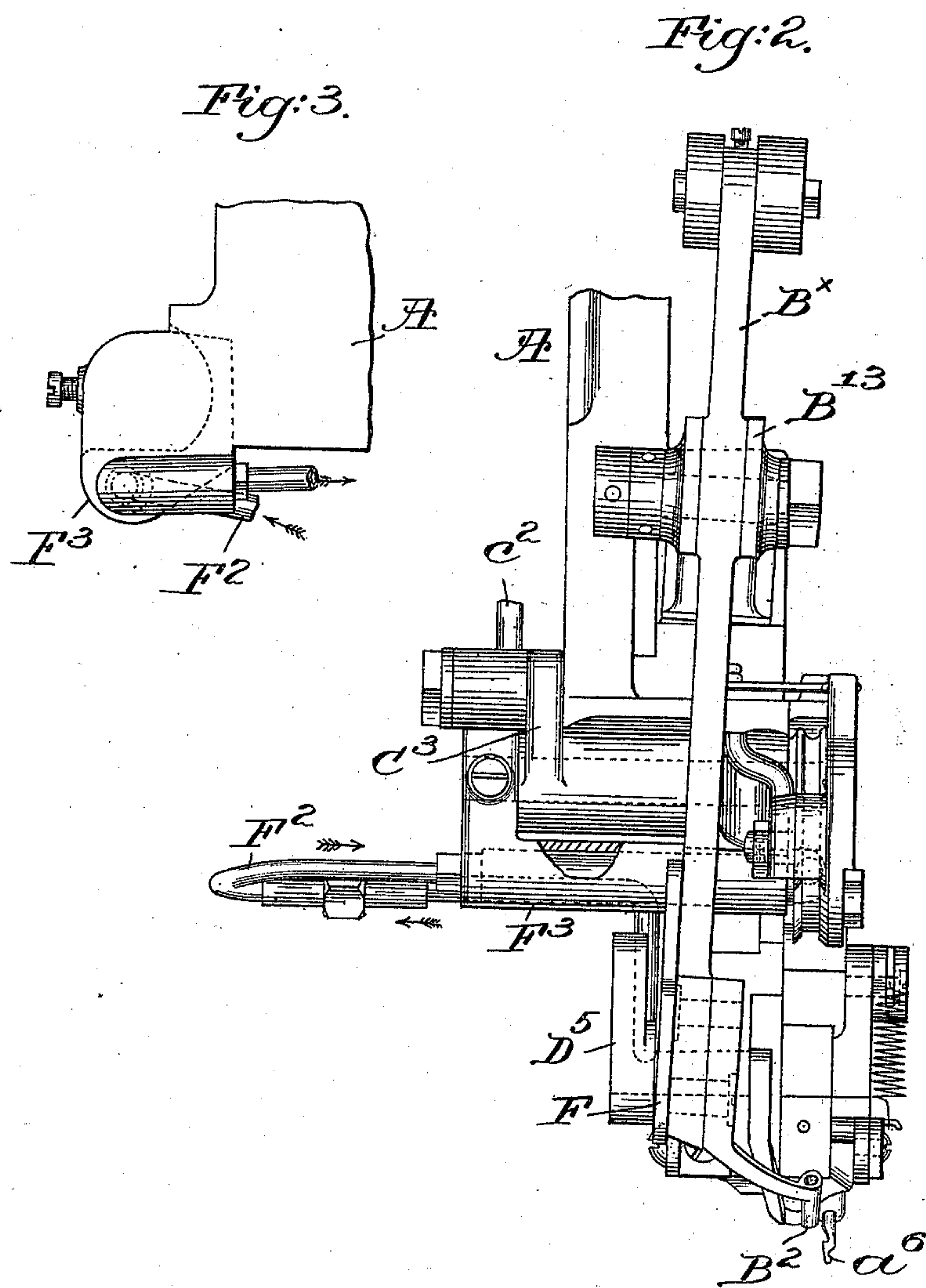
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UNITED STATES PATENT OFFICE.

ZACHARY T. FRENCH, OF BOSTON, MASSACHUSETTS.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,386, dated June 2, 1896.

Application filed May 14, 1894. Serial No. 511,075. (No model.)

To all whom it may concern:

Be it known that I, ZACHARY T. FRENCH, 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.

10 In sewing-machines using waxed thread the different parts against which the thread travels have to be kept quite hot, and for this purpose very many plans have been devised, some depending upon the employment of gas
15 and others upon heat derived from steam in pipes. The gas-flame is objectionable on many accounts, and when steam is used in customary manner the addition to the sewing mechanism of pipes to conduct the steam greatly
20 complicates the machinery, and where a looper carried by a long lever has to be kept hot, steam has not up to the present time proved thoroughly efficient.

My invention aims particularly to heat the
25 looper-carrier and looper employed in the class of machine represented in United States Patent No. 412,704, dated October 8, 1889.

To enable the looper and looper-carrier to be effectually heated by steam as the heating
30 medium, I have combined with the machine a block or plate of a metal possessing great conductivity—such, for instance, as copper—and this block or plate, preferably made hollow, is thoroughly heated by steam, or it may
35 be other liquid, the block or plate being so located with relation to the looper-carrier or looper, or it may be other moving part to be heated, that said looper-carrier, looper, or other moving part during a portion of its cycle
40 of movement is in contact for a greater or less portion of said movement with the said heated block or plate, the duration of contact being sufficiently long to enable the looper-carrier, looper, or other movable part to be
45 come heated to such a degree that the wax on the thread controlled by said looper or other part is kept sufficiently soft to rend freely and not injure said looper or other part.

Figure 1, in side elevation, represents a sufficient portion of a sole-sewing machine of

well-known construction with my improvements added to enable my invention to be understood. Fig. 2 is a view of the parts shown in Fig. 1, looking at said figure from the right; and Fig. 3 is a detail to be referred to. 55

Referring to the drawings, the framework A, the looper B², its looper-lever B^x, pivoted at B¹² on the pivoted stud B¹³, the rock-shaft D⁶, having an attached segment to which is connected the hooked needle a⁶, the combined cast-off and needle-guide 8, arm D⁵, connected to the rock-shaft D⁶, the rock-shaft C⁵, its attached arm C³, the link C², connected to said arm, the thread-holder d, and the take-up lever b², having the roll b³, over which
60 the waxed thread passes, are and may be all substantially as in said Patent No. 412,704. 65

In accordance with my invention I have added to the head or framework of the machine a metallic block or plate F of a metal
70 highly sensitive to heat or a metal having the capacity of becoming quickly heated and of keeping its heat—such, for instance, as copper—and in this instance of my invention I have provided to heat said block or plate by
75 or through steam or other hot fluid flowing through a pipe F', suitably connected with a reservoir for supplying steam or other hot fluid. The block or plate is so located that
80 when the looper is moved into the position shown best in Fig. 2, which position it occupies for a greater or less portion of the cycle of movement of the looper about the hooked needle, the said looper-carrier will bear directly against and be heated by conduction
85 from the said plate.

When the machine is at rest, the normal condition of the looper is against said heated block or plate, as represented in Fig. 2.

I have shown the steam-pipe F' as so shaped
90 that the conduction F² thereof conducts steam through a casting F³, which in turn imparts heat to the arms C³ and b², the steam passing from the said hollow casting F³ preferably
95 back to a suitable exhaust.

The block or plate may, if desired, be hollow.

The arrows near the pipes F' F² show the direction in which the steam or other hot fluid travels.

It is obvious that other parts than the looper 100

and looper-carrier may be brought intermittingly in contact with the block or plate, such as described, and be heated.

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

10 In a sewing-machine, a block or plate heated by a fluid, and a looper and looper-carrier, combined with means to move the said carrier to put it in contact intermittingly with the said heated block or plate, to thereby in the

operation of the machine, keep the looper heated to the proper degree, substantially as described.

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

ZACHARY T. FRENCH.

Witnesses:

GEO. W. GREGORY,

M. J. SHERIDAN.