

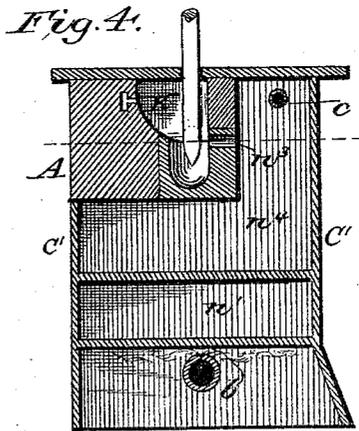
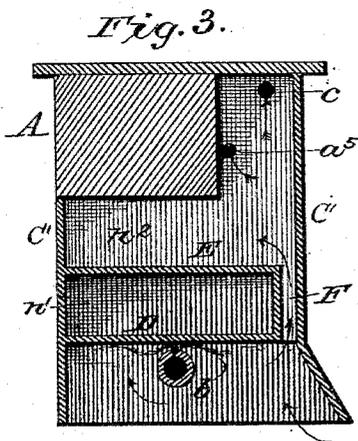
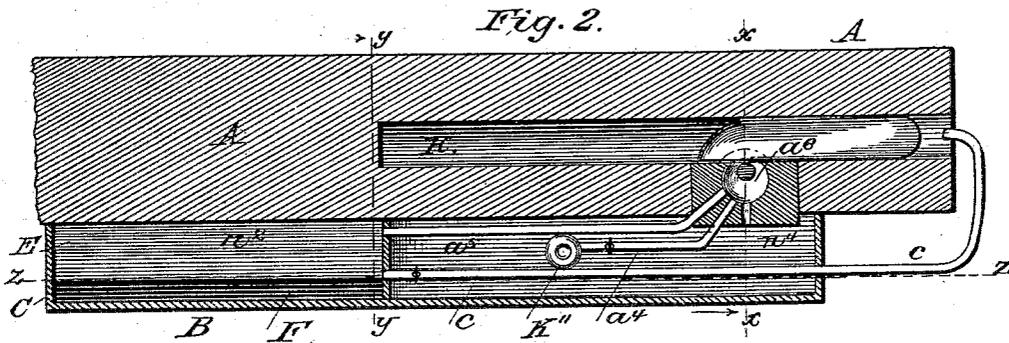
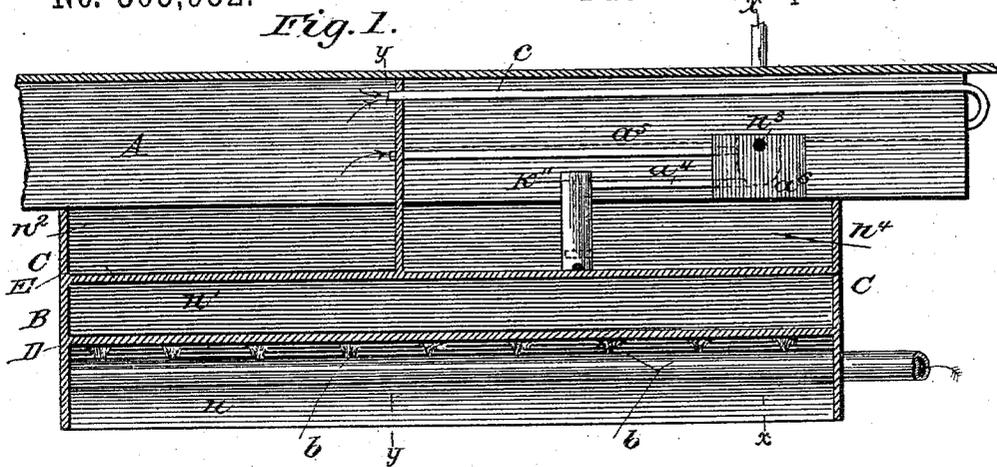
(No Model.)

B. F. LANDIS.

HEATING ATTACHMENT FOR WAX THREAD SEWING MACHINES.

No. 305,932.

Patented Sept. 30, 1884.



WITNESSES:

*Fred. G. Dieterich*  
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INVENTOR:

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BY *Munn & Co.*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

BENJAMIN F. LANDIS, OF ST. JOSEPH, MISSOURI.

HEATING ATTACHMENT FOR WAX-THREAD SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 305,932, dated September 30, 1884.

Application filed June 14, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. LANDIS, of St. Joseph, in the county of Buchanan and State of Missouri, have invented a new and useful Improvement in Heating Attachments for Waxed-Thread Sewing-Machines, of which the following is a full, clear, and exact description.

This invention relates to that class of sewing-machines which apply wax to the thread while sewing. In order that waxed threads may be used in sewing, it is necessary that they be kept pliable by the application of heat. For this purpose some machines have used steam injected into the shuttle-race. This has a damaging effect on the work. It also prevents the wax from adhering to the thread, and causes the thread to become so limp that it will not loop well. In cold weather it condenses in the shuttle-race in drops of water, and in all weather it quickly rusts the machine. If, on the other hand, too much heat is applied, the thread will be damaged and the wax will boil over.

The object of my invention is to establish a mean between these two extremes, and to avoid the objectionable features of both.

To this end my invention consists in a heating attachment for sewing-machines, constructed as hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of my heater, showing the adjacent parts of a sewing-machine to which it is attached. Fig. 2 is a plan view of the same with the top plate removed. Fig. 3 is a transverse vertical section at  $y y$ , Fig. 1; and Fig. 4 is a transverse vertical section of shuttle-race and wax-bowl at  $x x$ .

A represents the body or frame of the sewing-machine, to which the box B is attached in any usual manner. This box is made of sheet metal, preferably copper, as a good heating medium. It consists of an outer wall, C C', provided with a horizontal floor, D, below which is the combustion-chamber  $n$ , in which one or more flames,  $b$ , are produced by means

of lamps, gas-jets, &c. This chamber is open for free ingress of air at the bottom.

E is another floor or horizontal partition separating the water-boiler  $n'$  from the hot-air chamber  $n^2$  and the wax-reservoir  $n^1$ . The water-boiler is filled through a tube entering the top, and another tube may furnish an escape for steam, neither of which tubes is shown.

F represents a flue communicating from the combustion-chamber  $n$  to the hot-air chamber  $n^2$ .

$c$  is a pipe for delivering hot air from chamber  $n^2$  to the shuttle-race  $k$ . I have shown this pipe as extending around to enter the shuttle-race from its outer end; but the connection may be made at any point along the shuttle-race desired.

$a^b$  represents the wax-bowl, into which the point of the needle dips at each stitch, carrying the thread in its eye into the wax, which is kept melted in said bowl by heat received through a pipe,  $a^c$ , directly from the air-chamber  $n^2$  or indirectly from pipe  $c$ . The wax in chamber  $n^1$  is kept sufficiently hot by the water-boiler beneath it to remain fluid, and it may be delivered to the wax-bowl  $a^b$  by any usual method, such as the pump K'', which is actuated to deliver through pipe  $a^d$  a little wax at each stroke of the needle.

$n^3$  is an overflow-passage leading from the upper portion of bowl  $a^b$  to the wax-chamber  $n^1$ , to return the surplus wax, as it is intended that the bowl shall always be fully supplied.

The operation is as follows: The air, becoming heated in the chamber  $n$ , rises through flue F into chamber  $n^2$ , whence it passes through pipes  $c$  and  $a^c$  to the shuttle-race and to the wax-bowl. By interposing the water-chamber between the flame and the body of the air-chamber, and by forcing the hot air to pass in a flue through said water-chamber before it can reach the air-chamber, I cause the extreme or dangerous degree of heat of the combustion-chamber to be diffused in the water, and thence, in a very much reduced degree, to be given out to the wax and to the hot-air chamber, and by interposing this air-chamber between the combustion-chamber and the

shuttle-race I prevent any flame or any air dangerously hot from entering the shuttle-race. At the same time I insure a supply of perfectly dry air at a degree of heat sufficient to accomplish the desired result.

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

1. The combination, with the stitch-forming devices of a sewing-machine, a combustion-chamber, and an air-passage leading therefrom to the sewing-machine shuttle-race, of a water-chamber interposed between the combustion-chamber and the shuttle-race, substantially as and for the purpose specified.

2. The combination, with the stitch-forming devices of a sewing-machine, a combustion-chamber, an air-passage leading therefrom to the sewing-machine shuttle-race, and a water-chamber interposed between the combustion-chamber and shuttle-race, of a hot-air chamber communicating with the said air-passage between the water-chamber and shuttle-race, substantially as and for the purpose specified.

3. The combination, with the stitch-forming devices of a sewing-machine and an open-bot-

tomed combustion-chamber, of a water-chamber covering the top thereof, a hot-air chamber above the water-chamber, a flue connecting the combustion-chamber with the air-chamber, and an air-passage arranged to connect said air-chamber with the shuttle-race of the sewing-machine.

4. The combination, with the stitch-forming devices of a sewing-machine, a combustion-chamber, and a water-chamber covering it, of an air-chamber on top of a portion of the water-chamber, a flue connecting said air-chamber with the combustion-chamber, a wax-chamber on top of the remaining portion of the water-chamber beside the air-chamber, and means for delivering wax from said chamber to the sewing-machine, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in presence of two witnesses.

BENJ. F. LANDIS.

Witnesses:

SILAS R. OWEN,  
F. W. BRADLEY.