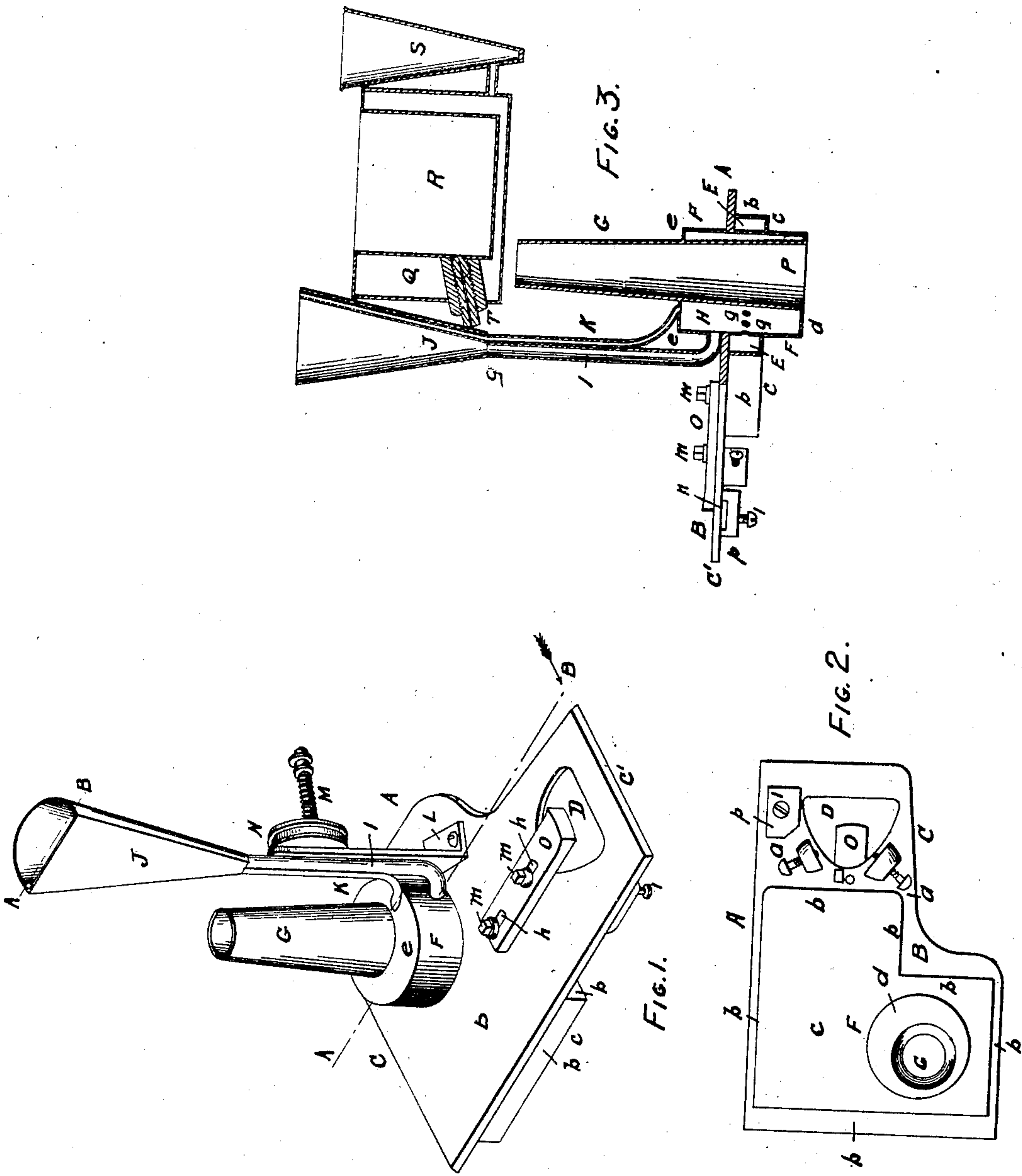


W. F. HAYDEN.  
HEATING TOP PLATES OF WAX THREAD SEWING MACHINES.  
No. 67,300. Patented July 30, 1867.



Witnesses:  
*Thos H. Dodge*  
*D. L. Meeker*

Inventor  
*W. F. Hayden*

# United States Patent Office.

WILLIAM F. HAYDEN, OF BROOKFIELD, MASSACHUSETTS.

*Letters Patent No. 67,300, dated July 30, 1867*

## IMPROVEMENT IN HEATING TOP PLATES OF WAX-THREAD SEWING MACHINES.

*The Schedule referred to in these Letters Patent and making part of the same.*

### KNOW ALL MEN BY THESE PRESENTS:

That I, WILLIAM F. HAYDEN, of Brookfield, in the county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Top Plates for Wax-Thread Sewing Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a perspective view of my improved top plate.

Figure 2 represents a bottom view; and

Figure 3 represents a section on line A B, fig. 1, looking in the direction of the arrow, and also a section of the wax-receptacle used in connection with the sewing machine when in use.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it.

In the drawings, A represents the top plate of a wax-thread sewing machine made according to my invention. The top B of the plate is made in the form of the ordinary plate used, so far as the back edge C and opening D are concerned. The front *c'* of plate A is reduced in width. The opening D is made to receive and fit the post of the machine, and to which post the plate A is secured by the set-screws *a a*. The bottom of top B is provided with a water-chamber, E. This chamber may be formed by casting the walls or sides *b b b b b b* and bottom *c* with the top B, the chamber E being formed by sand cores, or the walls and bottom of the chamber E may be cast or formed separately, and then brazed, soldered, or otherwise fastened to the bottom of the top part B. A cylindrical partition, F, passes through the rear of chamber E and the top part B, and is made fast to each, as indicated in the drawings. The partition F is provided with a bottom, *d*, and top, *e*, through which passes the chimney G, the latter being made fast to both the top *e* and bottom *d*. The sides of the partition F are pierced with small holes *f f*, so that a water communication is formed between the chamber E and chamber H, formed by the partition F. To one side of the partition F, just above the top part B, is connected the pipe or tube I, which extends up, and is connected at its upper end *g* to the bottom of the tunnel J. To the top *e* is connected another pipe or tube, K, which extends up and enters the bottom of the tunnel J, and thence passes up by the inside of the latter, as clearly indicated in fig. 3. To the top B is fastened the stand L, the upper part of which fits close to the side of the tube or pipe I. From the top of stand L projects the arm M, which supports the tension-wheel or device N, which may be made in any well-known manner. O is the gauge, provided with slots *h h*, so that it can be adjusted by loosening the screws *m m*, by which it is fastened to the top part B of plate A. A slot, *n*, is made in the projection *p* to receive a thread-knife, which is to be held in place by the set-screw *l*.

The operation is as follows: The plate being fitted to the post of the sewing machine in the usual manner, water is turned into the tunnel J, until chambers E and H are filled. A lamp is then placed upon a suitable stand under the top plate A, so that the flame will enter and be enclosed in the bottom P of the chimney. The heat of the lamp is soon communicated to the metal chimney, and through that to the water in chambers H and E, the water being free to pass and circulate, through holes *f*, from one chamber to the other. In this manner the working parts of the machine become well warmed up, while the top plate A is kept heated to an even and proper temperature, whereby the waxed thread is retained in a sufficiently heated state, until it is sewed into the leather, to prevent its sticking, so as to cause breakages either of the thread or needles, or other working parts of the machine. In case any steam is generated in the chamber H, it passes up through pipe K. The heat of the lamp is further utilized by employing what heat passes out of the chimney G to heat the water in the vessel Q, into which is set the wax-receptacle R, the vessel Q being supported from the arm of the sewing machine, so as to occupy a position just above the top of the chimney, as indicated in the drawings. The vessel Q is filled by turning water into the conical vessel S. The hot water in the vessel Q keeps the wax in the receptacle R sufficiently hot to work well. The thread is drawn through the hot wax in the receptacle R and through the stem T, which removes the surplus wax; the thread then passes around the tension-wheel N, and to the needle, which plays just in front of gauge O, the operation of sewing being conducted in the usual manner.

By the use of my improved plate, the working parts of the machine work much better than when the thread is warmed in the modes heretofore in use. Besides, the placing or arranging the heating-lamp below the plate



enables the wax-receptacle to be combined with the sewing machine in a much more compact and convenient manner than it possibly can be when the lamp is arranged above the plate. Again, by the arrangement whereby the flame of the lamp is applied to the metal in close proximity to the top piece B, the heat of the latter is kept up to the desired temperature without difficulty, which insures the proper working of the thread until it is fully drawn into the leather, and which is very important, in order to have the thread hold well and make a tight and perfect seam. By the use of my improved top plate, the operation of sewing with a waxed thread is rendered very easy, while the work done is far superior to that done on the machines as heretofore constructed, with the heating arrangement or lamp placed above the plate. The arrangement, too, is such as to secure safety. There is no danger from explosions or overheating of the parts, and yet the top plate of the machine is kept heated to the desired temperature, and that, too, without danger of overheating the wax. By arranging a stationary thread-knife in the projection or support *p*, so that the edge will come in close proximity to the loop, the thread can be easily severed by the operator as he removes the work from the machine, the thread being drawn across or against the edge of the knife by the operation.

Having described my improved top plate for wax-thread sewing machines, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination with the top plate of a wax-thread sewing machine of a chimney, G, whereby the lamp for heating the wax can be placed under or below the top plate of the machine, substantially as and for the purposes set forth.
2. The combination with the top plate B of the chamber E, substantially as set forth.
3. The combination with the top part B of the chambers E and H, chimney G, and pipes I and K, substantially as and for the purposes set forth.
4. The combination with the front part of the plate B of the gauge O and thread-knife support *p*, substantially as set forth.
5. Supporting the tension-wheel on the stand L, the said wheel being arranged with the pipes I K. as shown and described.

WM. F. HAYDEN.

Witnesses:

THOS. H. DODGE,  
D. L. MILLER.