W. J. GARTON.

Wax-Thread Heating-Machine.

No. 167 094. Patented Aug. 24, 1875.

Fig. 1.

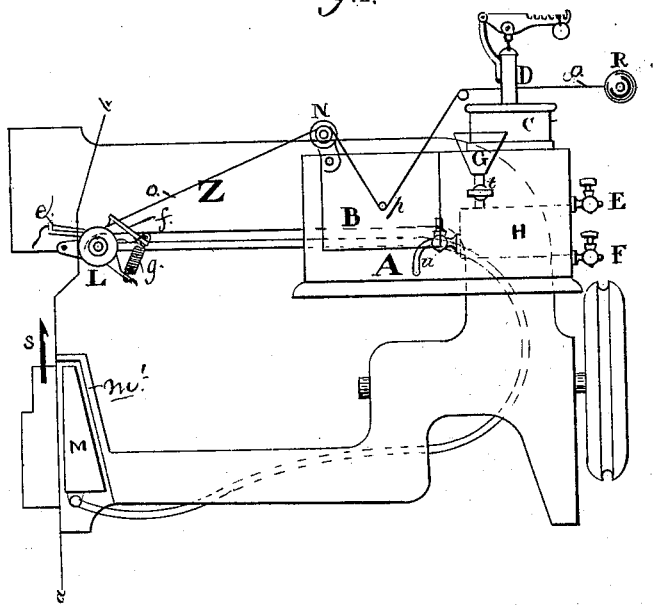


Fig. 2.

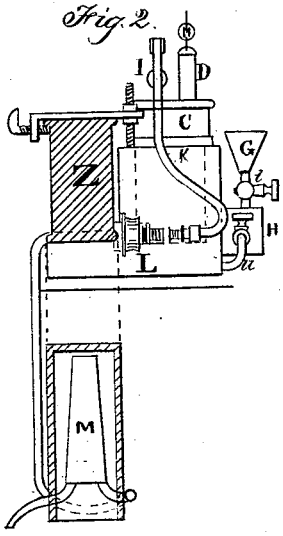


Fig. 3.

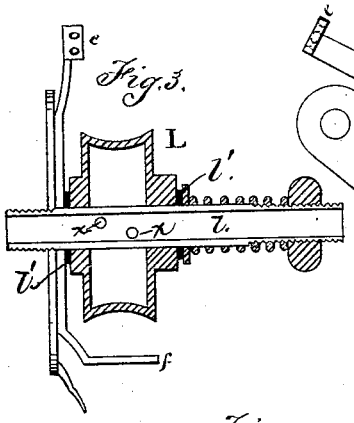


Fig. 4.

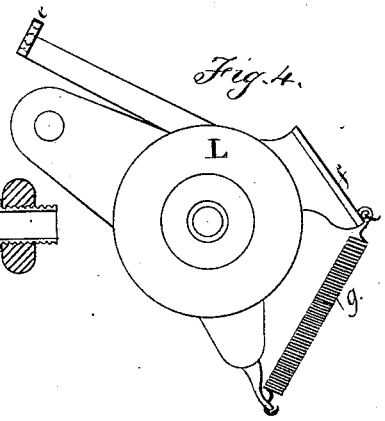


Fig. 5.

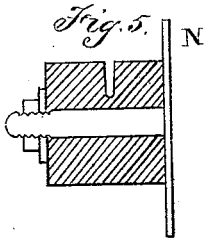
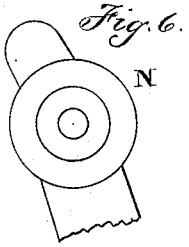


Fig. 6.



Witnesses.
Thomas Garton
William Gill

Inventor.
William John Garton

UNITED STATES PATENT OFFICE.

WILLIAM J. GARTON, OF TORONTO, CANADA, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM WARD, OF SAME PLACE.

IMPROVEMENT IN WAX-THREAD-HEATING MACHINES.

Specification forming part of Letters Patent No. **167,094**, dated August 24, 1875; application filed February 18, 1875.

To all whom it may concern:

Be it known that I, WILLIAM JOHN GARTON, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, shoemaker, have invented certain new and useful Improvements in Wax-Thread-Heating Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to sundry improvements in wax-thread-heating machines, such as are used in boot and shoe factories, having for their object to thoroughly heat and keep pliable the waxed thread while being used on a sewing-machine, so that the work produced by the machine with the aid of my improvements shall be equal in quality, and in every other respect, to that produced by the best hand labor.

My invention relates to the combination and arrangement of the steam-generating boiler, its dome, and safety-valve with the cistern, water-tanks, and their respective taps, and also to an arrangement of a rotary steam-drum heated from a steam-pipe combined with certain thread-guides and a spring.

I employ a steam-generating boiler having an open compartment or cistern, in which the wax is melted and retained in a suitable liquid state for the proper waxing of the thread; also a rotating steam-drum which is hollow and rotated upon a perforated hollow axle with steam-tight journals. This drum acts as a tightening-pulley for the thread on its way to the needle of the sewing-machine, and from its being always full of live steam, and the thread having a full turn or coil upon the same, the thread will leave it in a thoroughly pliable state, and in every way suitable for its intended purpose. I also use in my machine a vertical heater made of sheet-copper or other suitable material, and which is tapered and semicircular, so as to admit of its being placed in the hollow chamber of the sewing-machine contiguous to the needle, and it has a broad base, so as to receive and hold a large quantity of steam and retain a steady supply of heat, by which means the needle is also kept warm and in a suitable condition for acting upon the thread, by imparting additional heat to it just at the instant it is forming the stitch, so that the requisite quantity of wax, and unadulterated, is conveyed into and left in the stitch, thereby producing work which will always rank as first-class.

In the accompanying drawings the same letters of reference indicate the same parts in all the views, and also in this specification.

Figure 1 is a side view of a sewing-machine having my apparatus attached thereto.

A is the steam-boiler; B, the compartment or cistern wherein the wax is kept in a liquid state from the heat of the steam surrounding the same; C, the steam-dome; D, a safety-valve; E, the upper testing-tap; F, the lower testing-tap; G, the upper water-supply tank; H, the lower tank. Water is filled by hand into the upper tank G, and thence admitted to the lower tank H by means of the tap *t*, and finally it is admitted to the boiler by means of the tap *u*, taking care to close the tap *t* before opening the tap *u*, and when the requisite quantity is supplied to the boiler, which is ascertained by the test-taps E and F, the tap *u* is closed, and will so remain until water is again required for the boiler. The proximity of these water-supply tanks to the boiler will cause the water in the same to become heated, and will prevent condensation of the steam in the boiler when introducing feed-water therein. I is a steam-tap on top of dome C, for supplying steam for the required purposes of my invention. K is the steam-pipe leading from tap I; L, the steam-drum arranged to rotate on the hollow shaft or tube *l*, and having steam-tight journals *l'*, openings *x* in the tube admitting the steam from it into the drum. The thread, passing through the guide-eye in *f*, is coiled or passed around the drum, and thence passes through eye or guide *e*, and thence downward, to be acted upon by the hook-needle. M, the vertical heater for needle, located within the hollow chamber *m'* of the sewing-machine; N, the rubber cleaners; *o o*, the thread; *p*, a guide in the cistern B, under which the thread passes on its way to the needle. Z represents a sewing-machine, of which S is the needle.

Fig. 2 is a transverse section through the line *a b*, showing boiler A, dome C, steam-

drum L, vertical heater M, upper tank G, lower tank H, steam-pipe K, leading from tap I first to the steam-drum L, and afterward to the vertical heater M, after which it passes out to the atmosphere. Fig. 3 is a sectional view of the steam-drum L, showing more particularly its construction and operation; and Fig. 4, a side view of the same. Fig. 5 is a sectional view of the rubber cleaner N, and Fig. 6 a side view of the same.

It will be seen from the drawings that when the machine is in operation the needle S will, by its action, draw the thread *o o* from off the ball R, and it will pass through the liquid wax under the guide *p* in cistern B, thence through the rubber cleaners N, and finally over the steam-drum L to the needle S. It will also be seen that the thread must be in a thoroughly pliable state, and fulfilling all the requirements for producing perfect work.

What I claim in machines for heating waxed thread for sewing-machines is—

1. The described combination and arrangement of the steam-generating boiler, its dome and safety-valve, the cistern or compartment B, the upper water-supply tank G, the lower water-tank H, adapted to be supplied from tank G, and their respective taps *t* and *u*, the whole operating as and for the purposes set forth.

2. The steam-drum L, arranged to turn upon a hollow perforated steam-pipe, in combination with the thread-guides *e f* and spring *g*, all substantially as and for the purposes described.

WILLIAM JOHN GARTON.

Witnesses:
THOMAS GARTON,
WILLIAM GILL.