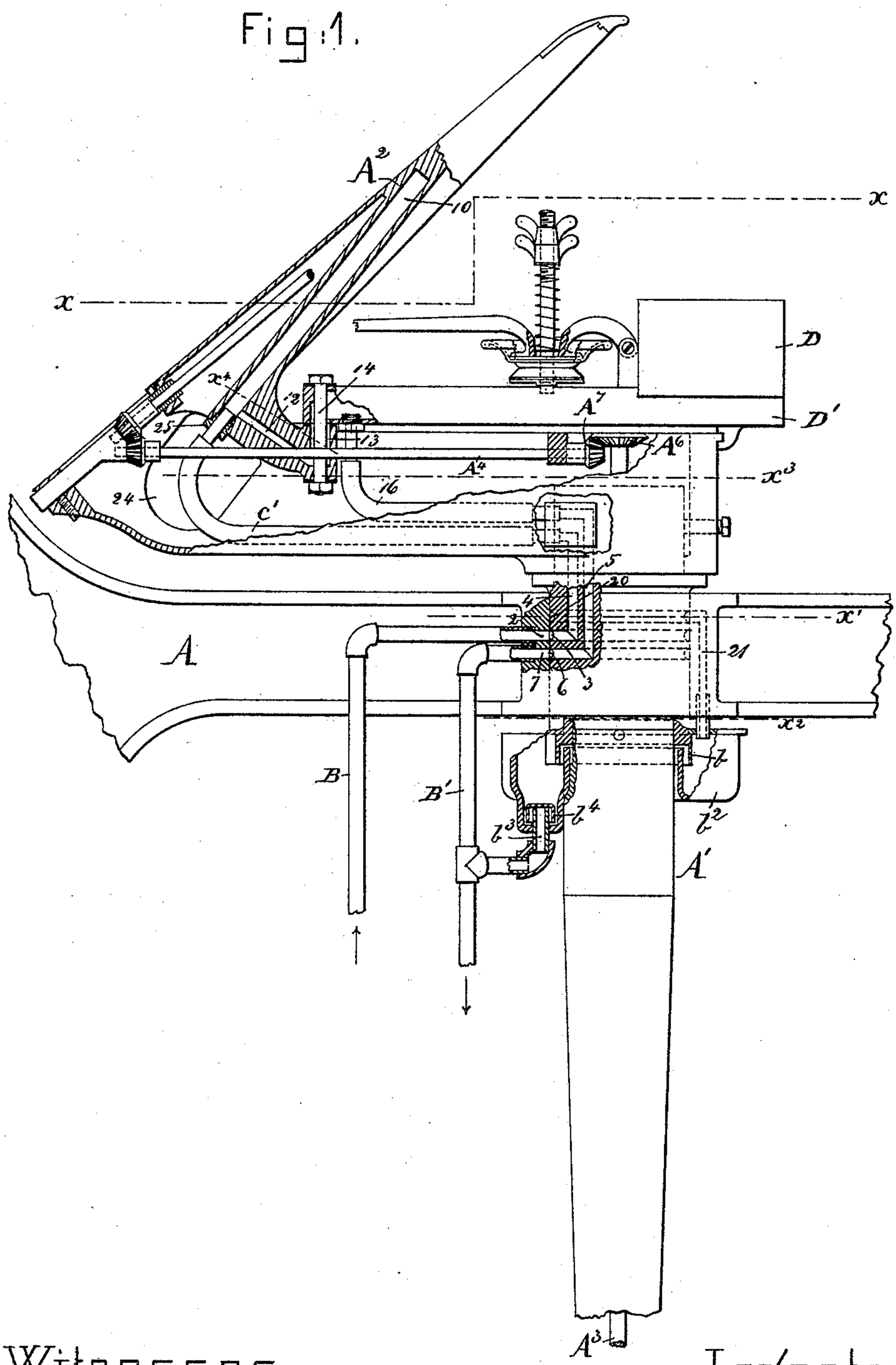
(No Model.) 2 Sheets—Sheet 1.

G. R. PEARE.

WAX HEATING DEVICE FOR SEWING MACHINES.

No. 405,593. Patented June 18, 1889.

Fig. 1.



Witnesses.
Howard F. Eaton.
John F. C. Brinckerhoff.

Inventor.
George R. Peare.
By Crosby & Gregory Attys

(No Model.) 2 Sheets—Sheet 2.

G. R. PEARE.

WAX HEATING DEVICE FOR SEWING MACHINES.

No. 405,593. Patented June 18, 1889.

Fig: 2.

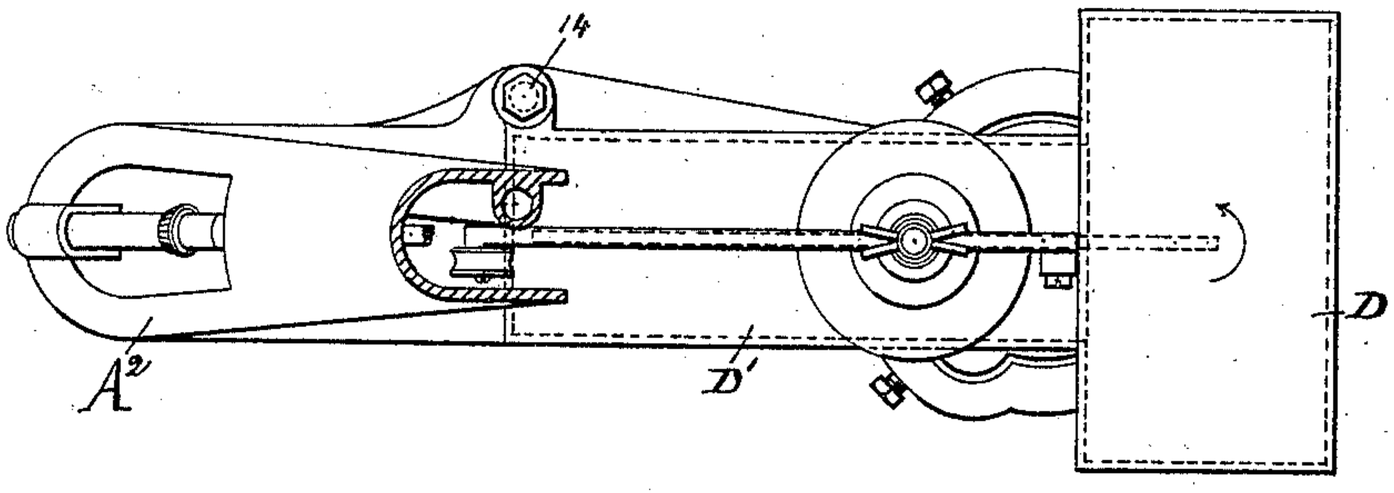


Fig: 5.

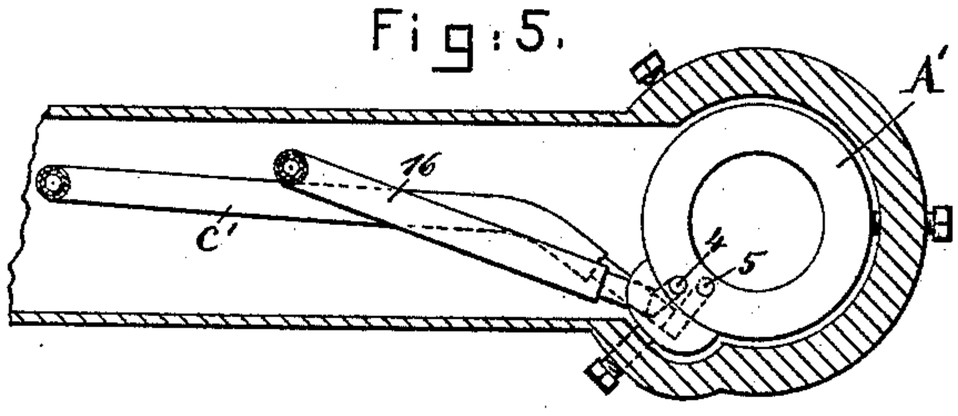


Fig: 3.

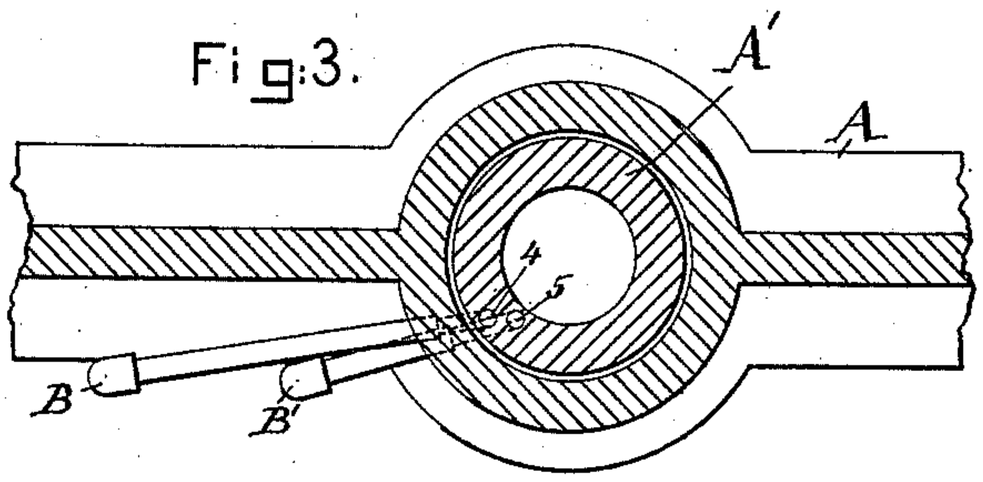


Fig: 6.

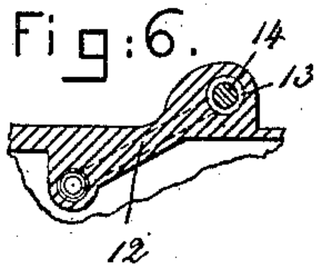
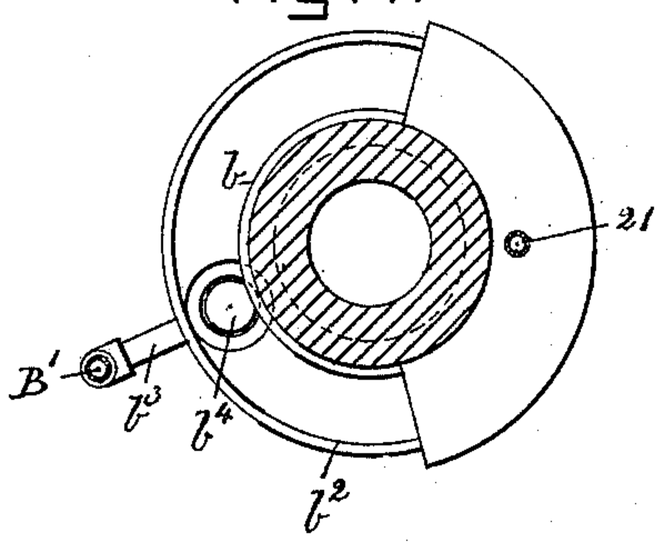


Fig: 4.



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Inventor.
George R. Peare.
by Lorsby & Gregory Attys.

UNITED STATES PATENT OFFICE.

GEORGE R. PEARE, OF LYNN, ASSIGNOR OF ONE-HALF TO EDWIN L. SPRAGUE, OF BOSTON, MASSACHUSETTS.

WAX-HEATING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 405,593, dated June 18, 1889.

Application filed September 10, 1888. Serial No. 285,021. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. PEARE, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in Horns for Sole-Sewing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object, chiefly, to provide the horn with a joint through which may be passed the heated fluid, steam, or hot water employed to heat a wax-cup carried by the horn and warm other parts of the horn to keep the waxed thread at the proper consistency.

In accordance with my invention a portion of the horn-spindle, and preferably an enlarged portion, is provided with annular grooves and communicating vertical passages for the passage of the fluid used. The interior of the bearing for the horn-spindle, cooperating with the annular grooves referred to, forms annular passages for fluid about the horn-spindle. The fluid to be employed to heat the wax-cup and horn passes through the horn-bearing and enters one of the said annular grooves, and thence rises vertically through a passage in communication with the said annular groove and passes out through a steam-pipe into the base of the wax-cup, and thence along in a pipe in the arm of the horn, returning through a vertical passage in the horn-spindle and out through one of the annular grooves thereof into a return-pipe, as will be described. I have also provided means whereby any water of condensation is prevented from escaping and falling on the floor.

This my present invention is an improvement on that described in United States application, Serial No. 271,667, filed by me on the 24th day of April, 1888.

The particular features in which my invention consist will be more fully described in the specification, and specified in the claims at the end thereof.

Figure 1 in elevation shows part of a horn embodying my invention, the frame-work and horn being broken out to better show the parts within. Fig. 2 is a section below the dotted line x, Fig. 1. Fig. 3 is a section in the dotted line x'. Fig. 4 is a sectional detail on the line x^2. Fig. 5 is a section in the line x^3, Fig. 1; and Fig. 6 is a sectional detail below the line x^4 to show the passage 12, leading to the hole 13.

The frame-work A, the horn-spindle A′, and the arm A^2, the wax-cup D, its pivoted chambered base D′, the shaft A^3, extended through the horn-spindle, the bevel-gears A^6 A^7, and the shaft A^4 in the train of gearing for rotating the usual whirl at the end of the arm A^2 of the horn are all as in my said application, wherein the same letters are employed to represent like parts.

In Fig. 1 I have broken off the lower end of the horn-spindle; but in practice it will and may be supported by a step in any usual or well-known manner.

In this my present invention I have provided the frame-work of the machine with an inlet-pipe, as B, which enters a hole in the bearing for the horn-spindle, the said hole being extended to the interior of the said bearing to form a fluid-port 2. The said bearing has in it a like port 7, which communicates with a return-pipe B′, the pipe B being connected to any usual steam or hot-water supply, while the pipe B′ is led to a suitable waste, the said pipe B having at some point a suitable valve to control the quantity of fluid to pass to the horn.

The horn-spindle A′ (see Fig. 1) is shown as provided with an enlargement or shoulder having in its periphery annular grooves, (herein shown as three;) but I may employ more such grooves for packing purposes. The port 2 is opposite and at all times communicates with the annular groove 3, and this annular groove is intersected by a vertical passage 4, which above the spindle-bearing and within the hollow horizontal part of the horn is tapped by a horizontal passage, with which is connected a steam-pipe, as c', which is substantially as in my said application, the said pipe having its end, as shown, inserted into a hole, as 10, bored in a web of the horn, as best shown in Fig. 1, the end of the pipe terminating just within the said hole. The steam is permitted to leave the hole 10 by a port 12

(shown by full lines, Fig. 1, and in dotted lines, Fig. 6) leading to the hole 13, through which is extended the bolt 14, employed as the pivot for the hollow base D′ of the wax-cup D, the said bolt being surrounded near each end by a suitable packing, the bolt being of less diameter than the hole 13, so as to leave a steam passage or port for a portion of the length of the bolt, so that steam or other fluid can enter the base of the wax-cup.

The base D′ of the waxing device, as in my said application, is divided to form two channels in which the steam may pass to a point under the wax-cup D and then back, the steam leaving the base D′ through a pipe 16, which is in communication with the vertical passage 5 in the shoulder of the horn-spindle, the said passage leading into the annular groove 6, opposite which is the port 7 in communication with the return-pipe B′ referred to. In the rotation of the horn different parts of the annular grooves 3 and 6 are brought opposite the ports 2 and 7. In this way the steam is free to enter the base of the waxing device and to heat the horn and return, no matter what the position of the horn.

The horn-spindle just below its shouldered or enlarged portion, grooved as described, is surrounded by a drip-collar *b*, the upper portion of which will preferably enter a groove cut in the under side of the said shoulder, as shown in Fig. 1, all water of condensation escaping below the groove 6 passing over the said collar and dripping therefrom into a drip-cup b^2, surrounding the spindle A′, and being connected by a pipe b^3 with the pipe B′.

To prevent any vapor from working backwardly through the pipe B′ into the cup b^2, I have provided the cup with a trap, as b^4. Any steam working upwardly between the spindle and its surrounding bearing above the groove 3 enters an annular groove 20 and passes about in said groove to a passage or port 21 made in the bearing, the water of condensation leading thence into the said drip-cup, as at the right of the spindle in Fig. 1.

In practice the thread (not shown) will on its way from the wax-cup D to the usual whirl in the horn be subjected to the action of a tension device.

The horn has at one side, near the junction of its angular or inclined port with its horizontal port, an opening, as 24, (see Fig. 1,) which affords the operator ready access to the nut 25, employed to secure the pipe *c′* to the horn.

I claim—

1. In a sewing-machine, the combination, with a horn and its spindle provided with annular grooves and connecting-passages therein for direct and return heating-fluid, of a fluid-supply pipe and a fluid-return pipe, each communicating at all times with said direct and return grooves, respectively, to operate substantially as described.

2. In a sewing-machine, the combination, with a horn and its spindle provided with peripheral grooves and connecting-passages therein for direct and return heating-fluid, of a fluid-supply pipe and a fluid-return pipe connecting with said direct and return grooves, respectively, and with a drip-collar and drip-cup having a trap therein, substantially as described.

3. In a sewing-machine, the combination, with a horn and its spindle provided with grooves and passages for direct and return heating-fluid, of a fluid-supply pipe and a fluid-return pipe, and with a drip-collar and drip-cup, and connections between the said drip-cup and the said return-pipe, substantially as described.

4. The horn, its spindle provided with the annular groove 20, and the horn-bearing and its discharge-port 21 in communication with said groove 20, combined with the drip-cup b^2, connected with the port 21, substantially as described.

5. The horn having the opening 24 and the passage 10 therein, combined with the pipe *c′*, inserted in said passage, and nut 25 to hold it firmly therein, to operate substantially as described.

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

GEO. R. PEARE.

Witnesses:

G. W. GREGORY,

HOWARD F. EATON.