

No. 607,332.

Patented July 12, 1898.

J. E. BERTRAND.

THREAD WAXING DEVICE FOR SEWING MACHINES.

(Application filed Nov. 8, 1897.)

(No Model.)

Fig. 1.

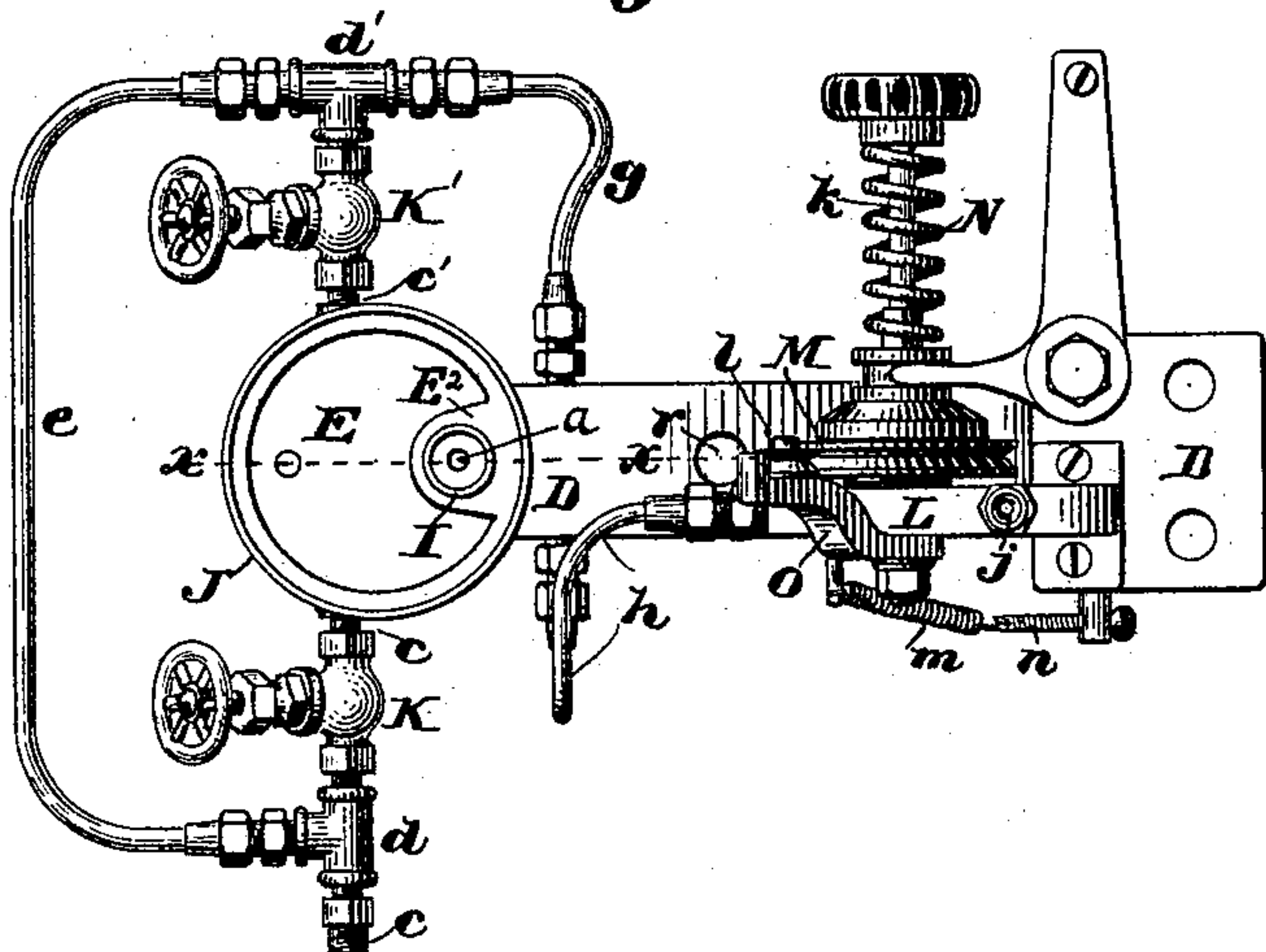


Fig. 3.

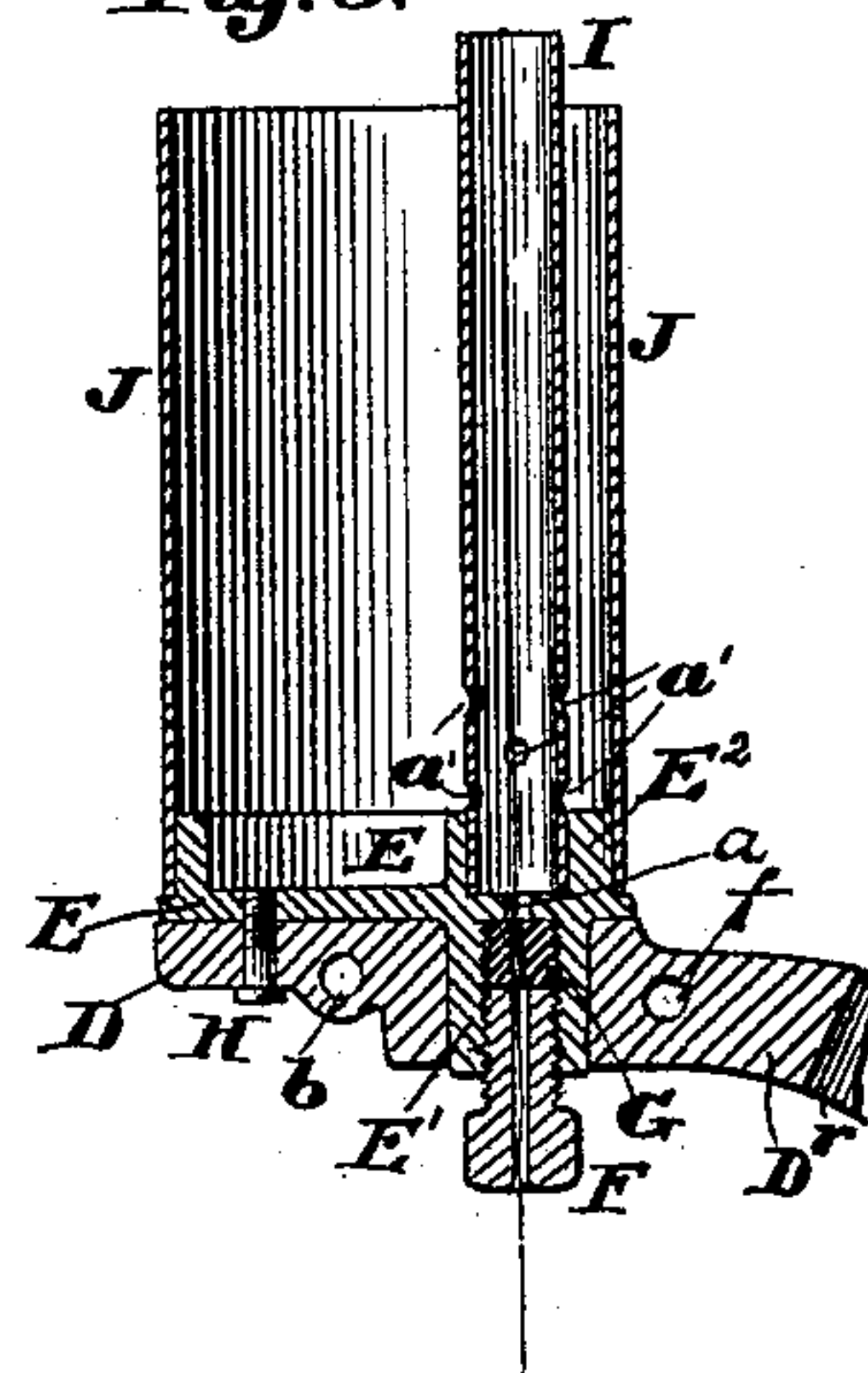
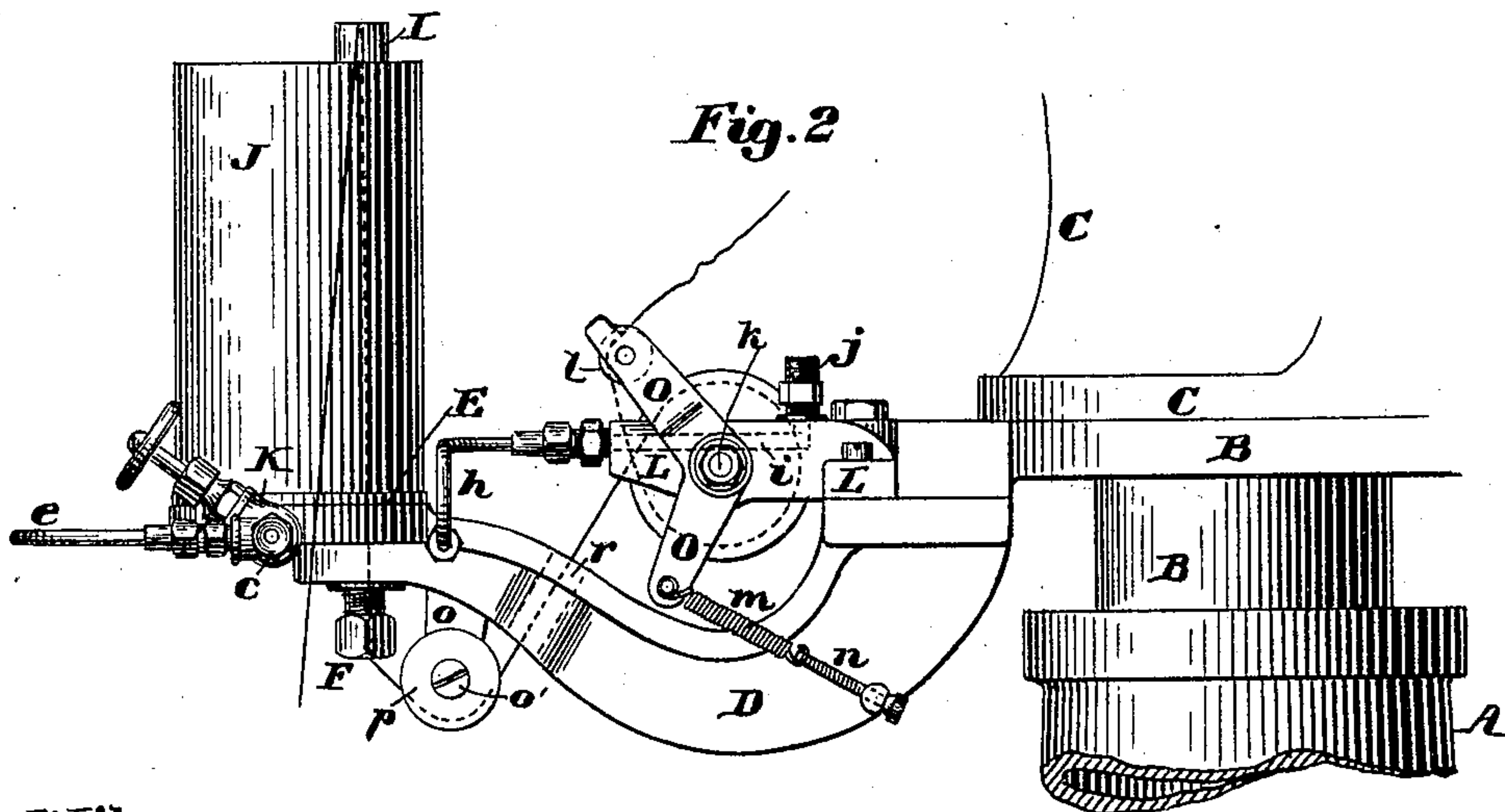


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH E. BERTRAND, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE
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THREAD-WAXING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 607,332, dated July 12, 1898.

Application filed November 8, 1897. Serial No. 657,840. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH ELI BERTRAND, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Thread-Waxing Devices for Sewing-Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to thread-waxing devices for sewing-machines; and it consists in certain novel features of construction, arrangement, and combination of parts, which will be readily understood by reference to the description of the accompanying drawings and to the claims hereto appended, and in which my invention is clearly pointed out.

Figure 1 of the drawings is a plan of my improved thread-waxing device disconnected from the sewing-machine. Fig. 2 is a side elevation of the same parts secured to the machine-supporting column; and Fig. 3 is a vertical section of the wax-pot and a small portion of its supporting-bracket, the cutting plane being on line *xx* on Fig. 1.

In the drawings, A is the main body of the machine-supporting column, B is an adjustable section of said column, and C represents a portion of the outline of the frame of the machine-head, all of which may be of any well-known construction.

D is a bracket preferably secured to the flange of the section B of the supporting-column, but which may, if desired, be secured to the base of the frame of the machine-head C. The bracket D is arranged to project rearwardly from said column or frame and has firmly secured to its outer end the shallow cup-like circular casting E, which is provided with a tubular hub E', arranged eccentrically thereon and projecting downward therefrom through an opening in said bracket and having screwed therein from its lower end the longitudinally-perforated set-screw F, between which and the bottom of said cup-like casting E, which is pierced by a small hole *a* for the passage of the thread, is inserted a cylindrical thread-stripper G, made, preferably, of rubber and having a central perforation in axial line with the perforation *a* through the bottom of the casting E and

the longitudinal perforation of the set-screw F, all as shown in Fig. 3.

The casting E is secured to the bracket D by the screw H and is provided in its upper side with the boss E², in a cavity in which is fitted the tube I, having one or more holes *a'* through its wall near the upper side of the casting E, as shown in Fig. 3. The casting E also has fitted to its periphery the thin brass tube J, which, with the casting E, forms the wax-pot.

The rear end of the bracket D is made of considerable thickness and is provided with a transverse steam-passage *b*, (see Fig. 3,) into one end of which is screwed a suitable steam-supply pipe *c*, having the T connection *d* and valve K, and in the opposite end is screwed the discharge-pipe *c'*, provided with the valve K' and T connection *d'*, said T connections *d* and *d'* being connected by the by-pass pipe *e*, as shown in Figs. 1 and 2. The bracket D has a second transverse steam-passage *f* formed therein at one side of the periphery of the casting E, which is connected at one end to the T connection *d'* by the pipe *g* and at its other end by the pipe *h* to a passage *i* through the bracket L and leading to the exhaust or discharge pipe *j*, said passage *i* being shown only in dotted lines in Fig. 2.

The bracket L is mounted upon the bracket D, has set therein the stud *k*, upon which is mounted the tension-wheel M and the spring N, and also carries the lever O, upon one end of which is mounted the thread-guiding sheave *l*, and has connected to its opposite end one end of the spring *m*, the other end of which is connected to the tension-regulating screw *n*, all as shown and described in another application of mine, filed August 23, 1897, Serial No. 649,171.

The bracket D has formed thereon the downwardly-projecting ear *o*, having set therein a stud *o'*, upon which is mounted the thread-guiding sheave *p*, and said bracket has formed therein obliquely above said sheave the opening *r* for the passage of the thread, as shown in Figs. 1 and 2.

The tube I is made of such a length as to project up to or slightly above the top of the wax-pot, as shown.

The operation of my invention is as follows: The wax-pot being charged with a suitable quantity of wax surrounding the tube I, the valves K and K' being opened and steam being admitted to the pipes *c*, *c'*, *g*, and *h*, the thick rear portion of the bracket D and the casting E are heated to a sufficiently high temperature to melt the lower portion of the wax in the pot to a proper consistency to be applied to the thread, while the bulk of the wax in the upper portion of the wax-pot will remain unmelted, owing to the fact that the thin wall of the main body of the wax-pot will not transmit or retain the heat sufficiently to melt the main body of the wax in the upper part of the wax-pot. The thread to be waxed and used in the sewing-machine is drawn from the ball, (not shown, but which may be held in any suitable receptacle or mounted upon a spindle set in a suitable position about the machine,) is carried up outside of the wax-pot and downward through the tube I, through the perforations in the casting E, the thread-stripper G, and the set-screw F, is carried beneath and partially around the sheave *p*, through the hole *r* in the bracket D, around the tension-wheel M, partially around the sheave *l* on the upper end of the lever O, and thence to the stitch-forming mechanism. (Not shown.) When the wax in the lower portion of the wax-pot is melted and brought to a sufficiently liquid state, it will flow through the holes *a'* into the lower portion of the tube I and into contact with the thread *s*, which when the sewing-machine is in operation is drawn downward through said melted wax within said tube and delivered from the lower end of the set-screw F, during which downward movement the surplus wax is stripped from the thread by the stripper G, the completeness or closeness of the stripping being regulated by an adjustment of the set-screw F. When sufficient wax is melted in the bottom of the wax-pot to supply wax to the interior of the lower portion of the tube I, the valves K and K' may be closed, when the steam will be excluded from the passage *b* and made to traverse the by-pass pipe *e*, the pipe *g*, passage *f*, pipe *h*, and passage *i* to the discharge-pipe *j*, which in most cases will supply sufficient heat to maintain the wax at the proper consistency.

Of course the thin cylindrical wall of the wax-pot will be heated to some extent, and although it will not be heated to a sufficiently high temperature to melt the whole body of wax in the upper part of said pot it will melt a thin film of wax in immediate contact therewith, through which thin film of melted wax any water that may be held in suspension in

the body of the melted wax may escape to the top of the wax-pot instead of coming in contact with the thread within the tube I.

By maintaining the bulk of the wax in an unmelted state, as herein described, it is impossible for the wax to boil over the top of the pot.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a waxing device for sewing-machines the combination of a wax-pot comprising a thick cup-like base and a thin cylinder projecting upward from said base; a thread-receiving tube set in said base, within, and projecting upward to or above the top of said thin cylindrical portion of said wax-pot and provided with a lateral opening through its wall near its lower end; and a thread-delivering opening through said base within the lower end of said thread-receiving tube.

2. A wax-pot composed of a thick cup-like base provided with a thread-delivering opening in its bottom and a cylindrical chamber of larger diameter below said opening, and a comparatively thin cylinder secured to said base and projecting upward therefrom; in combination with a thread-guiding tube set in said base within the walls of said wax-pot and projecting upward to the top of said wax-pot and provided near its lower end with a lateral opening communicating with the interior of the wax-pot; a thread-stripper inclosed in the cylindrical chamber beneath said tube, and a longitudinally-perforated set-screw set in the lower end of said chamber and adjustable to regulate the operation of said stripper.

3. The combination in a waxing device for sewing-machines of the bracket D provided with the steam-passages *b* and *f*; means substantially as set forth for supplying steam to one or both of said passages at the will of the operator; the wax-pot comprising the thick or heavy cup-like base E provided with the tubular hub E', and the thread-delivering perforation *a* in its bottom; and the comparatively thin cylindrical body J; the tube I set in said base above the opening *a* and provided with a lateral opening near its lower end; the stripper G; and the longitudinally-perforated set-screw F.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 6th day of November, A. D. 1897.

JOSEPH E. BERTRAND.

Witnesses:

N. C. LOMBARD,
W. E. DAVIS.