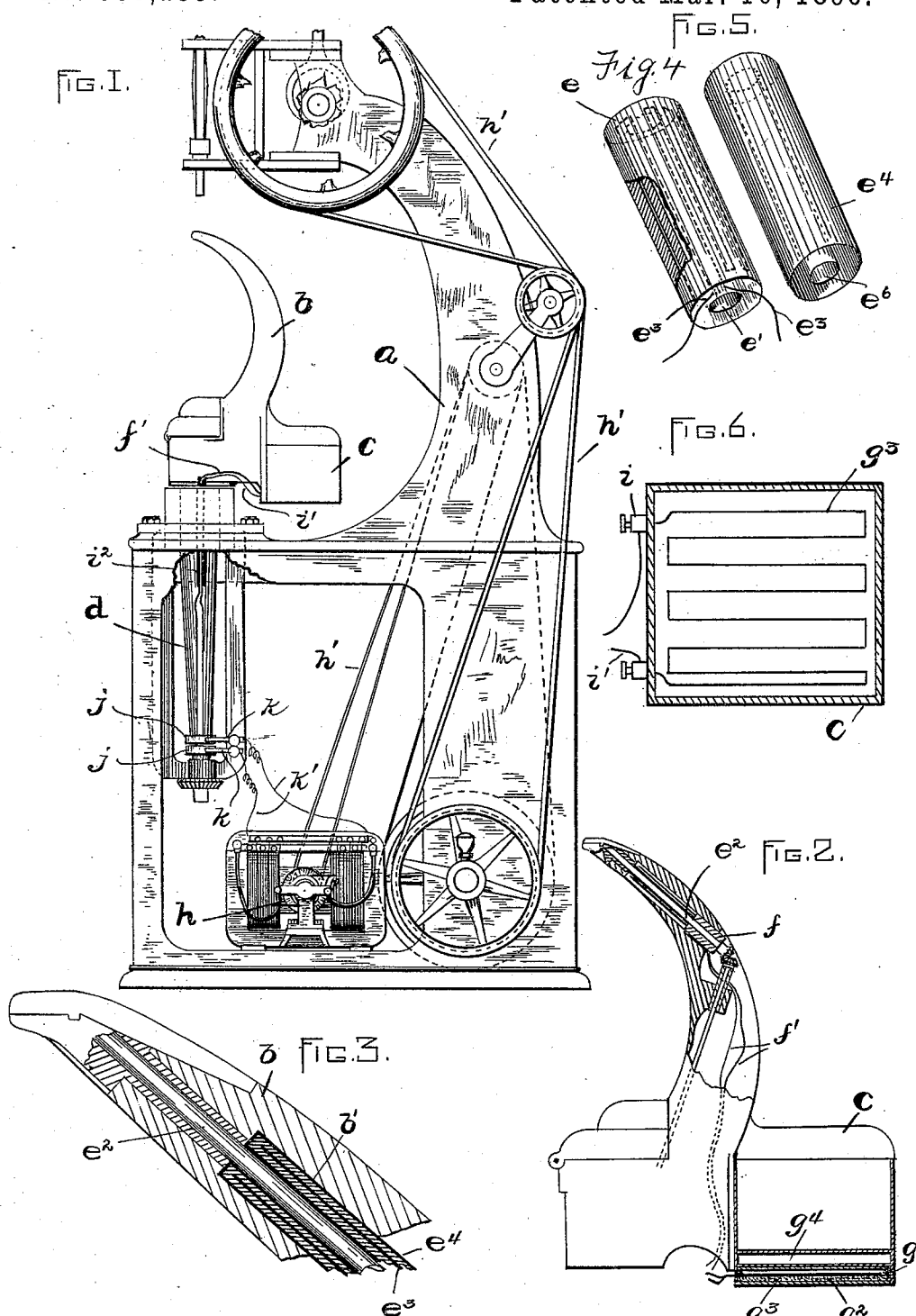


(No Model.)

G. R. PEARE.
SHOE SEWING MACHINE.

No. 556,159.

Patented Mar. 10, 1896.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GEORGE R. PEARE, OF LYNN, ASSIGNOR TO THE STEAM-HEATED HORN COMPANY, OF BOSTON, MASSACHUSETTS.

SHOE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 556,159, dated March 10, 1896.

Application filed February 17, 1893. Serial No. 462,797. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. PEARE, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Electrical Heaters for Shoe-Sewing Machines, of which the following is a specification.

The object of this invention is to provide means whereby electricity may be employed for heating the horn of a shoe-sewing machine, and also the wax-pot which contains the wax to be used on the threads.

I have chosen to illustrate the invention as applied to a machine of the well-known McKay type; but it will be evident that it is capable of application to many other forms of machines.

Of the accompanying drawings, which illustrate a construction by which the invention may be carried out, Figure 1 shows an elevation of a shoe-sewing machine of the McKay type to which my invention is applied, portions of the machine being broken away to illustrate interior constructions. Fig. 2 shows a partial sectional and side elevation of the horn and wax-pot, the parts appearing on a larger scale than in Fig. 1. Fig. 3 shows a sectional view of the end portion of the horn on a larger scale. Fig. 4 shows a perspective view of the electrical heater for heating the horn, partially broken away at one side. Fig. 5 shows a perspective view of a metallic jacket which is fitted over the heater. Fig. 6 shows a horizontal sectional view of the bottom portion of the wax-pot, showing the electrical heater therein.

The same letters of reference indicate the same parts in all the figures.

In the drawings, the reference-letter *a* designates the frame of a McKay machine; *b*, a rotary horn; *c*, a wax-pot attached to or formed with said horn, and *d* a rotary spindle on which the horn and wax-pot are mounted.

The horn *b* is formed with a cylindrical bore *b'*, which receives a core *e*, which may be formed of any suitable heat-conducting and insulating material—such as porcelain, for instance—and has a central longitudinal passage *e'*, occupied by the whirl-spindle *e²*. An electrical conductor *e³* is carried in a series of return-bends through the body of the core *e*,

and this conductor will be of material, such as platinum, affording sufficient resistance to the passage of the electric current to produce a considerable quantity of heat. A cylindrical jacket *e⁴*, preferably formed of metal and closed at one end, fits over the core *e* and is provided with a central tube *e⁶*, which engages the passage *e'* of said core. The core and jacket will be fitted in the horn, as shown in Fig. 3, and confined therein by a plug *f*, having provision for the passage of the electrical connecting-wires *f'*, which are joined respectively with the ends of the conductor *e³*. When an electric current is passed through the said conductor *e³*, sufficient heat will be generated in the core to properly heat the horn *b* and maintain it at the desired temperature.

The wax-pot *c* is formed with a chamber *g* under its bottom, in which is a bed *g²* of insulating material. A conductor *g³*, of platinum or other suitable material offering a resistance to the passage of an electric current, is passed in return-bends over the bed of insulation *g²*. When an electric current is passed through the conductor *g³*, the heat generated therein is all radiated upward to heat the wax in the pot, the bed of insulation *g²* preventing wasting of the heat by radiating downward. A water-chamber *g⁴* will preferably be provided between the wax-pot and the heat-chamber *g*. By keeping said chamber *g⁴* filled with water the wax in the pot will be prevented from burning.

The two heaters will be suitably connected with some source of electricity, and proper provision will be made for cutting them in and out.

It will be seen that with such an arrangement the heating of the horn and wax-pot may be easily controlled and the horn and wax-pot kept at the proper heat without detriment to the threads which pass through the horn.

In the present instance I have shown as a means of supplying an electric current to the heaters a dynamo *h*, which is connected with a rotary part of the machine—as, for instance, by belting *h'*, as shown in the drawings. The opposite poles of the dynamo will be suitably connected with the heaters. The horn and wax-pot being rotary parts, a sliding connec-

nection of some kind is necessary between the heaters and the dynamo or other source of electricity. I have provided for this by the construction illustrated in the drawings, which will now be described, it being understood that other means might be employed to accomplish the same result. One of the conducting-wires f' is connected by means of a binding-post i with one end of the wax-pot-heating conductor g^3 , while another conducting-wire i' is connected with the opposite end of said conductor g^3 . The other wire f' and the wire i' are carried down alongside the spindle d through suitable insulation i^2 , and are connected, respectively, with two collars j formed on said spindle and suitably separated by insulation. A pair of electrodes k are secured to the frame of the machine and bear with sliding contact on the two collars j , respectively. These electrodes are connected by conducting-wires k' with the poles of the dynamo h . It will now be seen that as the horn rotates with its spindle b the electrical connection from the dynamo to the heaters is not in any way disturbed, as the electrodes k remain in contact with the collars j .

It is evident that a battery-current may be employed instead of a dynamo, or that the heaters might be supplied from any suitable source of electricity. I do not, therefore, confine myself to the means here shown for supplying the heaters with an electric current, or to the construction of the heaters, as this might be varied in many ways.

The core e with its resistance-conductor e^3 constitutes distinctly a heat-generating device in the sense that heat is generated therein and is not communicated thereto, as in the case of steam or hot-air pipes. This heat-generating device is located within the horn and is adapted to impart heat only to that part of the machine requiring it; and the said heat-generating device being once located in

the horn need not be removed, nor need the machine be stopped in order to supply the device with fuel, as would be the case with a lamp located in the horn.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A shoe-sewing machine comprising in its construction a horn supported on a rotatable spindle which carries a pair of collars insulated from each other, a heat-generating device located in said horn and consisting of an electrical heater, conductors leading from the said heater and connected respectively with the collars on the spindle, and electrodes having sliding contact with said collars and connected with opposite poles of an electrical generator.

2. In a shoe-sewing machine, a horn having an inclosed bore or cavity extending in the direction of its length, an electrical heater in the form of a core which occupies said inclosed cavity and is provided with a longitudinal passage for the whirl-spindle, and the whirl-spindle extending through said core-heater.

3. In a shoe-sewing machine, a horn having an inclosed bore or cavity extending in the direction of its length, an electrical heater in the form of a core which occupies said inclosed cavity and is provided with a longitudinal passage, the whirl-spindle extending through said core-heater, and a metallic casing extending over the core and the sides of the longitudinal passage therein.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 10th day of February, A. D. 1893.

GEO. R. PEARE.

Witnesses:

C. F. BROWN,
PARKER DAVIS.