(No Model.)

S. SPOOR.

FOOT WARMER.

No. 251,143. Patented Dec. 20, 1881.

Fig. 1.

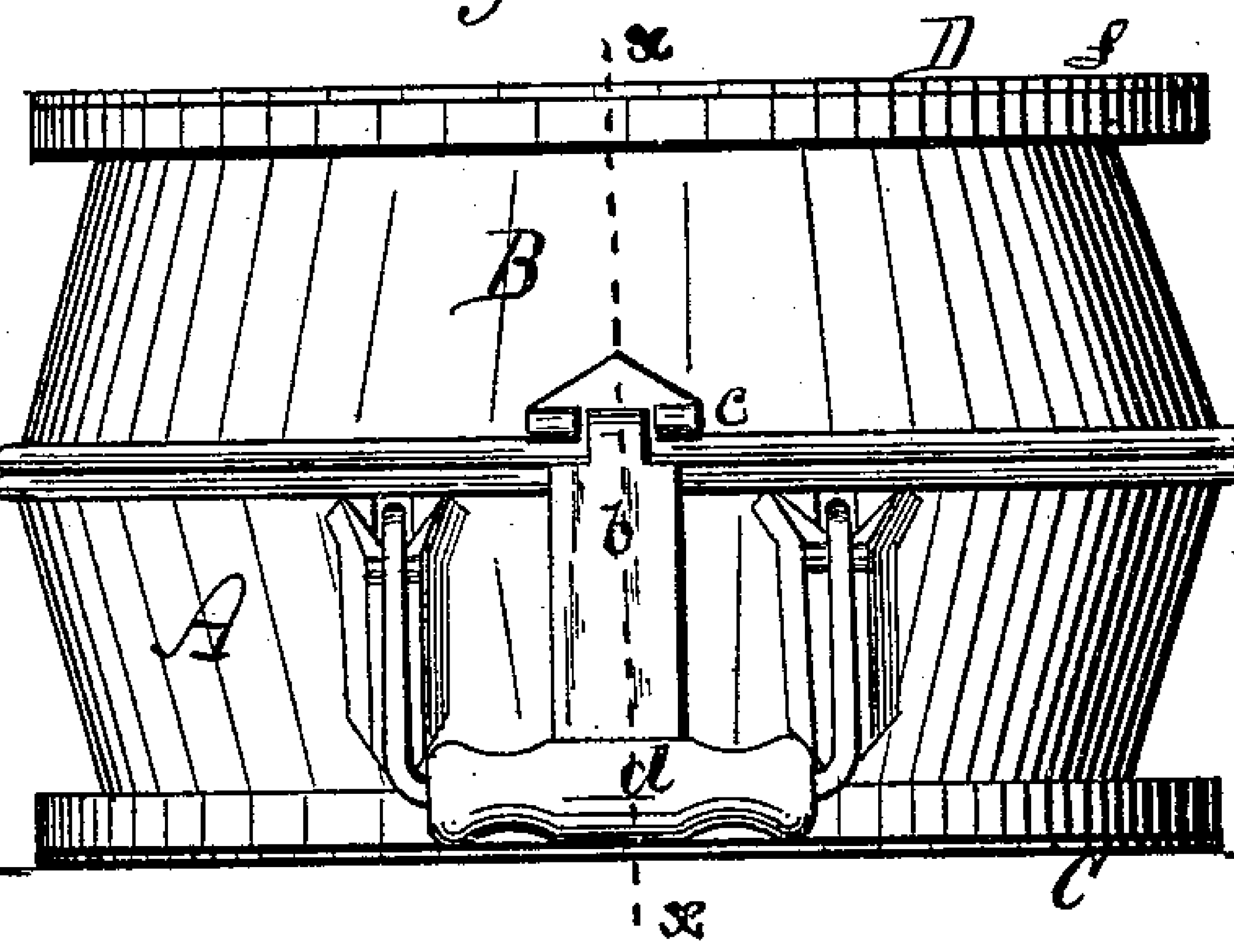


Fig. 2.

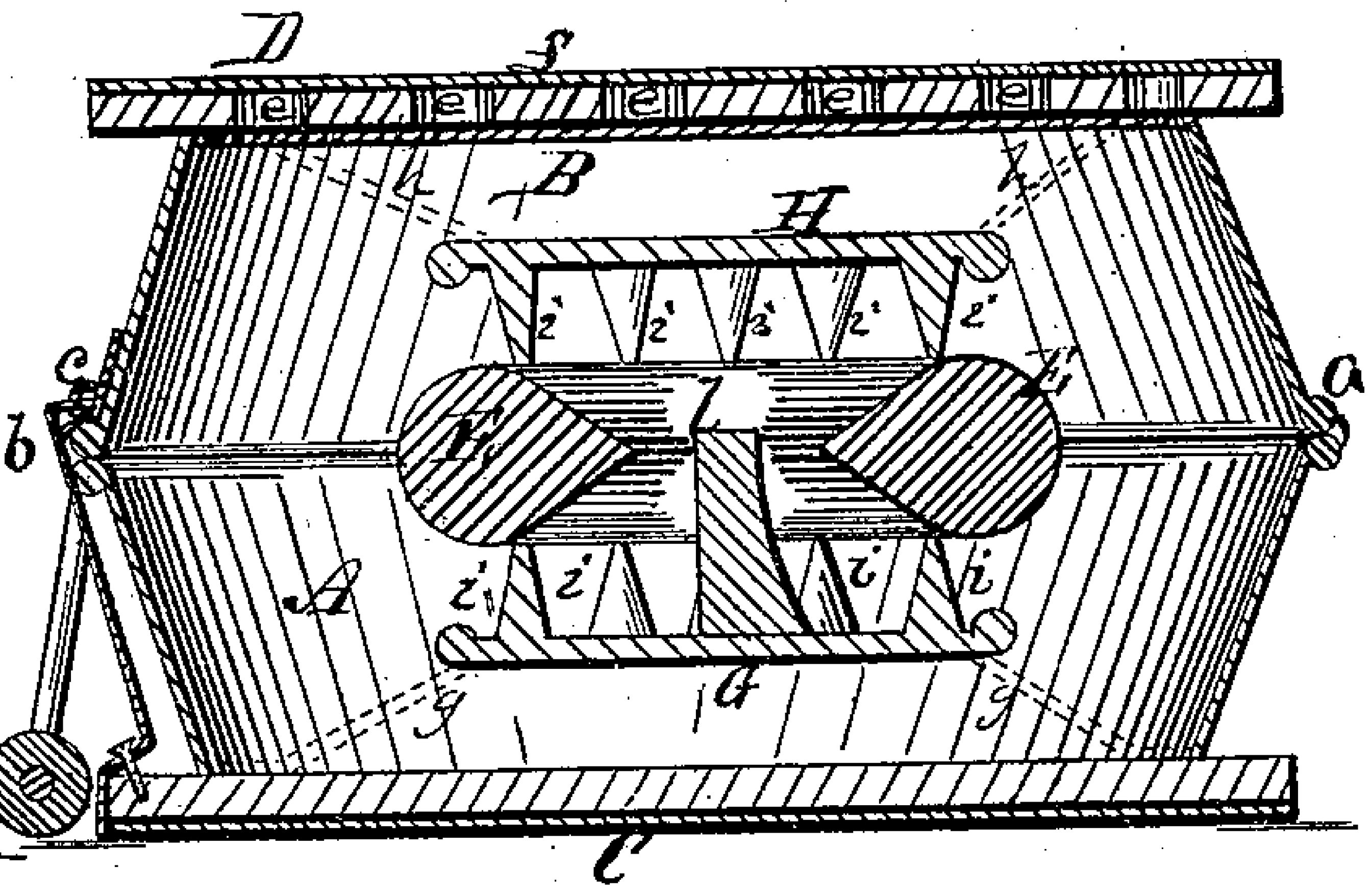


Fig. 3.

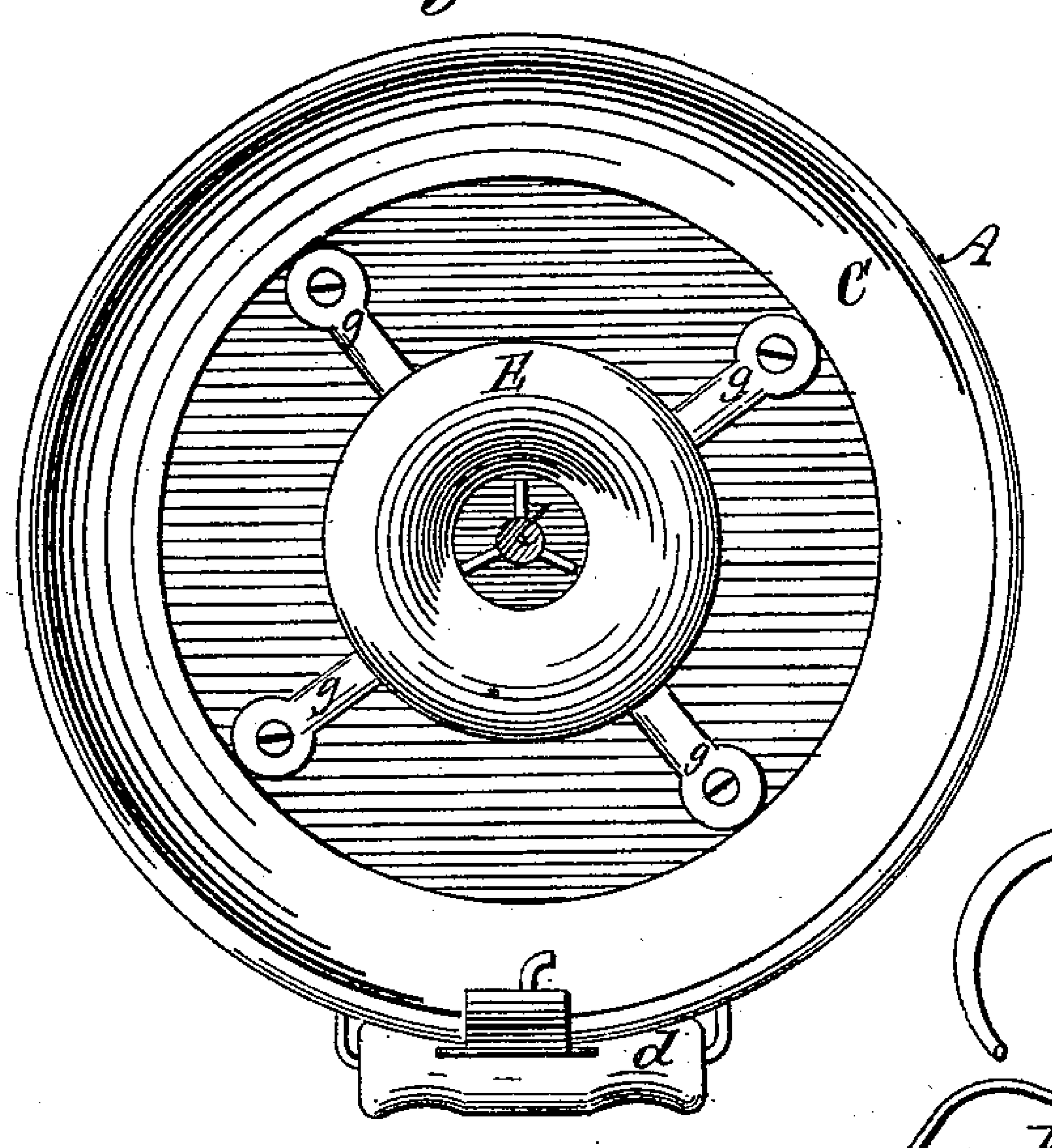
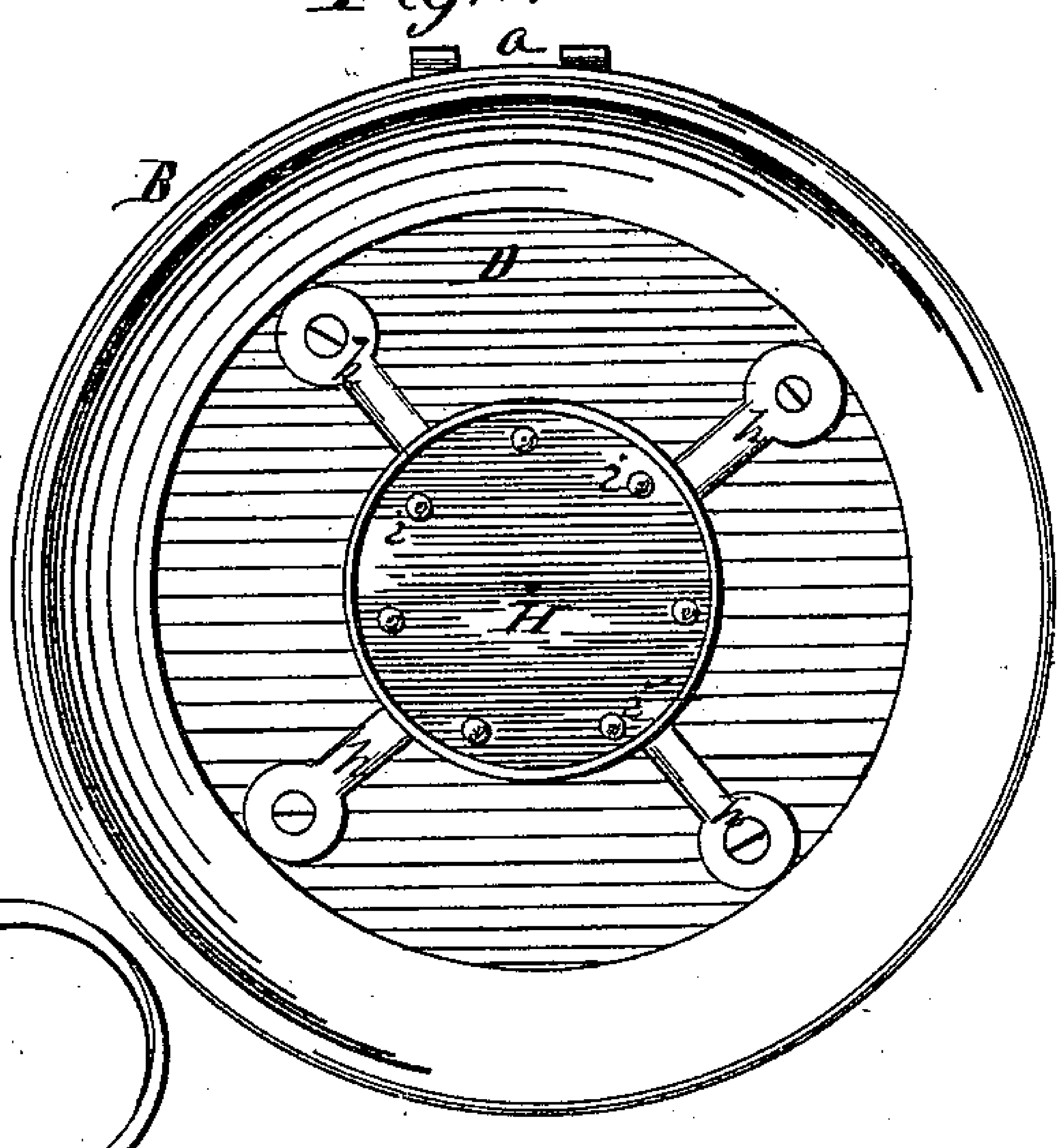


Fig. 4.



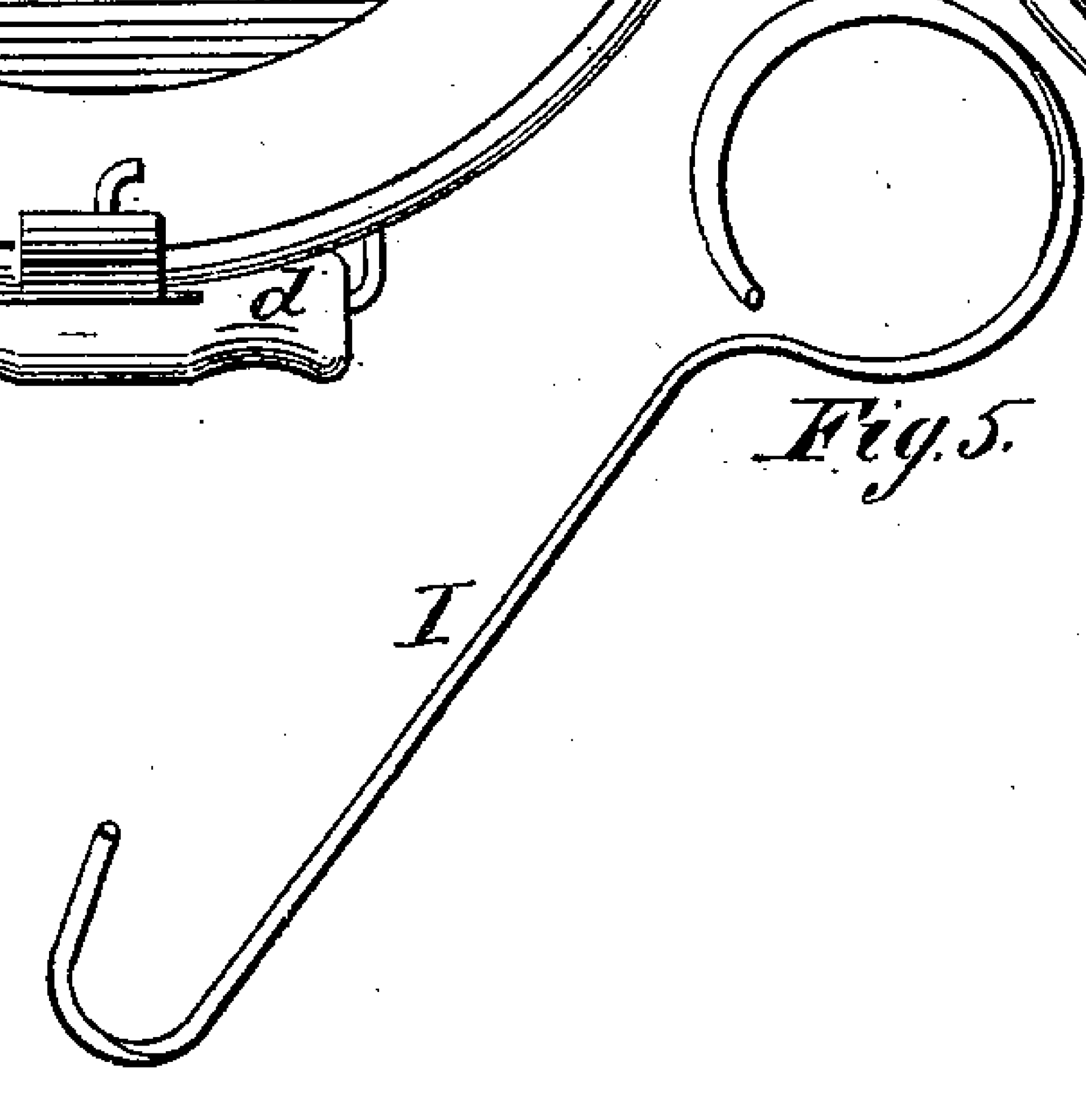


Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

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FOOT-WARMER.

SPECIFICATION forming part of Letters Patent No. 251,143, dated December 20, 1881.

Application filed April 14, 1881. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN SPOOR, of Troy, in the county of Rensselaer and State of New York, have invented an Improved Foot-Warmer; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a front view of the foot-warmer; Fig. 2, a central vertical section of the same in a plane indicated by the line *x x*, Fig. 1; Fig. 3, a plan of the lower half of the same; Fig. 4, a plan looking upward of the upper half thereof; Fig. 5, a view of an instrument for handling the heating-ring.

Like letters designate corresponding parts in all of the figures.

The purpose of this invention is to produce a foot-warmer which shall be available and convenient for use in various ways and on various occasions, which shall be perfectly portable, and which shall never become overheated while retaining its heat for a long time.

The general construction of the foot-warmer which I have adopted comprises a body composed of two shallow vessels or pans, A B, the former ordinarily serving as the base or main part, and the latter as the cover, a base-board or bottom, C, and a top or resting board, D. The two parts A B are hinged together, at *a*, on one side, and held together on the opposite side by a catch, *b*, and catch hook or holder *c*. A handle or bail, *d*, at the catch side serves to lift and carry the whole foot-warmer by. The form of the vessels or pans may be as shown, or any other suitable or desired, and the two may have the same form and size as shown, and shut together at the open and equal adjacent edges. These being, say, made of sheet metal give out heat readily; but by making the base-board C of wood and of sufficient thickness very little of the heat is given out through it, and it is not downward where it is generally required to communicate heat. On the contrary, it is through the top D where most of the heat from the interior of the foot-warmer is wanted. Therefore, though I may make a wooden top, to which also a thickness, *f*, of carpeting is proper to be added, I make sufficient holes *e e* through the said top for the heat from within to gradually find its way through for keeping the feet warm when placed upon the top of the warmer. The sheet-metal top of the vessel B needs not to be perforated, since it transmits heat fast enough for the purpose of the foot-warmer.

The most important feature of my invention consists in the means by which I isolate the hot ring, or equivalent heater, E, from the surrounding body or vessels, so that, however hot the said heater may be, no more heat will be given out from any part of the surface of the said body than may be desired for use in warming, and never so much as to burn anything with which it may come in contact. The ring form of the heater is the most convenient known to me, both for handling and for holding in the warmer; but I do not restrict myself to any special shape. I hold this heater by means of two brackets or spiders, G H, the former attached by three or four feet, *g g*, to the bottom of the base or vessel A, and the latter similarly attached by feet *h h* to the top of the cover or vessel B. The contact of these feet with the said bottom and top is as small as is consistent with sufficient strength, and the bodies of the spiders are separated some distance therefrom. Moreover, it is best to make the inner surfaces of the body, or inclosing-vessels, of bright tin-plate; or they may otherwise be made to reflect back the heat radiating from the heater.

By the above described construction comparatively little heat is given out, and quite gradually, and never enough to overheat the warmer. To further control the emission of heat from the heater, the bodies of the spiders are made solid, and present at least as much surface opposite the bottom and top of the heater as that contains, so as to cut off direct radiation from the heater; and still further to retard the cooling of the heater it is held between the spiders by contact only with mere points or slender fingers *i i*, projecting therefrom, so that there is slender means afforded for the conduction of heat from the heater. The fingers *i i* are arranged to partially embrace the surface of the heater, and thus to securely hold it centrally in the warmer. To secure it against displacement and to hold it

centrally in position on the supporting-spider G, the heater is made of a ring form, or with a hole in its center, and is made to fit around a central stud or upward projection, *l*, on the spider. This stud is made of radial wings, as shown, so as to present as little surface as may be to the ring. This ring may be made of cast-iron of sufficient weight to retain as much heat as desired, and as it is readily removable for the purpose of heating it, several rings of different sizes may be employed for different uses. For handling the ring a hook, I, Fig. 5, may be used, to be kept inside of the warmer when not in use.

This foot-warmer is very convenient for various purposes. Thus, it may be used on the floor as a foot-stool, keeping the feet warm. As it is readily carried about by its handle, and can be carried in any position, it is equally available for carrying in a sleigh or carriage to keep the feet warm. It also is just as convenient for warming beds in cold rooms for invalids and others, and it may be used at the feet in bed. In short, it may be employed in any place and on all occasions where and when it is desired to add warmth to any part of the body. A comparatively small heater inside is capable of giving out a good deal of heat, and it will continue to do so for a long time, for it may in any case be heated to a dull cherry-red and put in the warmer thus highly heated without overheating the warmer. The whole warmer may therefore be quite light.

The catch *b* is constructed to hold inward, so that no accidental blow or violence will have a tendency to release it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a foot-warmer, a heater, E, held within a case or body, A B, substantially isolated from heat-contact therewith, and having heat-radiation intercepters G H, which also are substantially isolated from heat-contact with the body or case, substantially as and for the purpose herein specified.

2. In a foot-warmer, a heater, E, held centrally within and apart from the inclosing case or body by isolating brackets or spiders G H, substantially as and for the purpose herein specified.

3. The ring-heater E, in combination with the sustaining-spider G, having a central flanged stud, *l*, substantially as and for the purpose herein specified.

4. A foot-warmer composed of two vessels or pans, A B, shutting together, a base, C, and top D, and a heater, E, held between and by the pans in a central position and out of contact therewith, substantially as and for the purpose herein specified.

5. The perforated heat-transmitting top D, in combination with the upper pan or cover, B, substantially as herein specified.

The foregoing specification signed by me this 5th day of March, 1881.

STEPHEN SPOOR.

Witnesses:
THOMAS R. JONES,
H. S. MCLEOD.