(No Model.)

J. R. DAVIS.

ELECTRIC HEATING RUG.

No. 543,800. Patented July 30, 1895.

Fig. 1.

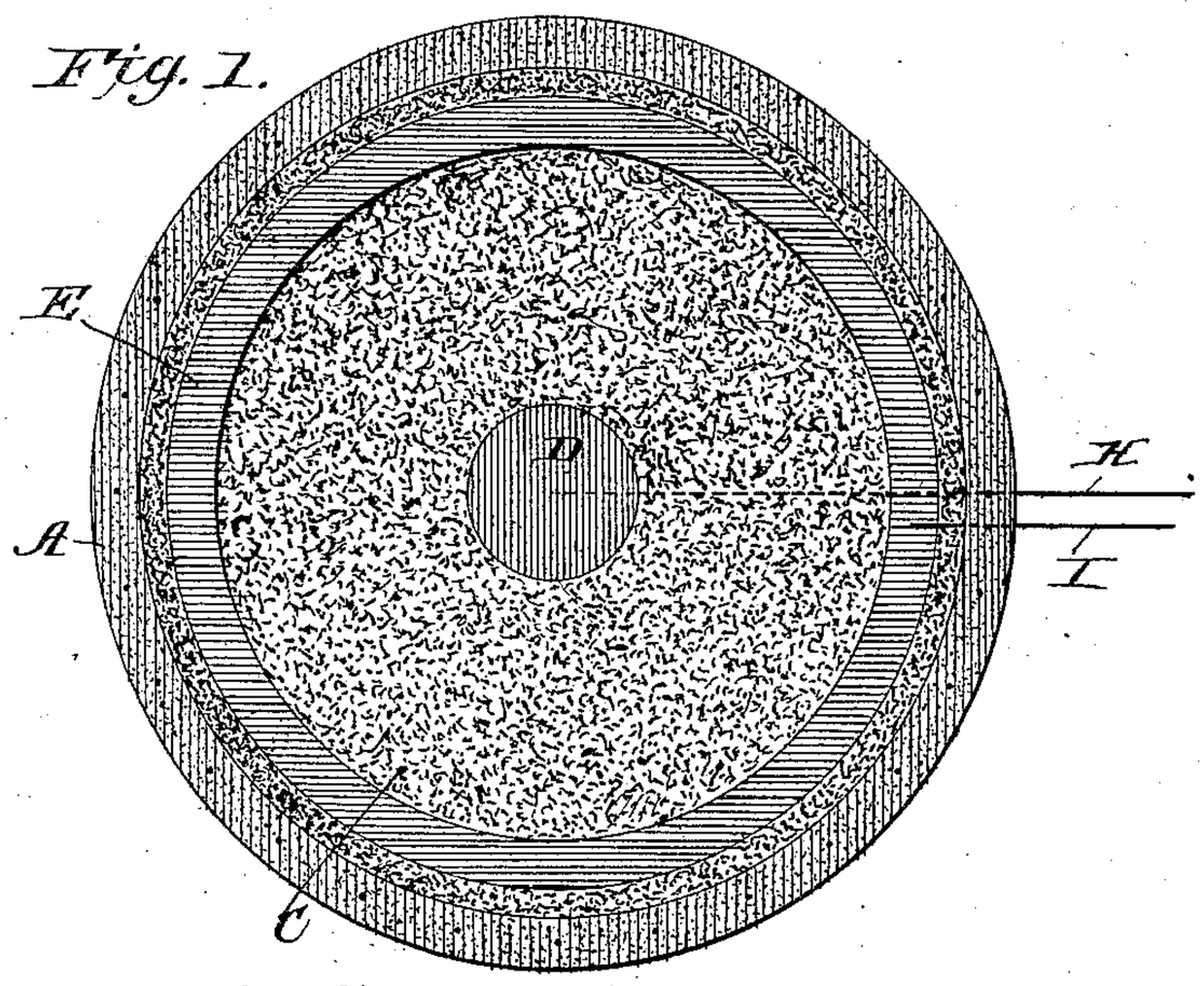
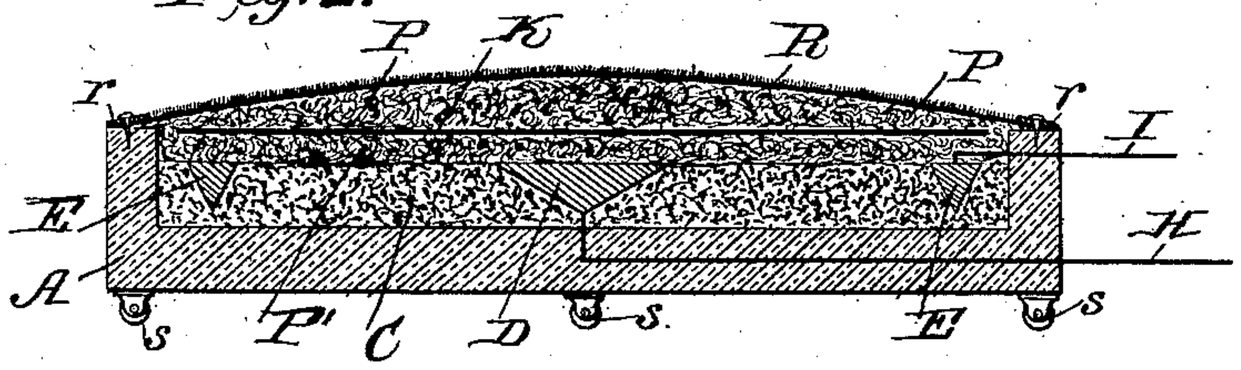


Fig. 2.



WITNESSES.

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INVENTOR

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UNITED STATES PATENT OFFICE.

JESSE R. DAVIS, OF PARKERSBURG, WEST VIRGINIA, ASSIGNOR OF ONE-THIRD TO CHARLES A. WADE, OF SAME PLACE.

ELECTRIC HEATING-RUG.

SPECIFICATION forming part of Letters Patent No. 543,800, dated July 30, 1895.

Application filed July 11, 1894. Serial No. 517,225. (No model.)

To all whom it may concern:

Be it known that I, JESSE R. DAVIS, of Parkersburg, in the county of Wood and State of West Virginia, have invented a new and useful Improvement in Electric Heating-Rugs, of which the following is a specification.

My invention is in the nature of an electric rug for heating or warming the feet, for use in private residences or under the desks in offices, for the floors of street-cars, for stalls in the market, the floors of carriages, or any other application where a stove is inconvenient or impracticable and yet there is great need for some means for keeping the feet warm.

My invention consists of a flat rug designed to lie upon the floor and having a surface of carpet or other textile, or without such surface, if desired, and combining in its internal structure an electrical heating medium and two electrodes of special form and arrangement, and also a distributing and protecting plate, and with means for insulating the current and retaining the heat as it is transformed from electrical energy by the resistance of the heating medium, as will be hereinafter more fully described.

Figure 1 is a plan view of the rug with the upper portion removed. Fig. 2 is a vertical central section.

A is the outer case of the rug, which may be made of wood, canvas covered with asbestos, composite woody-fiber of non-conducting quality, papier-maché, leather-board, leather, hard rubber, or even of porcelain, slate, fire-clay, tile, or enameled sheet metal. As shown, the case is round and shallow, with a raised flange around its circular edge to retain the heating medium. The rug may, however, be made of any desired shape. The case is about two and one-half inches deep and is filled with a heating material C, which is preferably a composite mixture of powdered plumbago and any inert and refractory material, such as fire-clay, lime, or any powdered material that is both a non-conductor of electricity and a non-conducting and heat-resisting material. The proportions in which the electrically-conductive plumbago is mixed with the inert and refractory material determines the amount of heat which the rug is capable of transforming from the current. The greater the proportion of plumbago the higher the degree of heat that will be obtained. For ordinary uses from ten to about thirty-eight per cent. of plumbago would be used and the balance be of refractory material.

E is one of the electrodes, which is made ring-shaped and of a triangular cross-section. This ring is embedded in the heating medium, near the outer edge of the same, with one of its flat sides at the top and a sharp edge penetrating downwardly with the heating medium. D is the other electrode, which is constructed as a conical plate, with its flat base at the top and its apex penetrating downwardly into the heating medium. The object in making the electrodes of this shape is to cause them to penetrate the heating medium with a tight-wedging action from the pressure of the feet on the top of the rug, so as to always insure an intimate electrical contact between the electrodes and the heating medium. The electrode D should be exactly in the center of the ring-shaped electrodes E in order to preserve a uniform radial distribution of the current through the heating medium, it being obvious that if the electrodes were not concentric the bulk of the current would pass between their sides which most closely approach, which would result in a lack of uniformity in the heat and an excessive heating between the nearest points of the electrodes.

H and I are the insulated wires which carry the current to the two electrodes.

K is a thin sheet of metal extending over the top of both electrodes and having a layer P of mineral wool, asbestos, or other non-conductor above it and another similar layer P′ below it to prevent metallic connection between the electrodes. This sheet-metal plate K protects the heating medium and electrodes when walking upon the rug, thus avoiding the disintegrating of the heating medium and displacement of the electrodes. This plate K also acts as a distributer of the heat, causing the upper surface of the rug to be uniformly warm.

Over the padding P, of mineral wool or asbestos, is an outside covering R, of Brussels carpet or any other fabric or material, which is fastened around the edges with an orna-

mental nickel-plated rim *r*, secured by nails, screws, or bolts to the flange of the outer casing. To facilitate the moving of the rug from place to place rollers or casters *s* are secured to its bottom side.

This invention will prove a great relief to old persons, invalids, and others suffering with cold feet or rheumatism.

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

1. An electric heating rug, comprising a flat layer of electric heating medium of amorphous resisting material, a ring-shaped electrode of triangular cross section having its flat face uppermost, a second electrode of conical shape arranged with its base uppermost and in concentric relation to the ring, both being arranged in the same plane in the heating medium, and an insulating casing with flexible covering, substantially as and for the purpose described.

2. An electric heater comprising a casing containing a resistance material, two electrodes arranged concentrically therein, and a metallic distributing plate extending entirely across both electrodes and properly insulated therefrom substantially as shown and described.

JESSE R. DAVIS.

Witnesses:
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J. H. KNAPP.