F. J. COOK.

ELECTRICAL HEATER.

APPLICATION FILED JULY 21, 1913.

1,134,995. Patented Apr. 13, 1915.

Fig. 1

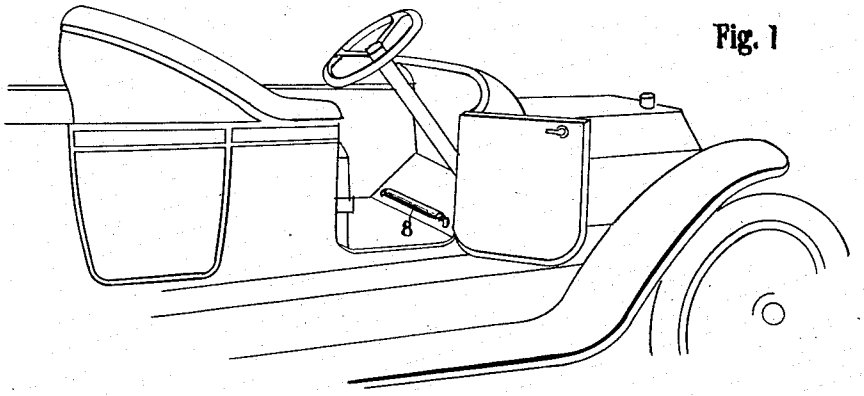


Fig. 2

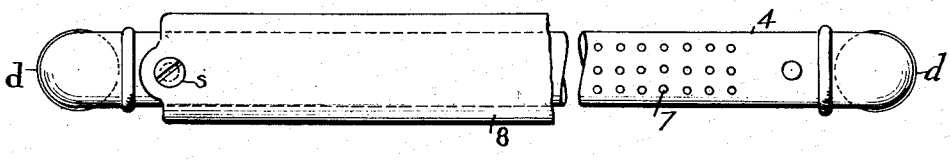


Fig. 3

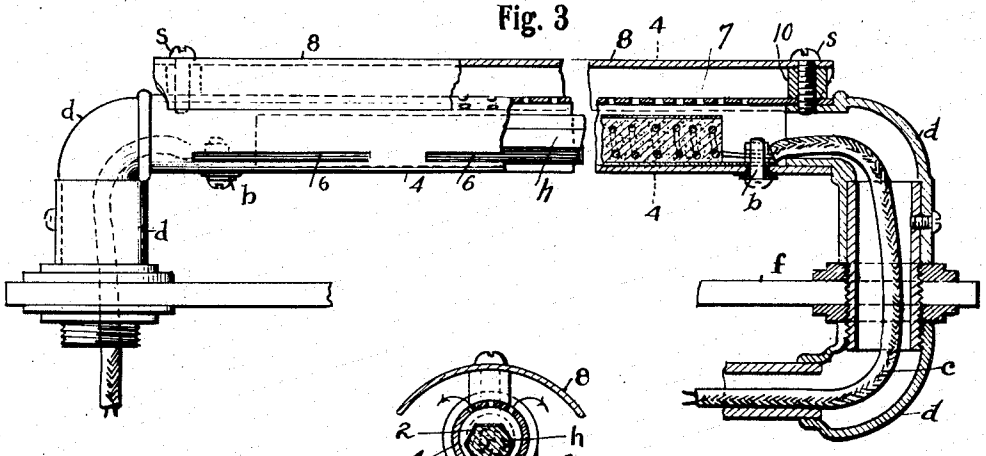
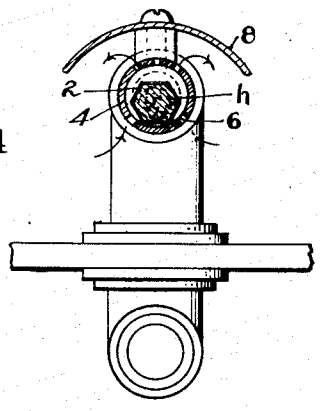


Fig. 4



ATTEST

E. M. Fisher

F. C. Mussun

INVENTOR

FRANK J. COOK

BY Fisher & Mour ATTYS.

UNITED STATES PATENT OFFICE.

FRANK J. COOK, OF CLEVELAND, OHIO, ASSIGNOR TO THE KONSRV ELECTRIC COMPANY, OF CLEVELAND, OHIO.

ELECTRICAL HEATER.

1,134,995. Specification of Letters Patent. Patented Apr. 13, 1915.

Application filed July 21, 1913. Serial No. 780,203.

To all whom it may concern:

Be it known that I, FRANK J. COOK, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Electrical Heaters, of which the following is a specification.

This application relates to electrical heaters, and the invention consists in a heater adapted especially to power driven machines carrying the requisite equipment and serving as a foot rest and warmer or heater, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a portion of an automobile body equipped with one of my new and improved heaters. Fig. 2 is a plan view of the heater alone and enlarged as compared with Fig. 1, and showing also a portion of the immediate support or shield thereon, the parts being broken away at the middle. Fig. 3 is a side elevation of the heater and the coupling connections at its ends and also broken away at the middle and showing a portion of the foot rest or shield thereon. Fig. 4 is a cross section on line 4—4, Fig. 3.

The heater as thus shown is especially intended for power driven machines or cars having an electrical installation of sufficient current to sustain heat in the heating element, whether the car be of the electrical or explosive or other type. In fact the heater might have other uses than such as would limit it to a car or vehicle without departing from the spirit and scope of the invention. It is, however, of especial utility in a car when secured to the floor at the front of the seat as it serves both as a foot rest and heater in this relation and position.

Now, referring to Figs. 3 and 4, especially, it will be seen that the heating element *h* is shown as of hexagonal shape in cross section and as having the electrical coil or resistance wire embedded therein and said element consists of a composite or composition comprising powdered soapstone and gypsum or plaster of Paris mixed in suitable proportions or such as will give it the requisite stability and consistency, and connections are made with said wire by the cables *c*. The shaping of the element with a series of flat sides is material because it enables said sides to be overlaid with a non-conducting substance, as strips 2 of mica, which adhere to the body of the heater and serve as insulation and as means to strengthen and uphold the composition. The said conducting cables *c* are shown as inclosed in or threaded through suitable couplings and tubes *d* at the ends of the tube or pipe 4 which carries the said heater and which are sleeved within or upon the ends of the said inclosing tube or pipe. The said heater is supported upon the bottom of said tube without other insulation, in this instance, than the mica strips on the side of the heater, but of course insulation could be provided if found necessary. The elbows *d* of the said coupling are removably secured in the tube 4 by the set screws *s*, which also support the guard, shield or rest 8, and the said tube has a series of perforations or slots 6 along its bottom for the inflow of fresh air and slots or perforations 7 in its top for the escape of heated air, so that a free circulation of air through said pipe or tube is afforded. I might of course regard the tube 4 as thus constructed a sufficient and suitable rest for the feet, but since the air outlet openings in its top are deemed essential and the placing of the feet thereon would inevitably lead to the accummulation of dirt in the said pipe or tube, even with the relatively larger openings or slots 6 in the bottom to clear the tube, I have affixed a combined rest and guard or shield 8 upon the said pipe, as seen especially in Fig. 4. To these ends, also, the said guard is curved or convex in cross section and has sufficient width to extend laterally on both sides beyond the pipe 4 so as to come into effective shielding relation thereto and the screws *s* at each end serve also to fasten said guard and rest in place. Suitable sleeves or spools 10 are employed between said guard and tube to afford supports for the guard. The device as a whole constitutes an article of manufacture and sale, and as such is variously attachable as well as separable into parts. The said cables *c* in addition to carrying the wire connections for the wire coil of the heater are affixed to the bottom of the supporting tube 4 by screws or bolts *b*, Fig. 3, so that any pull on the cables will

come on the said bolts and not upon the terminals of the heater. As shown herein the elbow couplings *d* and the cables therein are extended beneath the floor *f* of the car.

The heater *h* is a composite made up of suitably refined or pulverized soap stone having a proportion of gypsum or plaster of Paris, or its equivalent as a binder, incorporated therewith so as to make a solid embodiment which will not break down nor crumble under any conditions of service.

If no top perforations were used in the tube 4 the shield or guard 8 might possibly be omitted as the said tube is considerably larger in cross section than the heater and the imparted heat would not ordinarily make the tube so hot as to burn the shoe. However, the said shield or guard is deemed essential as a portion of the invention.

What I claim is:

An electrical heater adapted to be used in a vehicle to warm the feet of the driver having a resistance coil embedded lengthwise through its center in a nonconducting material and having a series of flat sides lengthwise covered with a suitable insulation, and a tube of greater cross section than said heater carrying the same in the bottom thereof and spaced therefrom over its top and conducting cables connected with the ends of said heater and separably secured to said tube.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK J. COOK.

Witnesses:
E. M. FISHER,
F. C. MUSSUN.