

(No Model.)

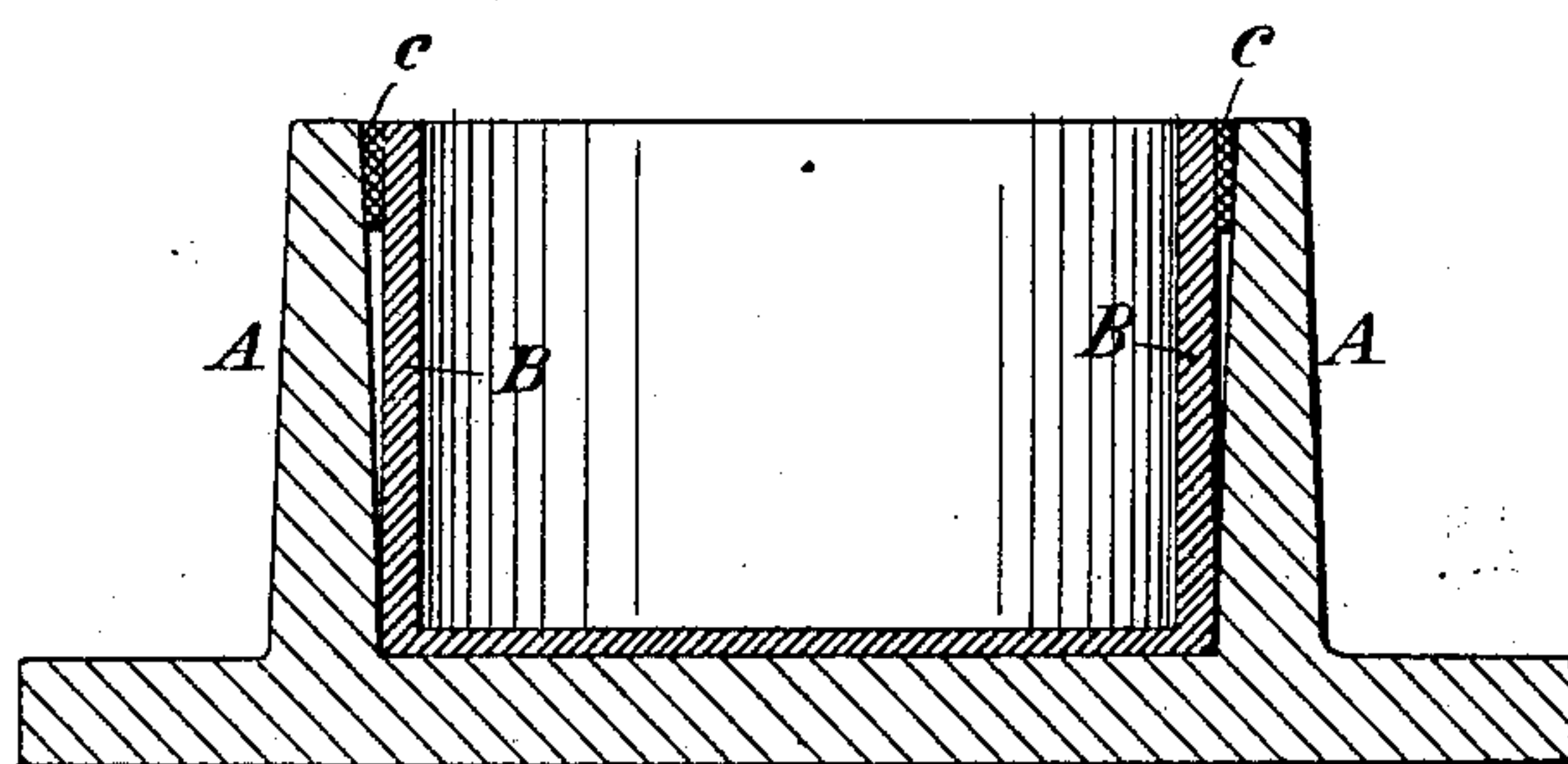
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JUNCTION BOX AND MODE OF LINING SAME.

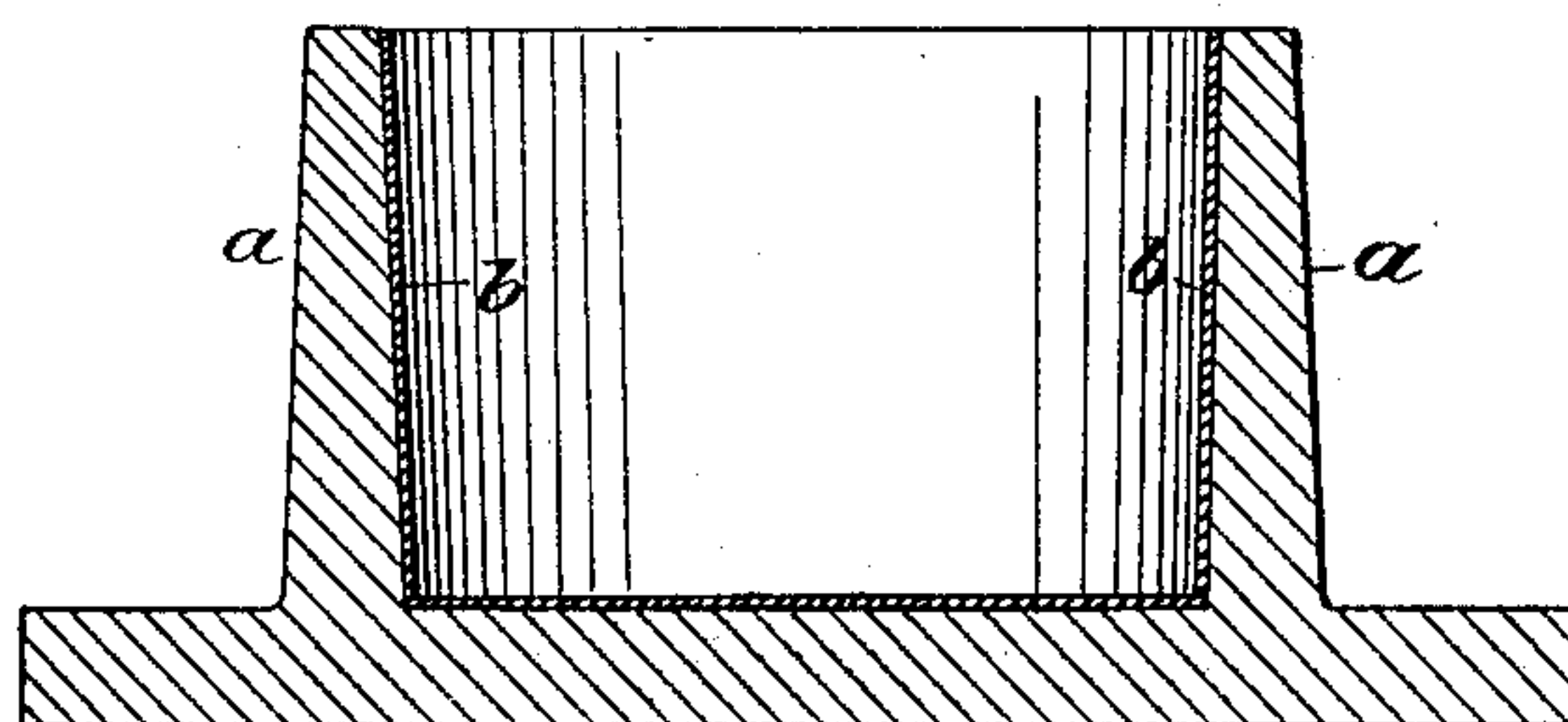
No. 548,660.

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*Fig. 1*



*Fig. 2*



*Witnesses:*

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# UNITED STATES PATENT OFFICE.

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## JUNCTION-BOX AND MODE OF LINING SAME.

SPECIFICATION forming part of Letters Patent No. 548,660, dated October 29, 1895.

Application filed February 26, 1895. Serial No. 539,792. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM T. RUETE, a citizen of the United States, and a resident of the city of New York, in the State of New York, have invented a new and useful Improvement in Junction-Boxes and Mode of Lining the Same, of which the following is a full and accurate description.

The present invention relates specially to the construction of the junction-boxes that are used in making connections between the conductors in electrical plants.

The ordinary form of junction-box is shown in section in Figure 1 of the accompanying drawings, in which A is the metal casting of the box, and B is the lining. The casting is made slightly flaring on the inside to facilitate drawing from the mold. The lining is for the purpose of insulating the interior of the casting, and it consists of a paper box dipped in some insulating material—such as paraffine, shellac, asphaltum, or coal-tar—and then cured and inserted in the casting. To accommodate this lining-box to its flaring seat, it must be made somewhat tapering or else be provided with reinforcing-rings *c c* around its outer edge. After the casting has been lined the necessary holes are tapped through the sides to receive the wires. One disadvantage in this mode of lining the junction-box is that the paper-box lining must be made much heavier than is necessary for the insulation required. This is necessary in order that the box-lining may be stiff enough to stand up during the process of dipping and curing. Besides the cost of the extra material thus consumed, it fills a correspondingly greater portion of the space within the casting, thus requiring that for a given clear space the casting be made larger than would be necessary if the lining were no thicker than is required for insulation alone.

The present invention involves a far less expensive mode of lining the junction-box. It consists in first lining the interior of the box with raw paper or other flexible fibrous or insulating material (for which purpose sheets of any desired thinness may be used) and then dipping the box thus lined in the bath of shellac or coal-tar, asphaltum, or other hydrocarbon compound. In doing this a disk of paper (if paper be used) may be pasted in the

bottom of the casting, and then a strip of paper pasted around its circular walls; or the vertical walls being first covered a disk of paper may then be forced down to cover the bottom. A convenient way of manipulating the paper for covering the vertical walls is to take a strip of paper of the required width and length, fold it into a cylindrical form with its ends overlapping so that it will readily enter the box to be lined, and then releasing it let it spring outward against the walls of the box. After the paper has been applied to the interior of the box the box is dipped in a hot bath of the insulating material, the lining being thoroughly permeated thereby and thus cured. By this method much time and labor are saved in lining the box. As the lining is made no thicker than is required for the insulation desired, there is a saving in the amount of paper consumed, and at the same time the casting itself can be made of a decidedly less diameter, with a corresponding economy of metal, and on the whole a closer fit of the lining against the walls of the casting is secured.

Fig. 2 of the drawings is a cross-section of a junction-box provided with my improved lining applied in the manner described, *a* being the casting and *b* the lining.

By this improved method the cost of applying a paper lining to a junction-box is reduced more than one-half. It is needless to say that the cost is very much less than the cost of a porcelain or agate lining; also, the cost is much less than when an inserted lining of hard rubber is used, which is a method of construction that has sometimes been proposed.

As above indicated, the paper lining used in the present invention should be secured to the interior of the junction-box by pasting before it is treated by dipping in shellac, coal-tar, or other insulating preparation. Unless thus secured by some suitable paste or gum it will be liable to become loose after treatment and to fall out from the box, in which it is necessary to have it firmly seated. So, also, if the paper composing the lining be treated with the hydrocarbon or other insulating preparation before the lining is inserted in the box, it will be found very difficult to secure it fixedly in place by means of paste or cement, since the scale that forms on the sur-



face of the paper would interfere with the proper action of the paste. When, however, the raw paper is first pasted to the iron walls of the box and then treated with the hot preparation, the lining will not only be properly "cured," but will be found to adhere with great tenacity, so that cutting-tools will be necessary to effect its removal.

It will be understood by those familiar with the use of junction-boxes in the electrical arts that it is necessary for the insulating material with which the lining of my improved junction-box is treated to be hot at the time of its application. The method which I have adopted and which I find satisfactory is to bring the hydrocarbon preparation to a very high heat, say 300° to 400° Fahrenheit, and immerse the lined junction-box therein, keeping it in the bath for the space of some

fifteen or twenty minutes. It should be kept in such bath until the air is expelled from the pores of the paper or other fibrous material and such material is thoroughly impregnated throughout with the hydrocarbon.

What is claimed as new is—

The above described mode of lining junction boxes, which consists in securing to the interior of the same, either by means of paste or some equivalent gum or cement, a thin layer of paper or other fibrous material and then treating the same by immersing the lined box in a highly heated bath of hydrocarbon compounds, substantially as and for the purpose set forth.

WILLIAM T. RUETE.

Witnesses:

ERNEST HOPKINSON,  
JAMES N. CATLOW.