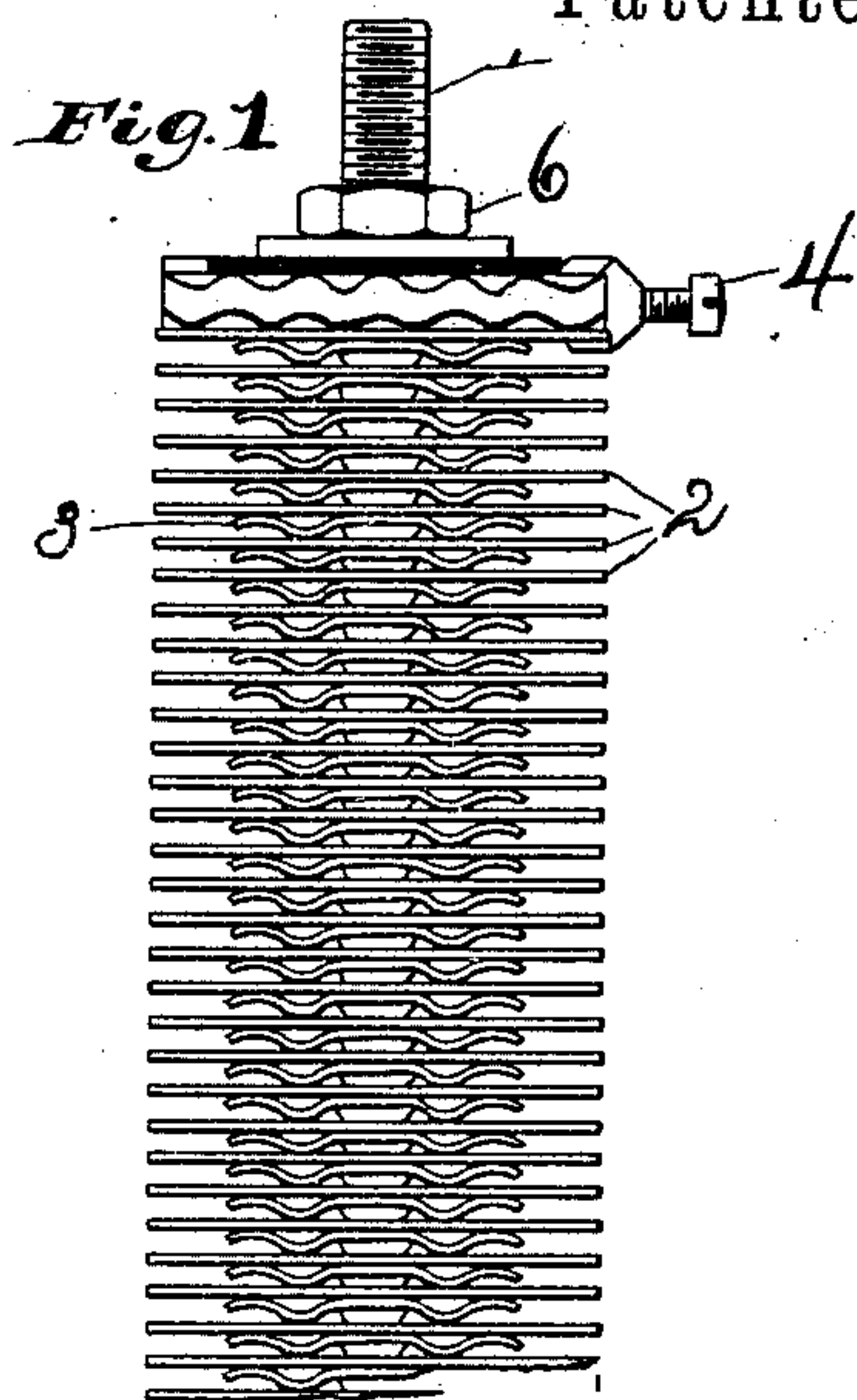


(No Model.)

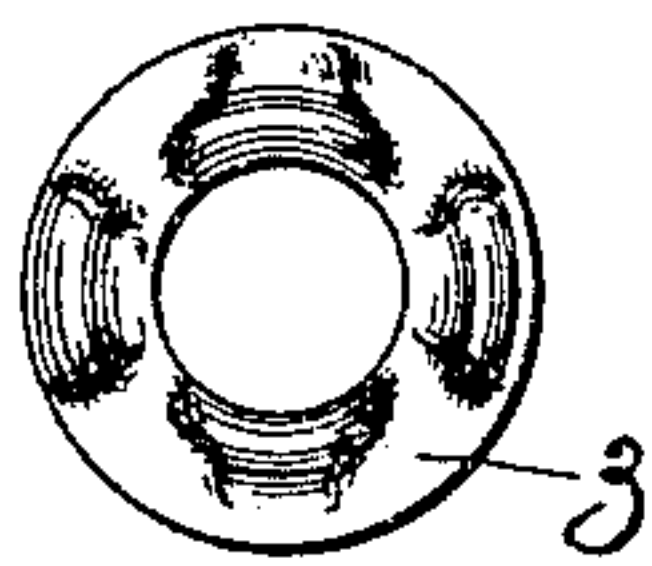
H. P. DAVIS.  
RHEOSTAT ELEMENT.

No. 548,867.

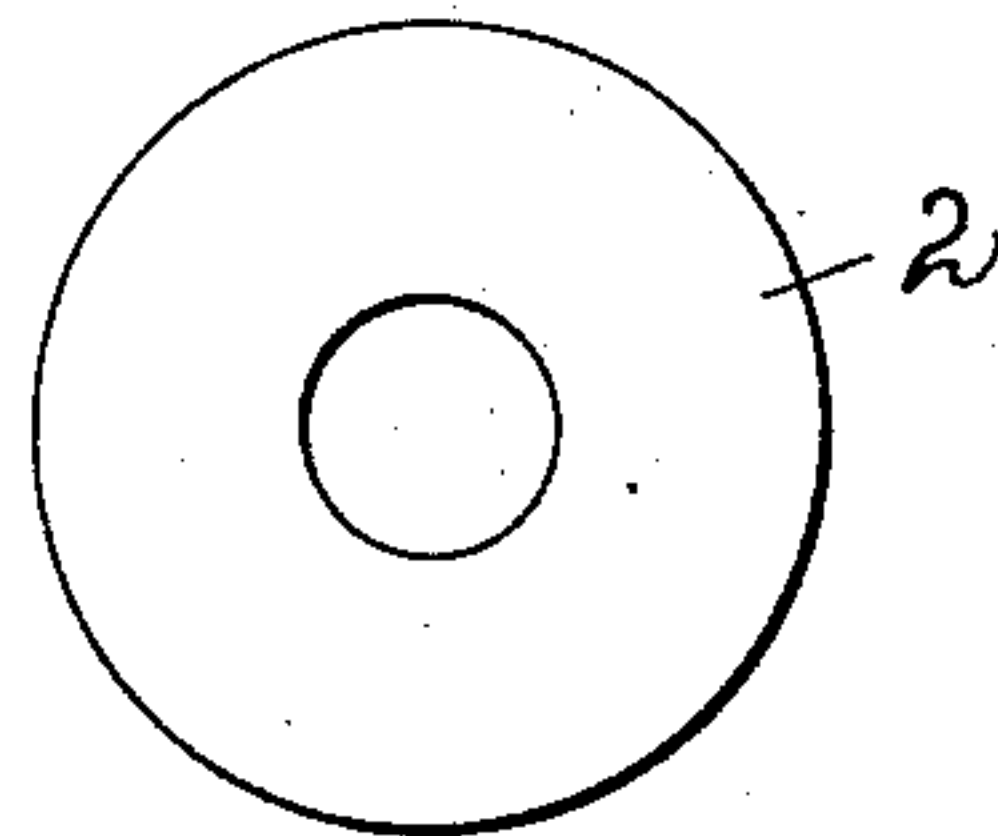
Patented Oct. 29, 1895.



*Fig. 2.*



*Fig. 3*



WITNESSES:  
*George D. Smith Jr.*  
*Hubert C. Towner*

INVENTOR  
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ATTORNEYS

# UNITED STATES PATENT OFFICE.

HARRY P. DAVIS, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE WEST-  
INGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF SAME PLACE.

## RHEOSTAT ELEMENT.

SPECIFICATION forming part of Letters Patent No. 548,867, dated October 29, 1895.

Application filed February 28, 1894. Serial No. 501,757. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY P. DAVIS, a citizen of the United States, residing in Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Rheostat Elements, (Case No. 580,) of which the following is a specification.

My invention relates to devices for the production of ohmic resistance for use in rheostats, and particularly for controllers in electric-railway cars.

The object of my invention is the provision of a form of resistance which shall occupy a minimum space and shall require the least labor and cost in manufacture.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is an elevation of a rheostat member, shown in fragmentary form in order to suggest the indefinite extension capable of being given to such member as constructed by me; and Figs. 2 and 3 are views of the two kinds of plate employed in building up my rheostat member.

My resistance comprises a central supporting-rod 1, preferably provided with screw-threads at its end or ends, as shown. Upon this rod is strung or mounted a number of metal disks composed of a metal having the proper resistance for the purpose desired. I have found that iron in its commercial and partly oxidized condition answers very well. These disks are alternately of the two forms shown in Figs. 2 and 3. The plane disks 2 alternate with knobbed disks 3, which may be stamped into substantially the shape shown, so as to offer restricted areas of contact with adjacent plane disks. At the two ends of the resistance member are placed heavier plates, of preferably good conducting material, provided with binding-screws 4 and 5. Upon these last plates nuts 6 are screwed, and these are separated from said plates by insulation. Where the central supporting-rod is made of conducting material, any well-known means may be employed for insulating the resistance-disks therefrom.

By screwing more or less hard upon the end plates of the member by means of the nuts 6 the contact areas between adjacent plates

may be varied and the total resistance of the column correspondingly changed. Thus a considerable adjustment of resistance may be obtained.

Of course it is not necessary that the number of plane and bulged disks shall be equal, or indeed that any plane disks be necessarily used. The spirit of my invention includes any arrangement of disks wherein some of the disks are bulged or knobbed, as shown, for the production of a restricted area of contact.

The material whereof the disks are composed is a matter of indifference so long as the proper ohmic resistance desired is obtained.

What I claim is—

1. A resistance composed of a support, and disks strung thereon, some of said disks being provided with knobs for providing restricted contact, substantially as described.

2. In a resistance column, a disk bent or bulged at one or more points in its surface, substantially as described.

3. A resistance composed of a support and disks strung thereon, alternate disks being plane and bent or bulged at points, substantially as described.

4. A resistance composed of a support and disks strung thereon, some of said disks being provided with knobs for providing restricted contact, and pressure plates provided with means for varying the pressure of said disks upon one another, substantially as described.

5. A screw threaded support, disks strung thereon, some of said disks being bulged at points, and nuts on said threaded ends adapted to bear more or less tightly on said disks, substantially as described.

6. In an electrical resistance, the combination with a series of plates, each of which has projections adapted to lie in contact with an adjacent plate, of means for binding said plates together, substantially as described.

7. An electrical resistance plate having a plurality of projections upon one face and corresponding depressions in the other face, substantially as described.

8. An electrical resistance comprising a pile of plates each of which makes contact with

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100



an adjacent plate by contact projections, substantially as described.

9. In an electrical resistance, the combination with a plurality of plates each of which  
5 has a plurality of projections upon one face and corresponding indentations in the other face, of means for binding said plates together, substantially as described.

In testimony whereof I have hereunto subscribed my name this 26th day of February, 10  
A. D. 1894.

HARRY P. DAVIS.

Witnesses:

JAMES W. SMITH,  
HUBERT C. TENER.