

No. 878,247.

PATENTED FEB. 4, 1908.

T. W. SMALL.
OVERHEAD ELECTRIC CONTACT.
APPLICATION FILED DEC. 5, 1906.

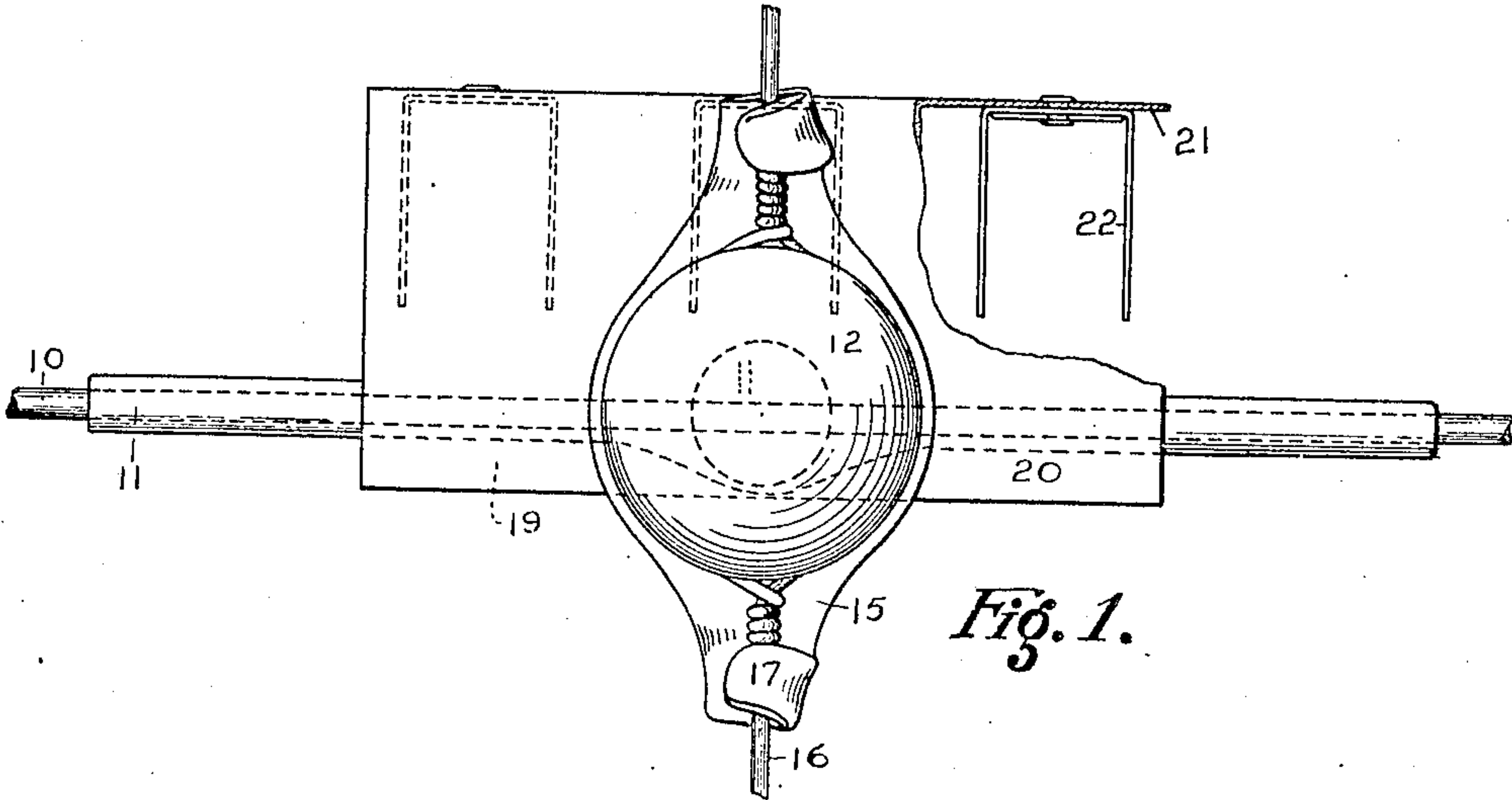


Fig. 1.

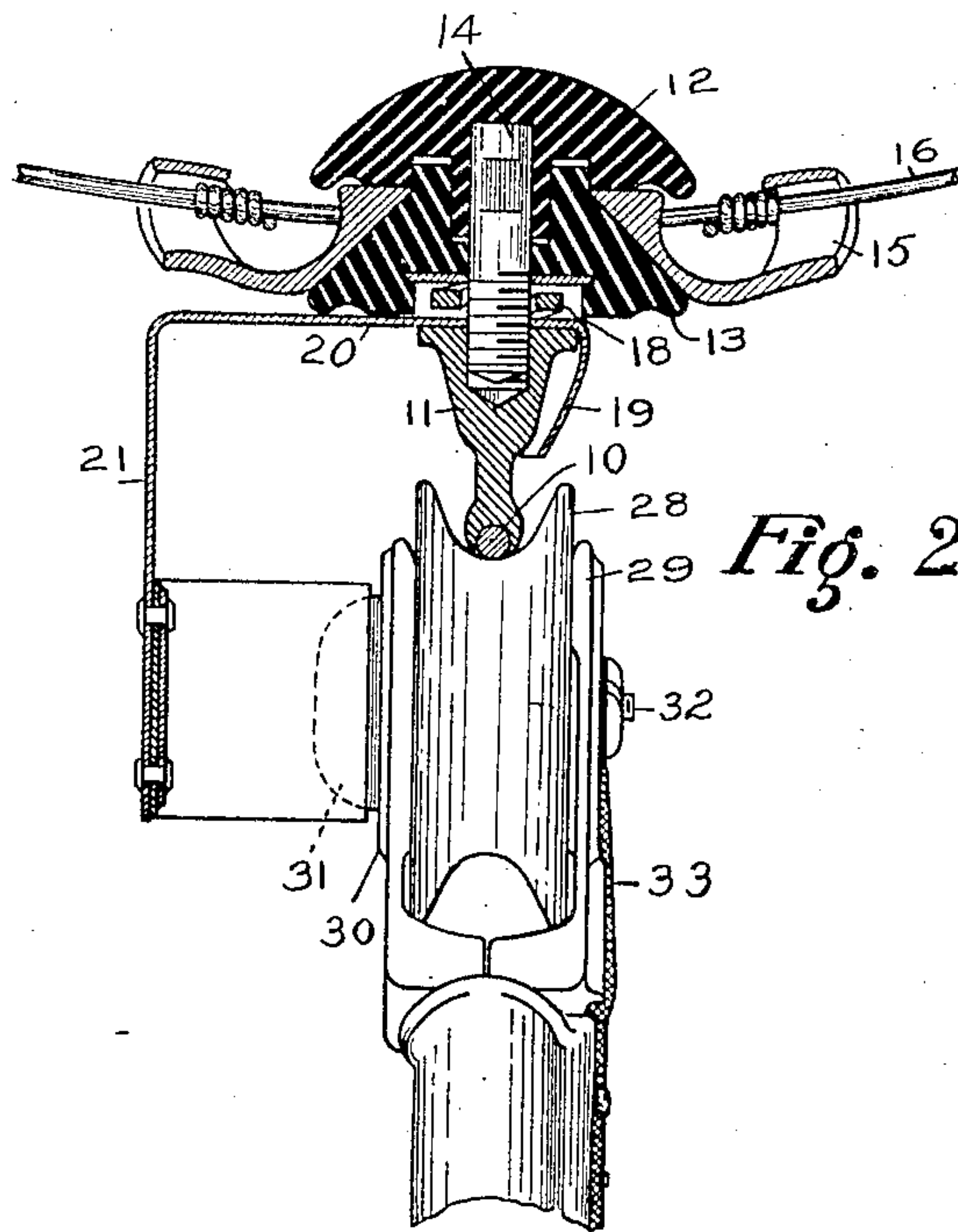


Fig. 2.

WITNESSES:
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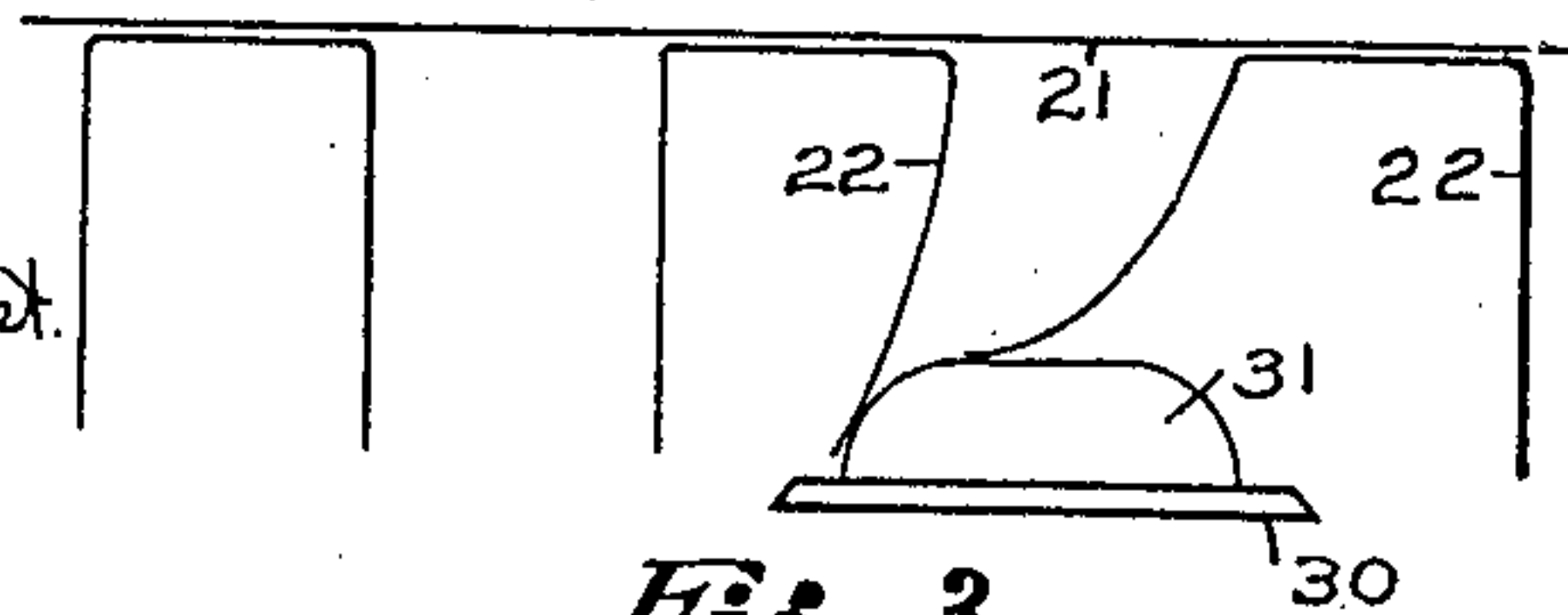


Fig. 3.

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OVERHEAD ELECTRIC CONTACT.

No. 878,247.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed December 5, 1906. Serial No. 346,402.

To all whom it may concern:

Be it known that I, THOMAS W. SMALL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Overhead Electric Contacts, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of this invention is to provide a very efficient contact device adapted to be carried by the overhead construction of a trolley system. The device coöperates with a suitable contact member carried by the trolley and may be employed, for example, to actuate a suitable indicator on the car. My mechanism insures a contact for a sufficient length of time to properly actuate the indicator, though the car be running very rapidly.

The particular characteristics of the contact are hereinafter more fully explained and the essential attributes are summarized in the claims.

In the drawings, Figure 1 is a plan, partly broken away, of my contact applied to an overhead trolley wire and its support. Fig. 2 is a cross section through such support and the contact, showing also an edge view of the trolley wheel. Fig. 3 is a diagrammatic plan of the contact members, showing their operation as the trolley wheel passes.

In the drawings, 10 represents the trolley wire which is carried by a suitable hanger. This hanger consists of the longitudinal member 11 which is formed to grasp the wire, the insulators 12 and 13, the stud 14 carried by the insulator 12 and screwing into the metallic member 11, and the guy wire guide 15 which surrounds the insulators 12 and 13. The guy wire is indicated 16. It passes beneath the ears 17 on the guide 15 and is secured around the periphery of the central portion of the guide beneath the insulator 12. This much of the construction is in common use.

In carrying out my invention, I mount on the stud 14, and in contact with the member 11, a metallic plate 20 which extends outward horizontally and then is bent downwardly vertically, as is shown at 21. Riveted to the inner face of this depending portion 21 of the plate are a series of U-shaped plates 22 projecting normally in vertical planes toward the path of the trolley wheel. Fig. 2

shows a recess on the underside of the insulator 13 in which is mounted a spring washer 18 bearing on the upper side of the plate 20 and insuring a good contact between that plate and the upper end of the hanger bar 11. A downward flange 19 of the plate 20 engages the hanger bar and prevents the plate turning.

The trolley wheel is indicated by 28. It is mounted in a harp 29, which carries, on the side adjacent to my contact mechanism, a metallic boss 31, preferably rounded, as shown. This boss is insulated from the harp by a fiber disk 30 and may be in electric connection (through an axial pin 32 and the conductor 33) with an indicator on the car. The construction of the trolley harp shown is made the subject of another application, filed contemporaneously herewith.

When the trolley wheel moves along the wire, the boss 31 engages one of the U-shaped arms 22 and bending it aside, passes into engagement with the next and so on until the boss has cleared the last arm. This is illustrated in Fig. 3. It will be seen that before the boss clears any arm, it is in engagement with the next, so that there is a continuous contact from the instant the boss engages the first arm until it clears the last arm. This gives sufficient time for the actuation of the indicating mechanism on the car. The construction is very simple and cheap and easily applied to existing structures.

I claim:

1. The combination with a trolley harp carrying at its side a contact boss, and a contact making device presenting to such boss a plurality of flexible contacts arranged to bend in the direction in which the trolley is moving.

2. A trolley hanger, a contact device adapted to be carried thereby and including a depending member and a series of flexible metallic plates arranged side by side with their broad sides transverse to the direction of travel of the trolley, combined with a trolley harp having a contact boss on its side adapted to engage such contacts successively.

3. A contact making device comprising a series of projecting flexible flat metallic plates and a bent plate to which said flexible plates are secured with their flat sides adjacent and which acts as a hanger therefor.

4. The combination in a contact device of a supporting structure having a horizontal

and vertical plate, a plurality of U-shaped sheet metal members riveted to the vertical portion of the plate to present contact members, the horizontal portion of the plate being adapted to be clamped in a trolley hanger.

5. The combination with a trolley hanger supporting a trolley wire, and a trolley having a contact boss on the side of its harp, of a contact member carried by the hanger and having a downwardly extending portion and a series of plates projecting inward from such downward portion with their edges free and adapted to be engaged by such boss.

6. The combination with a trolley hanger, of a contact device adapted to be carried thereby and including a depending member and a series of flexible metallic contact plates carried by said member and lying in a series of planes transverse to the path of movement of the trolley.

7. The combination with a trolley hanger, of a contact device adapted to be carried thereby and including a depending member, and a series of flexible metallic, U-shaped, contact plates riveted at their intermediate portions to said member and projecting in vertical planes transverse to the path of the trolley.

8. The combination with a trolley hanger having an insulator, a trolley-wire-support and a stud connecting them, of a contact

member surrounding said stud and clamped between such trolley-wire-support and insulator and consisting of a plate extending outwardly and downwardly and a series of flexible upright contact plates riveted to said plate and having free ends projecting toward the path of the trolley wheel.

9. The combination with a trolley harp carrying at its side a contact boss and a contact making device presenting to such boss a plurality of flexible contacts side by side and lying in a series of planes transverse of the line of travel of the trolley, with the ends of which contacts the boss engages, said boss successively engaging one contact before it leaves the preceding one.

10. The combination, with a trolley harp having a contact boss at its side, of a trolley hanger and a contact device carried thereby and including a downwardly extending plate and a series of flat flexible plates secured thereto and projecting inwardly and having their free ends adapted to be engaged by said boss, the boss being adapted to come into contact with one of said plates before it leaves the preceding plate.

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

THOMAS W. SMALL.

Witnesses:

ALBERT H. BATES,
G. A. MYERS.