

Oct. 25, 1949.

E. P. LEPPER

2,486,299

TOY SIGNAL DEVICE

Filed Oct. 16, 1948

Fig. 1.

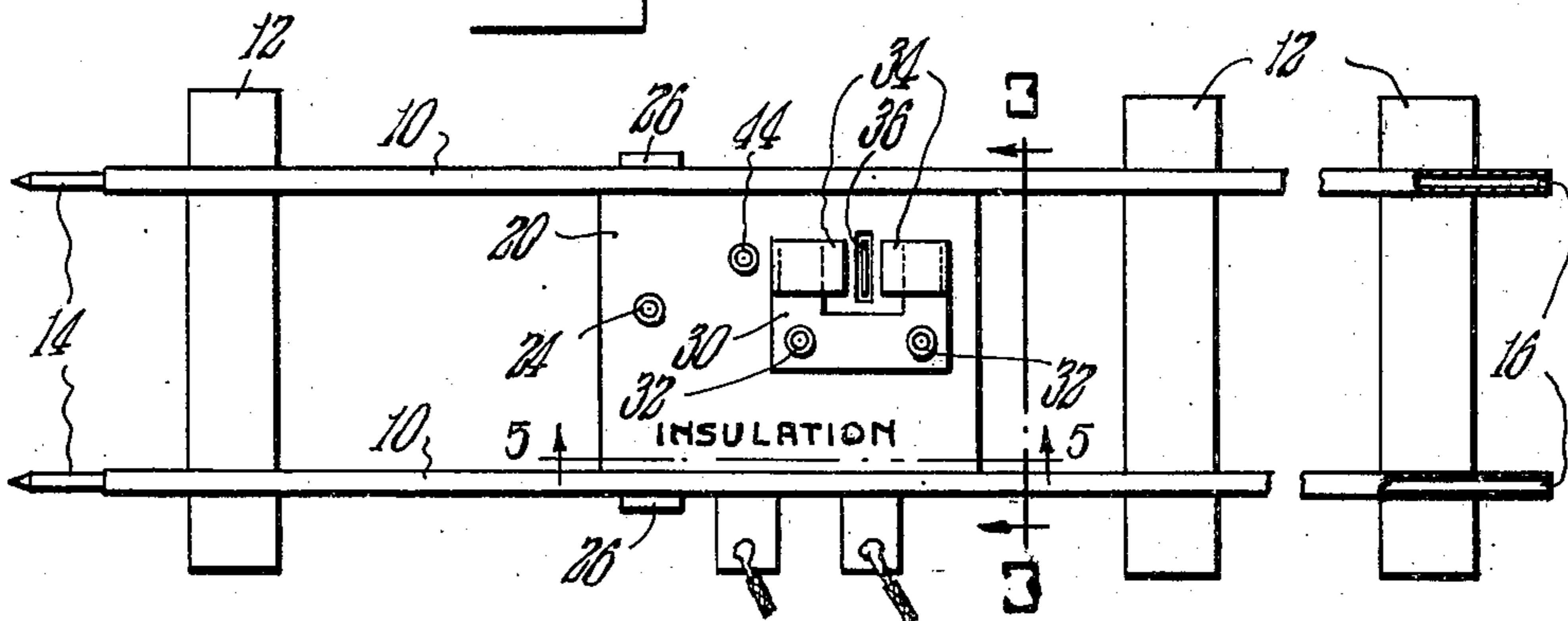


Fig. 2.

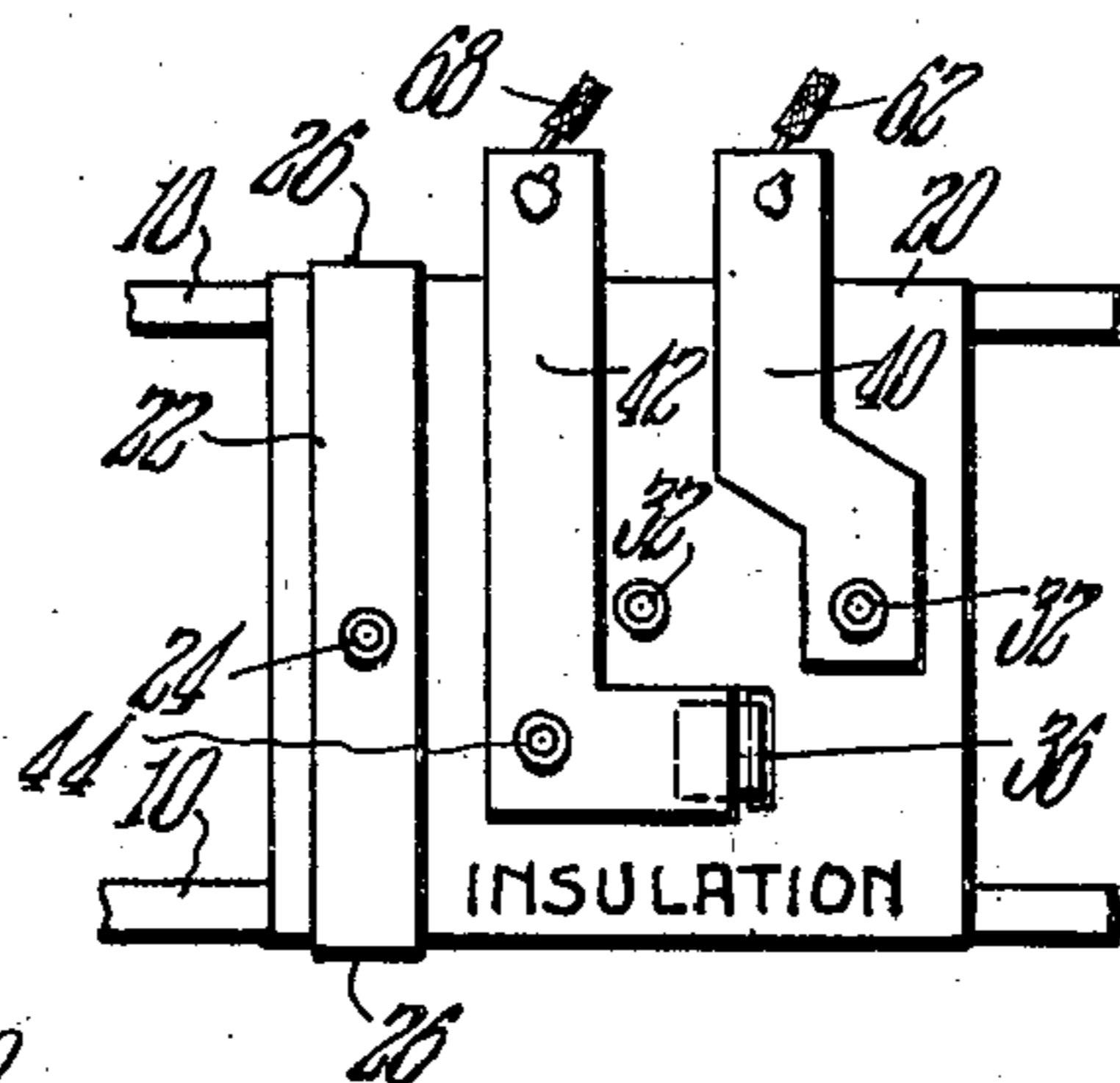


Fig. 3.

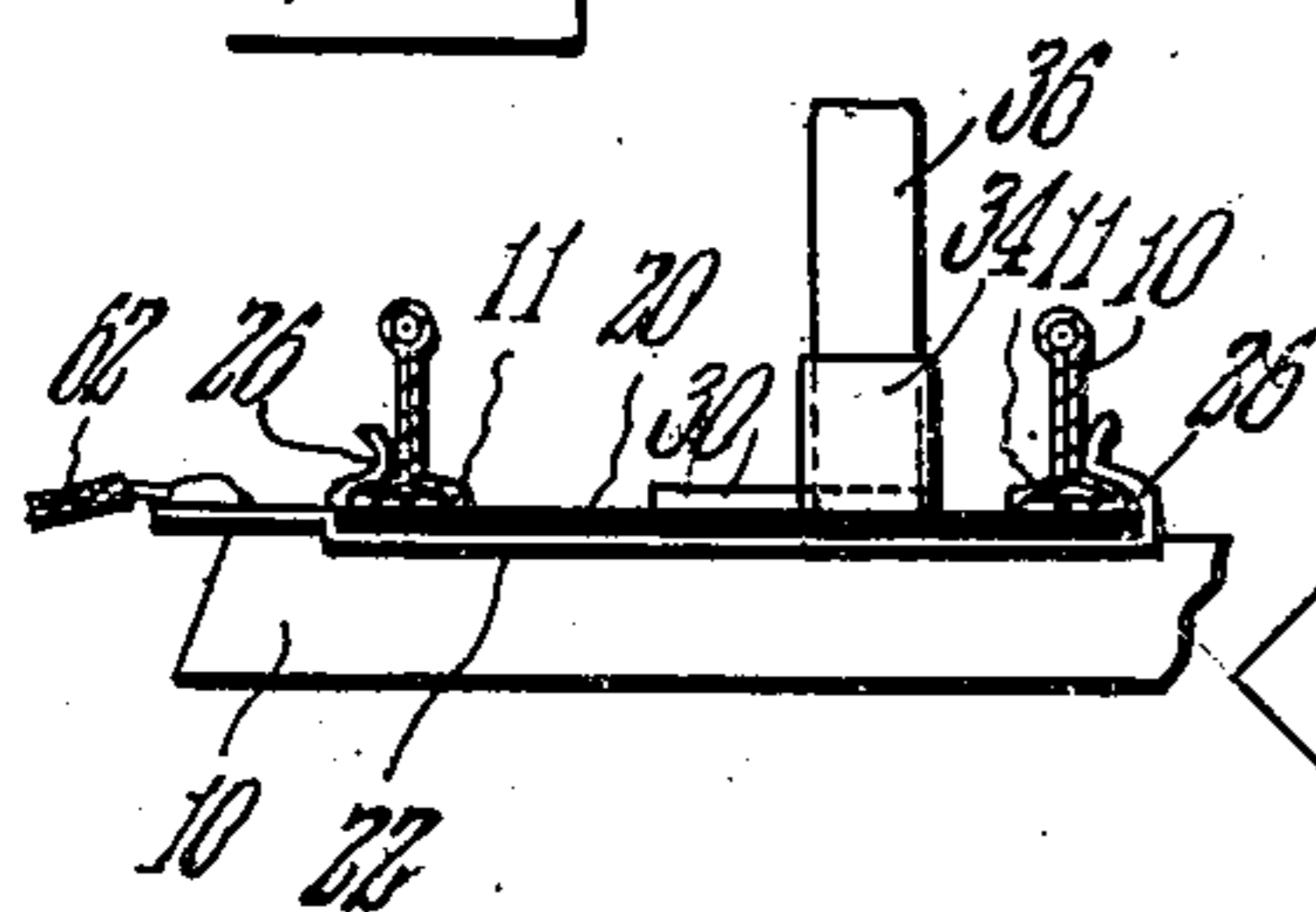


Fig. 6.

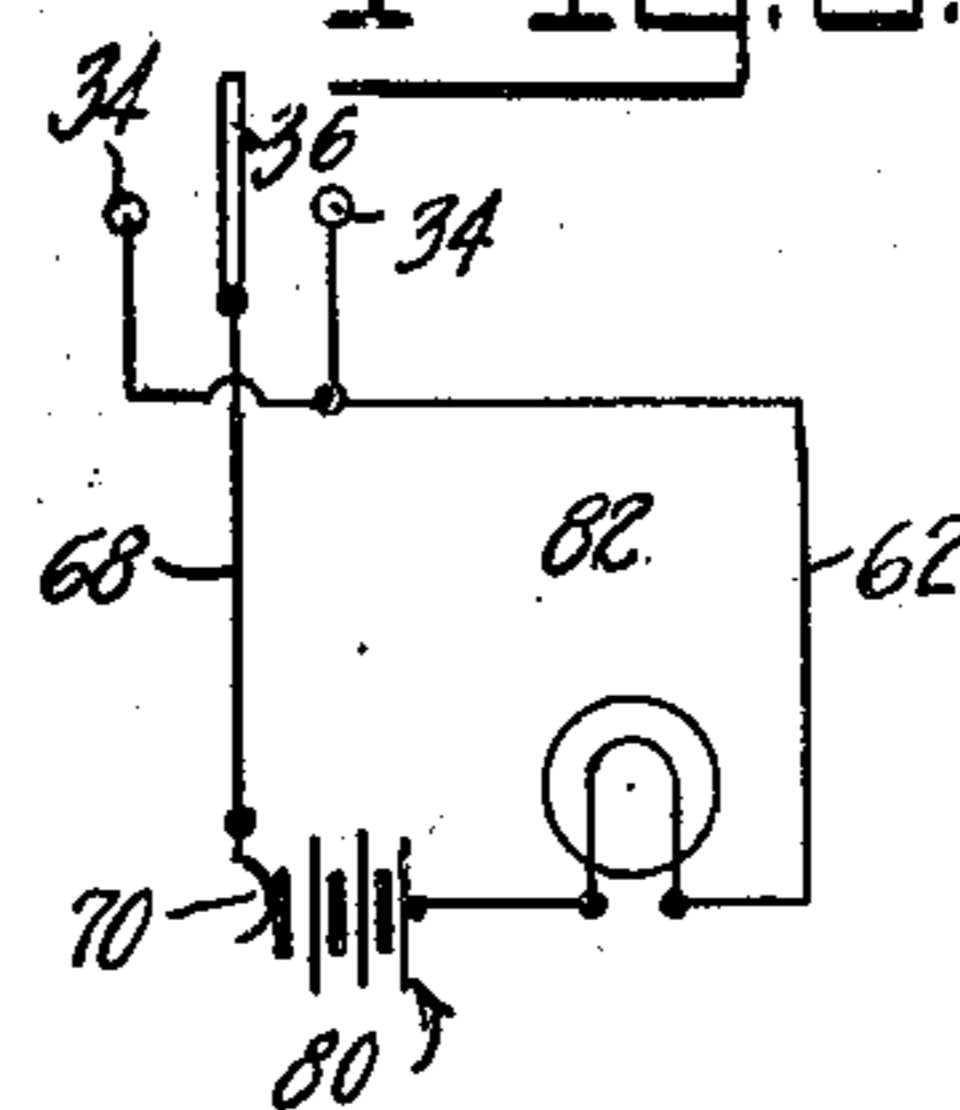


Fig. 4.

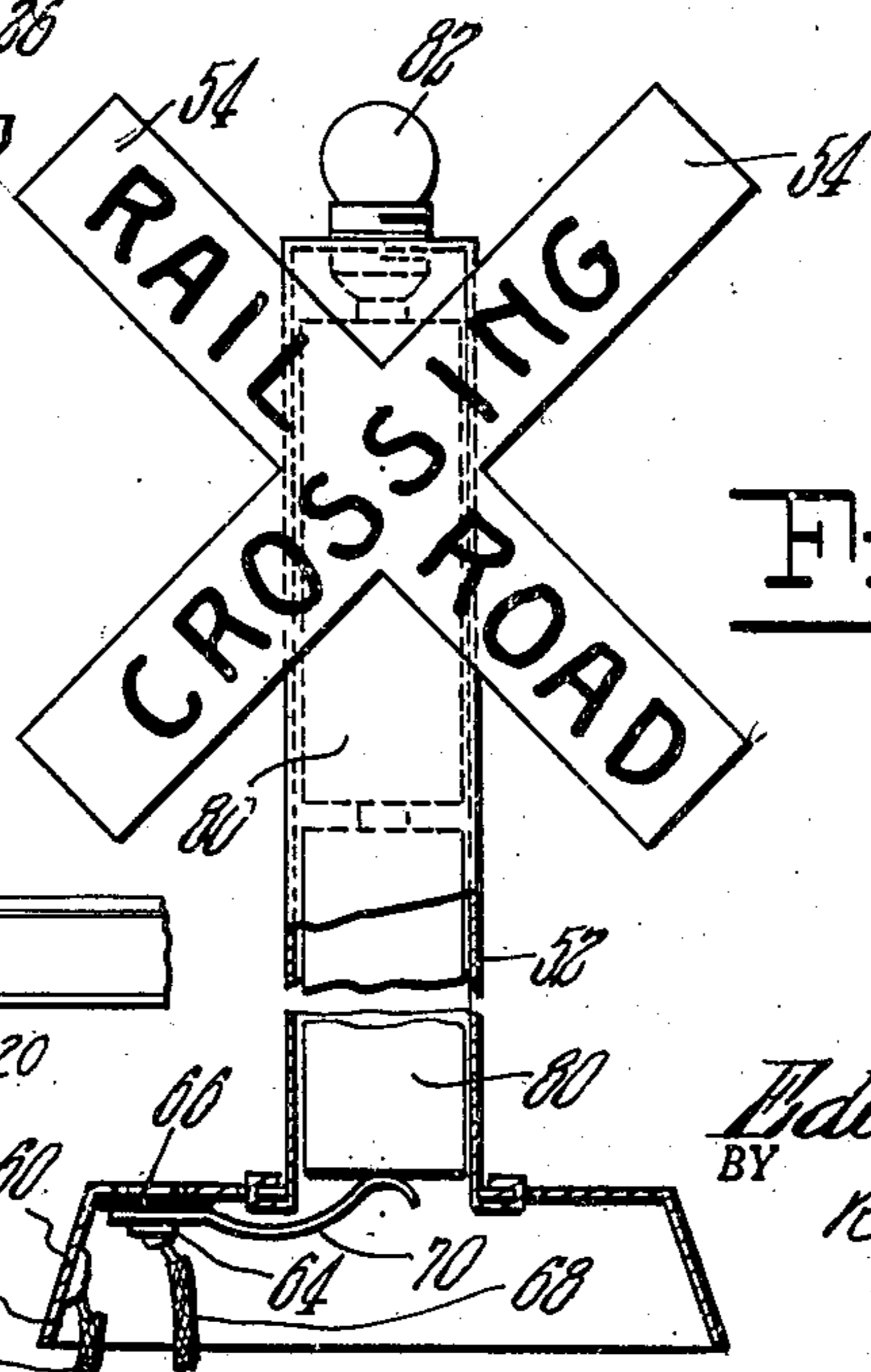
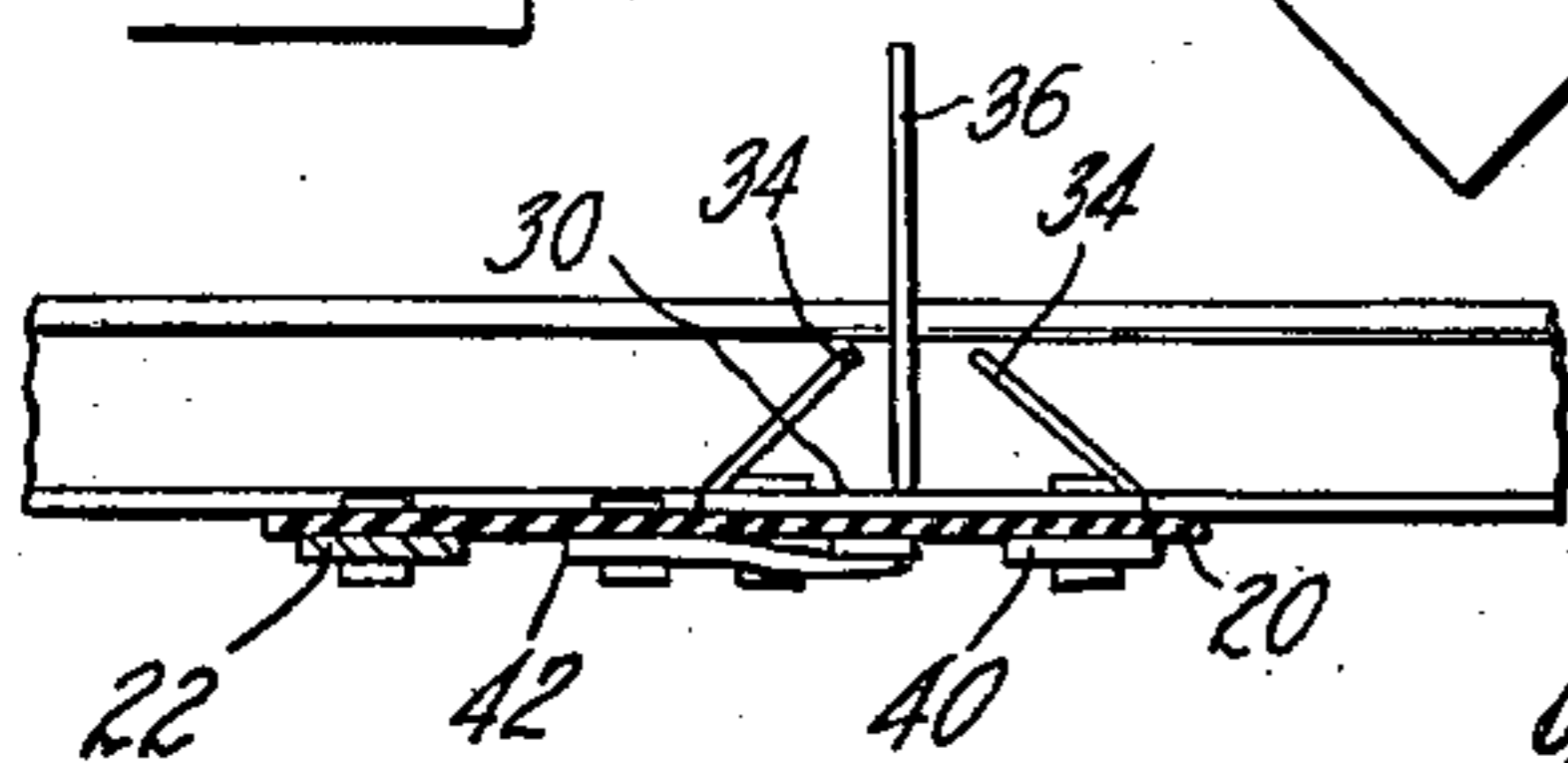


Fig. 5.



INVENTOR.
Edwin P. Lepper.
BY Ross, Ross
Attys.

UNITED STATES PATENT OFFICE

2,486,299

TOY SIGNAL DEVICE

Edwin P. Lepper, Springfield, Mass.

Application October 16, 1948, Serial No. 54,911

1 Claim. (Cl. 246—246)

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My invention relates to improvements in a toy and is directed more particularly to the provision of a novel signalling means for toy trains of the mechanical type.

It is the principle object of my invention to provide a novel and improved electrical signal construction for use in connection with toy trains or the like of the mechanical type wherein electrical circuits by means of which an electrical signal device might be employed are otherwise non-existent. In other words, in mechanical train sets, where electricity is not used, it has not been heretofore possible to include therein electrically operated signalling devices or other items of equipment such as semaphore signals, road cross-over guards and the like which could be operated by means of electricity just as in the case of electrically operated train sets. That is to say, the element of automatic operation, attendant with so many items of an electrically operated train set has up to now been obviously missing in the case of such items when used in mechanical train sets.

With the above primary object in view, it is another object of my invention to provide a signal device of the above described character which is relatively simple and compact and which is not only attractive in its appearance and practical in its value but also reliable in its operation.

It is a still further object of my invention to provide a device which is constructed of relatively simple parts which are adapted to be readily assembled and which when once assembled are positively and securely retained in operative relationship and which cannot be readily separated from each other, either accidentally or otherwise.

With the foregoing and various other novel features and advantages and other objects of my invention as will become more apparent as the description proceeds, the invention consists in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more particularly pointed out in the claims hereunto annexed and more fully described and referred to in connection with the accompanying drawings wherein:

Fig. 1 is a plan view of the operating member of the device of my invention in association with toy railroad tracks;

Fig. 2 is an inverted plan view of the operating member shown in Fig. 1;

Fig. 3 is a sectional elevational view along the line 3—3 of Fig. 1;

Fig. 4 is a side elevational view of one form of a signal member of the device of my invention

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with certain parts broken away for purposes of clearness;

Fig. 5 is a sectional elevational view on the line 5—5 of Fig. 1; and

Fig. 6 is a wiring diagram to explain the invention.

In the above mentioned drawings annexed hereto and forming a part of this specification, I have shown but one embodiment of my invention which is deemed preferable, but it is to be understood that changes and modifications may be made within the scope of the appended claim without departing from the spirit of the invention.

Referring now to the different drawings more in detail, in which similar characters of reference indicate corresponding parts in all the figures and referring more particularly to the preferred form of my invention selected for illustrative purposes, I have shown a section of toy railroad tracks of the conventional design and having a pair of rails 10 secured to spaced cross sleepers or ties 12 with connectors 14 fixed to the rails at one end of the section and sleeves 16 formed from the rails at the opposite end of the section, all as is well known in the toy art.

A support 20 which may be made from any insulation material has disposed on the underside thereof a strip member 22 fixed thereto by means of a rivet 24 or the like. The opposite ends of the member 22 has upwardly and inwardly extending end portions or ears 26 adapted to embrace the sides of the member 20 and the flanges 11 of the rails 10 and to hold the support snugly fast thereto when in operating relationship.

Centrally disposed upon the upper surface of the member 20 is a contact member 30 which is fixed to the support 20 by means of rivets 32. Upwardly extending from the contact member at opposite sides thereof are rigid contact members 34 and 34 and these are angularly disposed so as to have free ends which converge toward but do not touch each other upwardly of and above the upper surface of the member 20.

An upwardly extending flexible contact member 36 is fixed at one end to the underside of the member 20 and extends upwardly through an opening therein. The free extremity of the member 36 is disposed between the converging free ends of the members 34 and 34.

Being flexible, the free end of the member 36 is adapted to move forwardly and rearwardly so that it contacts the end portions of the members 34 and 34 in successive movements.

A connecting member 40 is fixed to the under side of the member 20 by means of the rivet 32

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and extends outwardly to one side of the member 20 and a connecting member 42 is likewise fixed to the underside of the member 20 by means of a rivet 44 and extends outwardly to one side of the member 20, all as is shown in Fig. 2.

The flexible contact member 36, may, if desired, be fixed to the under side of the support 20 by gripping the end thereof between the members 20 and 42 substantially as shown in Fig. 2.

The signal member of the device of my invention is shown as a grade crossing signal in Fig. 4 although it will be understood that any type of signal device may be employed herewith.

For purposes of illustration, I have shown a grade crossing signal having a base 50, a post 52 upwardly extending from the base, and a pair of cross arms 54 arranged at the top of the post in the well known manner.

The base 50 carries a terminal 60 to which a connection 62 may be fixed and a terminal 64 is likewise carried by the base but is separated therefrom by an insulated block 66. A connection 68 is fixed to the terminal 64.

A contact 70 is held at one of its ends in pivoted relation with the terminal 64 and it has an opposite free end which may be engaged to embrace the under side of a battery 80 located within the post 52 as shown in Fig. 4. In the form shown two batteries are employed.

A light 82 is fixed in the top of the post 52 in the well known manner.

The opposite ends of the connections 62 and 68 described above are connected to the connecting members 40 and 42 respectively as will be observed in Fig. 2.

An electrical circuit is now provided wherein when a contact is provided between one of the rigid contacts 34 and the flexible contact 36 the circuit extends from one of said rigid contacts 34 through the member 30 and the connecting member 42 through the connection 68 and the contact 70 to the batteries 80 and the light 82 and is completed through the post 52 and the base 50 and the terminal 60 and thence through the connection 62 to the member 40 and the member 30.

It is understood of course that a buzzer or flag device can be substituted for the light as a signal means without departing from the spirit and scope of my invention.

The upwardly extending flexible contact member 36 may be varied in its length for various reasons as will shortly be observed.

As the train passes along the rails, the axles of the trains actuate the member 36 and urge it toward one or the other of the end portions 34, depending of course upon the direction of the train. As the train moves forwardly the member 36 is held against the end portion 34 until the

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axle slips over the member 36 so as to release the latter whereupon the member 36 swings in an opposite direction to the other or opposite end portion 34 thereby establishing another contact.

The member 36, being so flexed, swings backwardly and forwardly until such springability expires.

As successive axles pass over the device, successive series of such contacts are created.

The invention may be embodied in other specific forms without departing from the essential characteristics thereof. Hence, the present embodiments are therefore to be considered in all respects merely as being illustrative and not as being restrictive, the scope of the invention being indicated by the appended claim rather than by the foregoing description, and all modifications and variations as fall within the meaning and purview and range of equivalency of the appended claim are therefore intended to be embraced therein.

What it is desired to claim and secure by Letters Patent of the United States is:

A switch device for an electrical circuit adapted for securement to the rails of a toy train system comprising in combination, a support formed from insulating material adapted to underlie the rails having a centrally disposed slot therethrough, means for securing said support to the underside of the rails, a connecting member on the underside of said support and a contact member on the upper side of said support fixed thereto by a member extending therethrough and electrically connecting the same, a second connecting member on the underside of said support and fixed thereto, and a flexible contact member having a lower end fixed to said second connecting member and an upper free end extending upwardly through the slot and being adapted to flex forwardly and rearwardly transversely of said support and longitudinally of the rails, said contact member having separate spaced contact portions disposed on opposite sides of and spaced away from said flexible contact members and adapted to be engaged thereby.

EDWIN P. LEPPER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
718,233	Williams	Jan. 13, 1903
734,341	Lee	July 21, 1903
995,910	Russell	June 20, 1911
1,037,606	Every	Sept. 3, 1912
1,237,287	Boemper	Aug. 21, 1917
2,035,487	Marx	Mar. 31, 1936