

July 2, 1935.

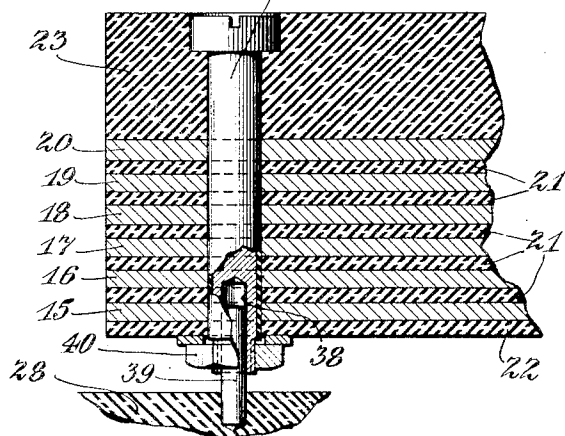
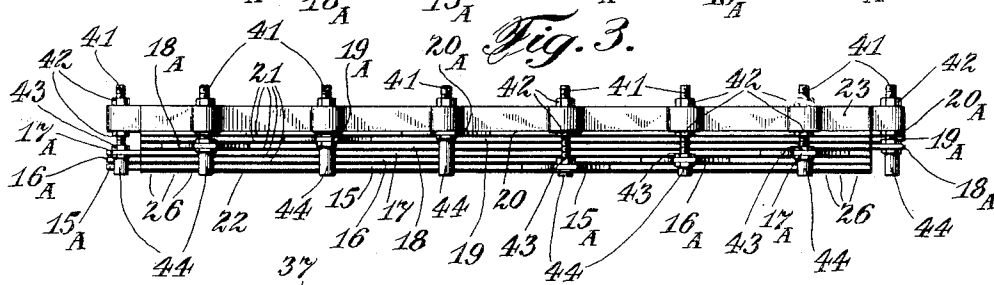
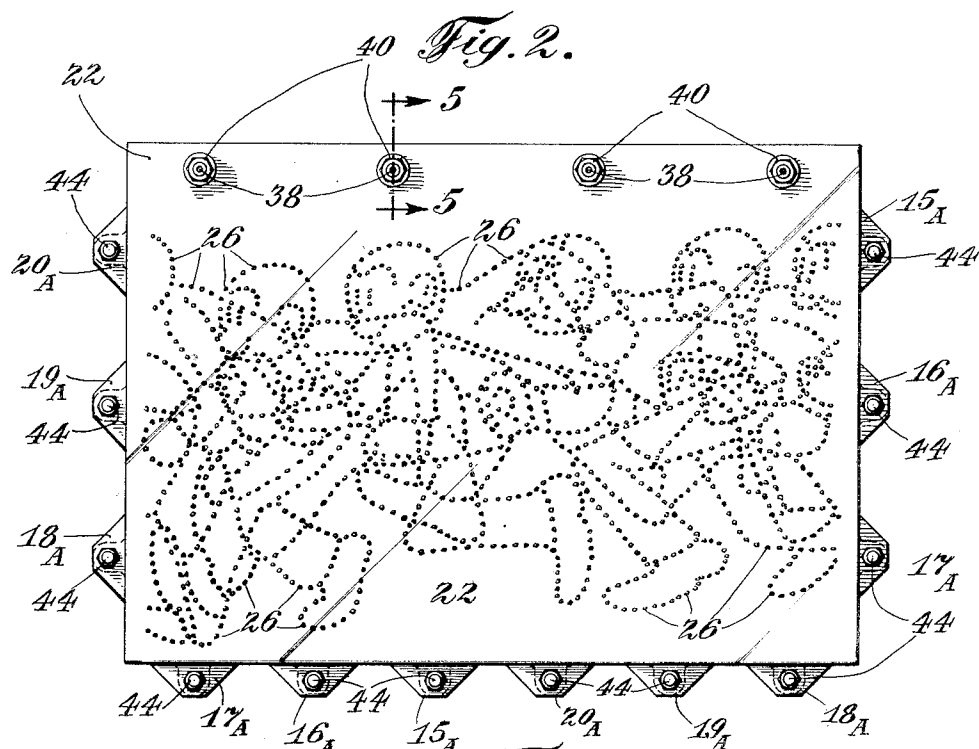
C. BOWERS

2,006,436

ELECTRIC CURRENT SUBDIVIDING CONNECTING DEVICE

Filed Feb. 4, 1931

4 Sheets-Sheet 2



INVENTOR.

Charley Bowers

BY *Isaac Friedman*
his ATTORNEY

his ATTORNEY

July 2, 1935.

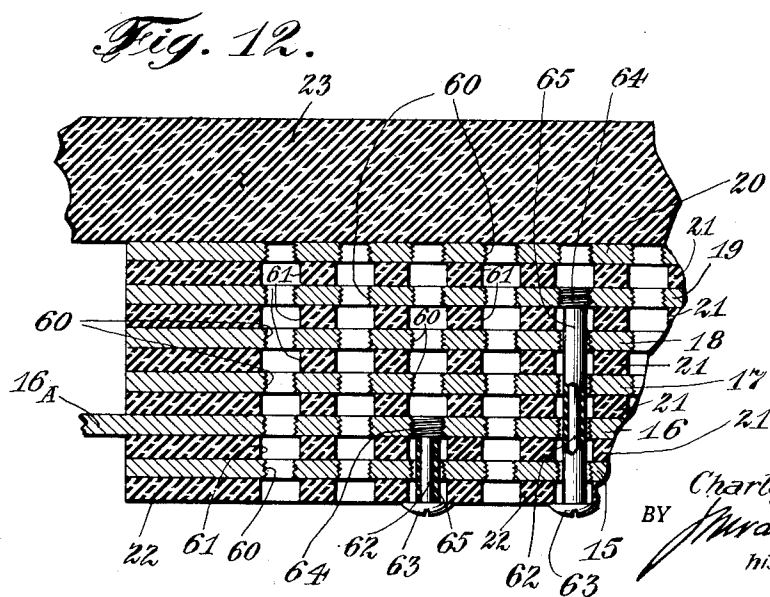
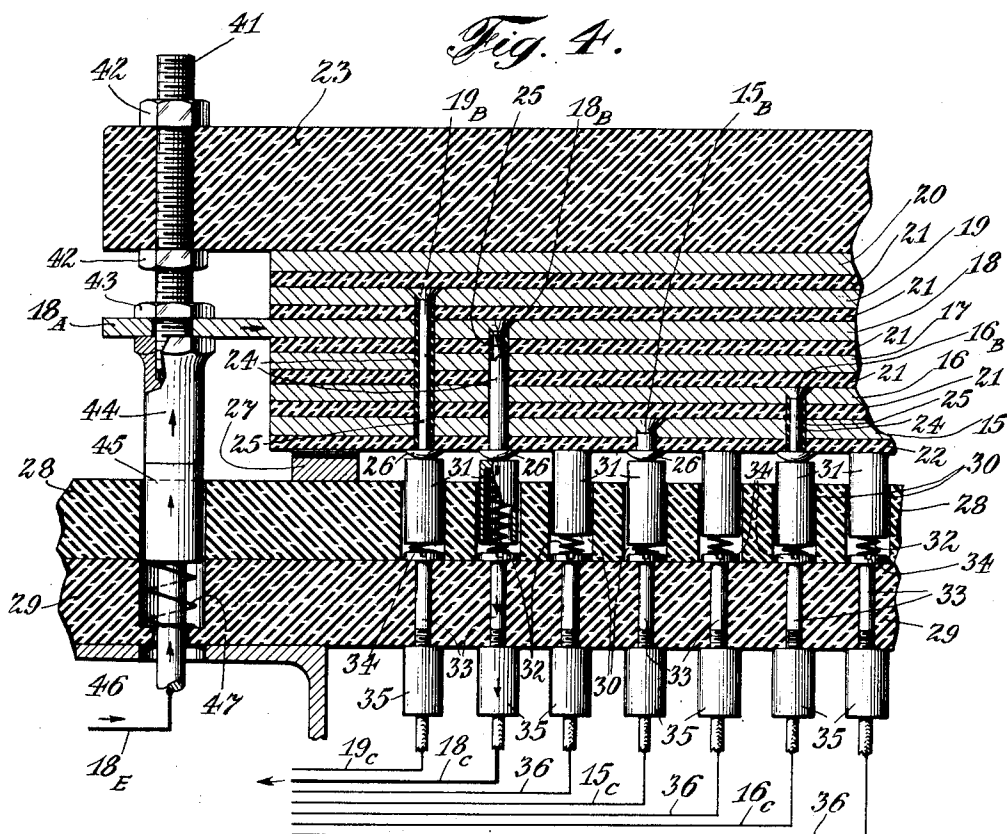
C. BOWERS

2,006,436

ELECTRIC CURRENT SUBDIVIDING CONNECTING DEVICE

Filed Feb. 4. 1931

4 Sheets-Sheet 3



INVENTOR.

Charley Boyers

BY *Moran Keenan*
his ATTORNEY.

July 2, 1935.

C. BOWERS

2,006,436

ELECTRIC CURRENT SUBDIVIDING CONNECTING DEVICE

Filed Feb. 4, 1931

4 Sheets-Sheet 4

Fig. 6.

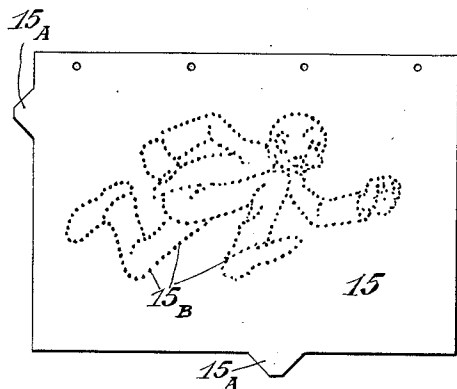


Fig. 7.

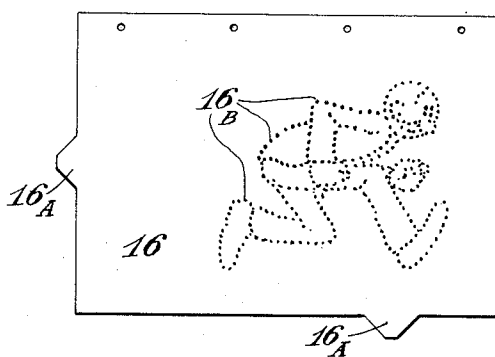


Fig. 8.

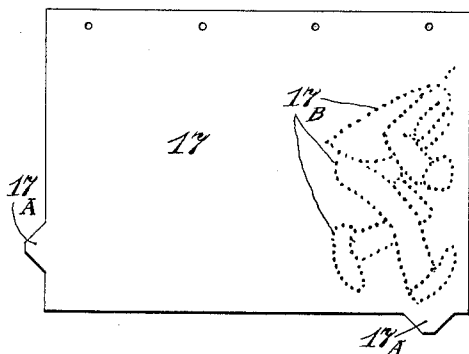


Fig. 9.

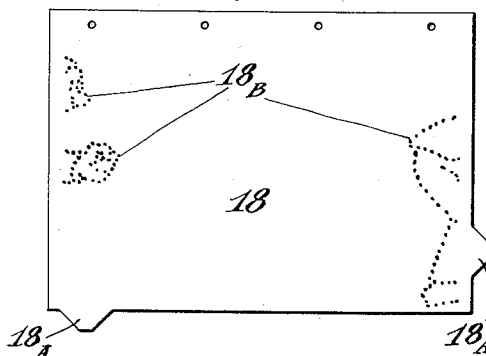


Fig. 10.

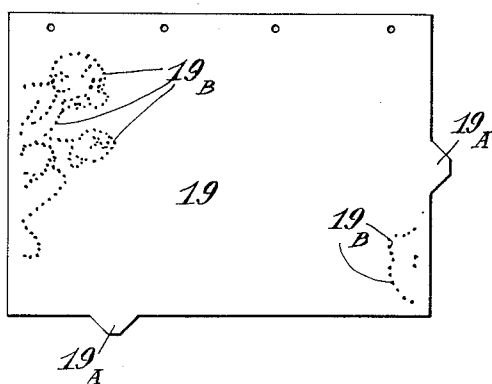
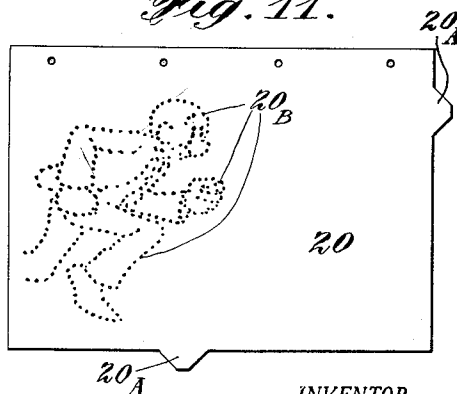


Fig. 11.



INVENTOR.
Charley Bowers
BY *Wm. H. McMillan*
His ATTORNEY

UNITED STATES PATENT OFFICE

2,006,436

ELECTRIC CURRENT SUBDIVIDING
CONNECTING DEVICECharley Bowers, New York, N. Y., assignor of
five per cent to William Saal, New York, N. Y.

Application February 4, 1931, Serial No. 513,247

5 Claims. (Cl. 173—328)

My invention relates to changeable electric light signs and refers particularly to devices of that character adapted for exhibiting a plurality of still figures, emblems or other desirable matter, as well as a plurality of designs, or figures, so arranged as to give the impression of a movement of these designs or figures.

One of the objects of my invention is a device having a plurality of plates, each plate having a plurality of perforations arranged according to a predetermined design, and means whereby the perforated designs may be converted into corresponding electric light effects without movement being imparted to either the perforated plates or the contact carrying plates.

In the present known methods for producing a changeable electric light effect in signs and similar devices by means of perforated plates, either the perforated plates or the contact carrying plate, or means, are moved with respect to each other in order that consecutive contacts may be made with the perforated plates.

These devices having the above described movable means have many mechanical and commercial objections, among which the following may be mentioned: The necessary movement of the perforated plates or the contact plates requires expensive and intricate mechanism resulting in costly equipment requiring constant expert attention, and the impossibility of producing satisfactory motion picture light effects.

The same requirements are necessary in the production of motion picture light effects as are necessary in the screen projection of photographic motion pictures, that is, there must be a rapid succession of light effects of a continuity of progressive designs separated from each other by the absolute absence of light.

Unless the succession of light effects is sufficiently rapid, there results a plurality of individual light impressions instead of a continuity of movements, thus producing a jerky series of light effects instead of the impression of a continuous movement of the elements of the design; and unless there is complete non-illumination between the successive steps of illumination, the result has a blurred and indistinct appearance.

These necessary elements incident to the production of an effective moving picture by means of a plurality of electric lights are incapable of attainment by means of movable perforated plates and contact carrying plates, because it is impossible to move the plates with sufficient speed and accuracy to accomplish the desired result.

In my device the easily removable and replaceable perforated plates and the contact carrying plates are in fixed position with respect to each other, thus overcoming the necessity of complicated moving mechanism, and the make and break mechanism is accomplished by means of an electrical distributor comprising a simple revoluble element capable of as rapid operation as desired, and which is adapted to co-operate with any perforated plates which may be employed without any alteration or change in the revoluble element.

The construction of my device is such as to fit it eminently for the production of either still or moving light effects, for if the plates represent a continuity of motion, the revoluble member may be revolved sufficiently rapidly to produce a motion effect; whereas, if the plates represent different and unconnected designs, the revoluble member may be revolved sufficiently slowly as to maintain each design in light effects for any predetermined period of time.

The novelty of the device of my invention and the advantages incident to its employment will be evident upon a consideration of my specification and its accompanying drawings in which similar parts are designated by similar numerals.

Figure 1 of the accompanying drawings is a perspective front view of one form of the device of my invention, partly broken away for purposes of clearness of description.

Figure 2 is a bottom view of the plate pack shown in Figure 1.

Figure 3 is a front edge view of the device of Figure 2.

Figure 4 is a section through the line 4—4 of Figure 1.

Figure 5 is a section through the line 5—5 of Figure 2.

Figures 6 to 11, inclusive, are face views of the perforated plates shown in the accompanying drawings.

Figure 12 is a vertical cross-section of a modified form of plate pack.

The particular form of the device of my invention illustrated in Figures 1 to 11, inclusive, comprises a plate pack consisting of a plurality of plates of electrical conducting material 15, 16, 17, 18, 19, 20, separated from each other by sheets of insulating material 21, 21, and having a bottom sheet of insulating material 22. A plate of insulating material 23 somewhat larger than the plates 15 to 20 is positioned upon the top of the plate pack.

Each plate 15 to 20 has two extended tongues

and breaks the circuit in the order of the consecutive movements, the electric light bulbs will show a plurality of individual illuminations producing the effect of a movement of that object.

5 It is further evident that if the plates 15 to 20 inclusive, carry independent perforated devices, the cylinder 49 may be revolved sufficiently slowly to maintain each of the illuminated effects for a predetermined period of time.

10 It will thus be seen that my invention presents a device capable of producing still or motion electric light effects by means of removable and replaceable perforated plates and a contact carrying plate without movement of said plates, the designs represented by the perforated plates being produced in illuminated effects in any desired consecutive order and for any predetermined period of time respectively, and hence possesses many advantages and desirable attributes not found in other devices for the same purposes and, further, that my device is capable of producing effects not obtainable by other perforated plate devices.

25 By "plate pack" I mean a plurality of conductive plates separated from each other by insulating material, or otherwise, with a plurality of aligned holes therethrough and it is immaterial whether the planes of said plates are vertical, horizontal or otherwise, and hence I use the word "superimposed" in my claims to include all positions of the plate pack.

30 I do not limit myself to the particular size, shape, number, arrangement or material of parts as shown and described as these are given simply as a means for clearly describing the device of my invention.

What I claim is:—

1. In an electric current-subdividing connecting device, in combination, a plate pack comprising a plurality of superimposed conductive plates, means adapted for electrically insulating said conductive plates from each other, the plate pack having a large plurality of holes therein extending into the plate pack from one of the outer side faces thereof, a plurality of conductive contact rods respectively entering within said holes from said face and arranged in groups with the rods of the different groups making contact with different conductive plates while all of the rods of any one group make contact with the same conductive plate, means adapted for electrically insulating each of said rods within a said hole from intervening conductive plates through which it passes, means for electrically connecting a feed conductor with each of said conductive plates, and means for electrically connecting an extension service conductor with each of the said conductive contact rods at the said outer face of the plate pack so that thereby feed current supplied to any one of said conductive plates by its feed conductor will be subdivided among the conductive contact rods of its said group thereof and thus among the extension conductors in a corresponding group thereof which are electrically connected with these rods.

2. In an electric current-subdividing connecting device, in combination, a plate pack comprising a plurality of superimposed conductive plates, means adapted for electrically insulating said conductive plates from each other, the plate pack being provided with a field of holes extending through all of its conductive plates from face to face of the plate pack, a plurality of conductive contact rods respectively entering within a corresponding plurality of said holes from one of the

said outer faces of the plate pack, said conductive contact rods being arranged in groups with the rods of the different groups making contact with different conductive plates while all of said rods of any one group make contact with the same conductive plate, any one of said conductive contact rods being insertable in any one of said holes in the said field thereof in the plate pack, means adapted for electrically insulating each of said contact rods within a said hole from intervening conductive plates through which it passes in said hole, means for electrically connecting a feed conductor with each of said conductive plates, and means for electrically connecting an extension service conductor with each of the said conductive contact rods at the outer face of the plate pack from which said rod enters said hole so that thereby each said group of contact rods will supply current to a corresponding group of extension conductors from a conductive plate which receives current from one of the said feed conductors connected thereto.

3. In an electric current-subdividing connecting device, in combination, a flat field of exposed contacts, means for connecting an extension conductor to each of said contacts, a unitary removable and replaceable plate pack to be superimposed upon said field and comprising a plurality of superimposed conductive plates, means adapted for electrically insulating them from each other, means adapted for electrically insulating therefrom the conductive plate adjacent to said field of contacts, insulating means for binding said plates together in the plate pack, the plate pack being provided with a large plurality of holes extending into it from the face thereof adjacent to said field of exposed contacts with at least some of said holes extending through a plurality of said conductive plates, a large plurality of conductive contact rods each of which is disposed within one of said holes with its outer end in exposed position for abutting contact-making engagement with an aligned contact in said field thereof, said conductive contact rods being arranged in the plate pack in groups with the inner ends of the rods of the different groups making contact with different conductive plates while all of said rods of any one group thereof make contact with the same conductive plate, said conductive contact rods passing through intervening conductive plates in insulated relation thereto, a plurality of feed-conductor contacts having feed conductors for the respective said conductive plates connected thereto, and means for effecting abutting contact-making engagement of the respective conductive plates with respective feed-conductor contacts so that thereby current supplied by a feed conductor to any one of said conductive plates of the plate pack will be subdivided by its group of contact rods and supplied by these rods to a corresponding group of extension conductors through the engaged contacts in said field thereof.

4. In an electric current-subdividing connecting device, in combination, a contact-support provided with a flat outwardly exposed face having a field of tubular holes extending inwardly from said face, a field of extension-service contact members individually longitudinally slidable in said holes and exposed at the said exposed face of said contact-support, a spring mounting for each of said contact members by which the latter is resiliently yieldable to slide farther into a said hole and will then be pressed outwardly by said spring mounting, said contact-support hav-

ing a plurality of other tubular holes extending inwardly from its said exposed flat face outside the limits of said field, a plurality of feed-current contact members individually longitudinally slidable in the latter holes and exposed at the said exposed face of said contact-support, a spring mounting for each of said latter contact members by which it is resiliently yieldable to slide farther into a said latter hole and will then be pressed outwardly by its said spring mounting, and a unitary removable and replaceable current-subdividing plate pack to be superimposed upon said field of extension-service contact members at the exposed face of said contact-support in electrically interposed relation between said feed-current contact members and a selected number of said extension-service contact members, said plate pack comprising a plurality of superimposed conductive plates, means adapted for electrically insulating said conductive plates from each other, means adapted for electrically insulating therefrom the conductive plate adjacent to said field of extension-service contact members, insulating means for binding together all of the conductive plates in the plate pack, the plate pack being provided with a large plurality of holes extending into it from the face thereof adjacent to said field of exposed extension service contact members with at least some of said holes extending through a plurality of said conductive plates, a large plurality of conductive contact rods each of which is disposed within one of said holes with its outer end in exposed position for abutting contact-making engagement with one of said extension-service contact members in said

field thereof, said conductive contact rods being arranged in the plate pack in groups with the inner ends of the rods of the different groups making contact with different conductive plates while all of said rods of any one group thereof make contact with the same conductive plate, said conductive contact rods passing through intervening conductive plates in insulated relation thereto, a tongue extending from an edge of each of said conductive plates with no two of said tongues in alignment with each other transversely of the plate pack and with each of said tongues in alignment with one of said feed-current contact members, and a contact-making member extending from each of said tongues and abutable against one of said feed-current contact members.

5. In an electric current-subdividing connecting device, in combination, a multiplicity of extension service contact members, a group of feed-current contact members, a pack of superimposed individually insulated conductive plates, a feed-current conductive contact element carried by and in electrical connection with each of said plates and adapted to have contact-making engagement with respective said feed-current contact members, and a group of extension service conductive contact elements carried by said pack for each of said plates electrically connected therewith in multiple relation and each adapted to have contact-making engagement with one of said extension service contact members belonging to a selected group thereof.

CHARLEY BOWERS.

July 2, 1935.

W. S. BURGESS ET AL
 APPARATUS FOR DIFFUSING PYRETHRUM
 Filed Sept. 28, 1932

2,006,437

