

(No Model.)

B. NICHOLS.
MOVABLE ADVERTISING SIGN.

No. 583,074.

Patented May 25, 1897.

Fig. 1.

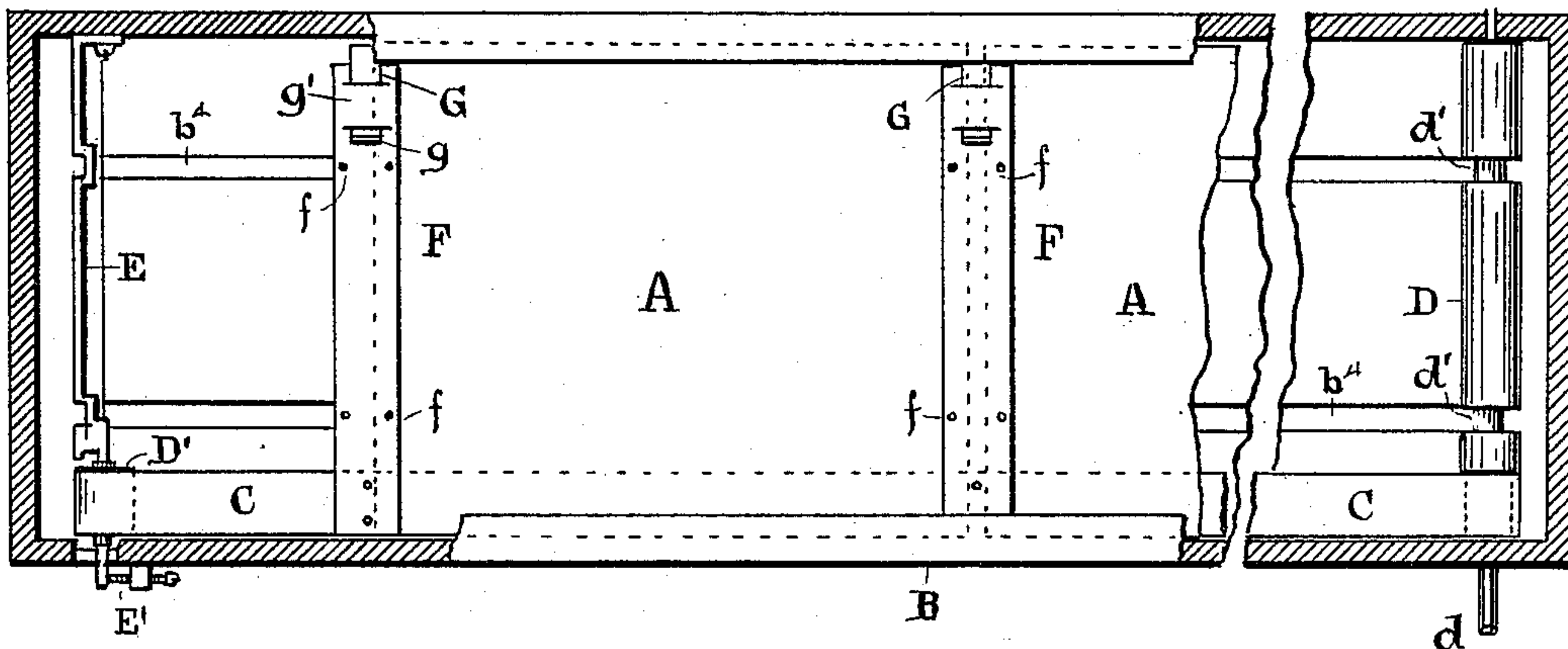


Fig. 2.

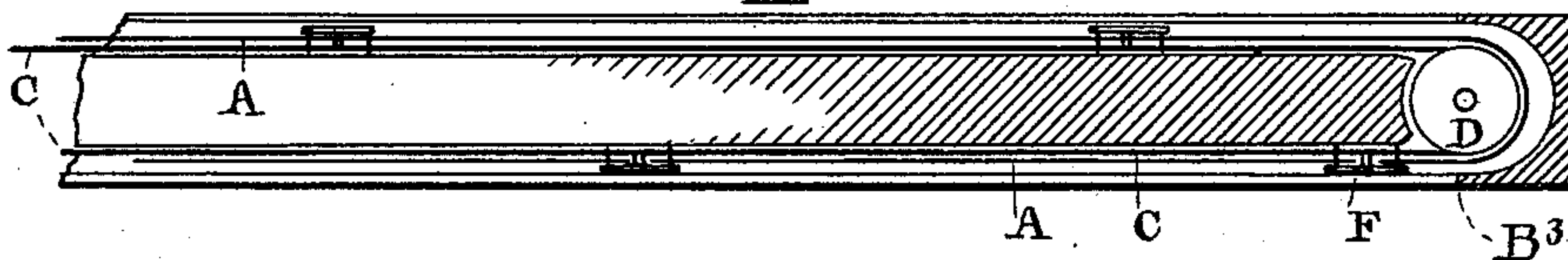


Fig. 3.

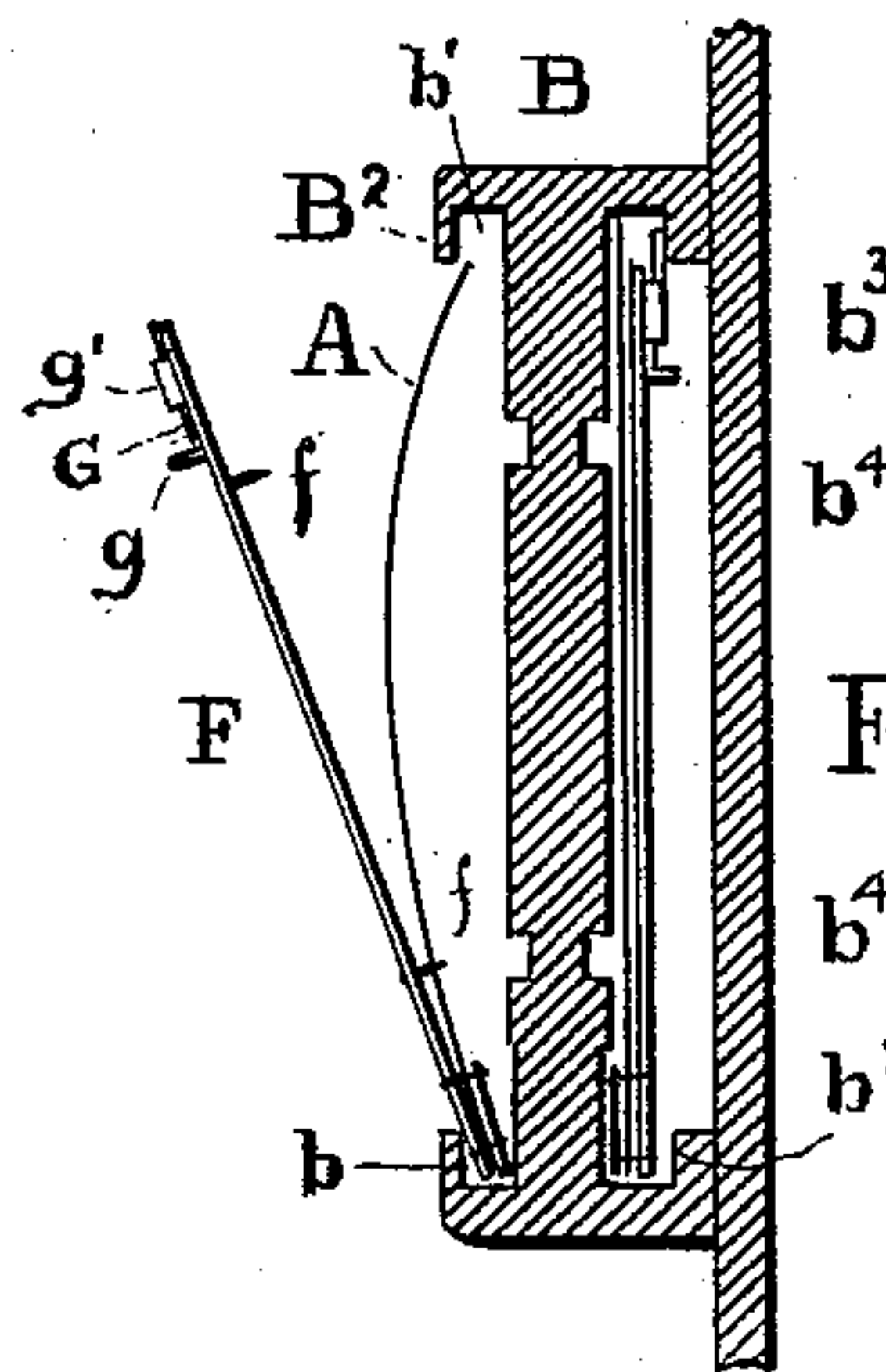
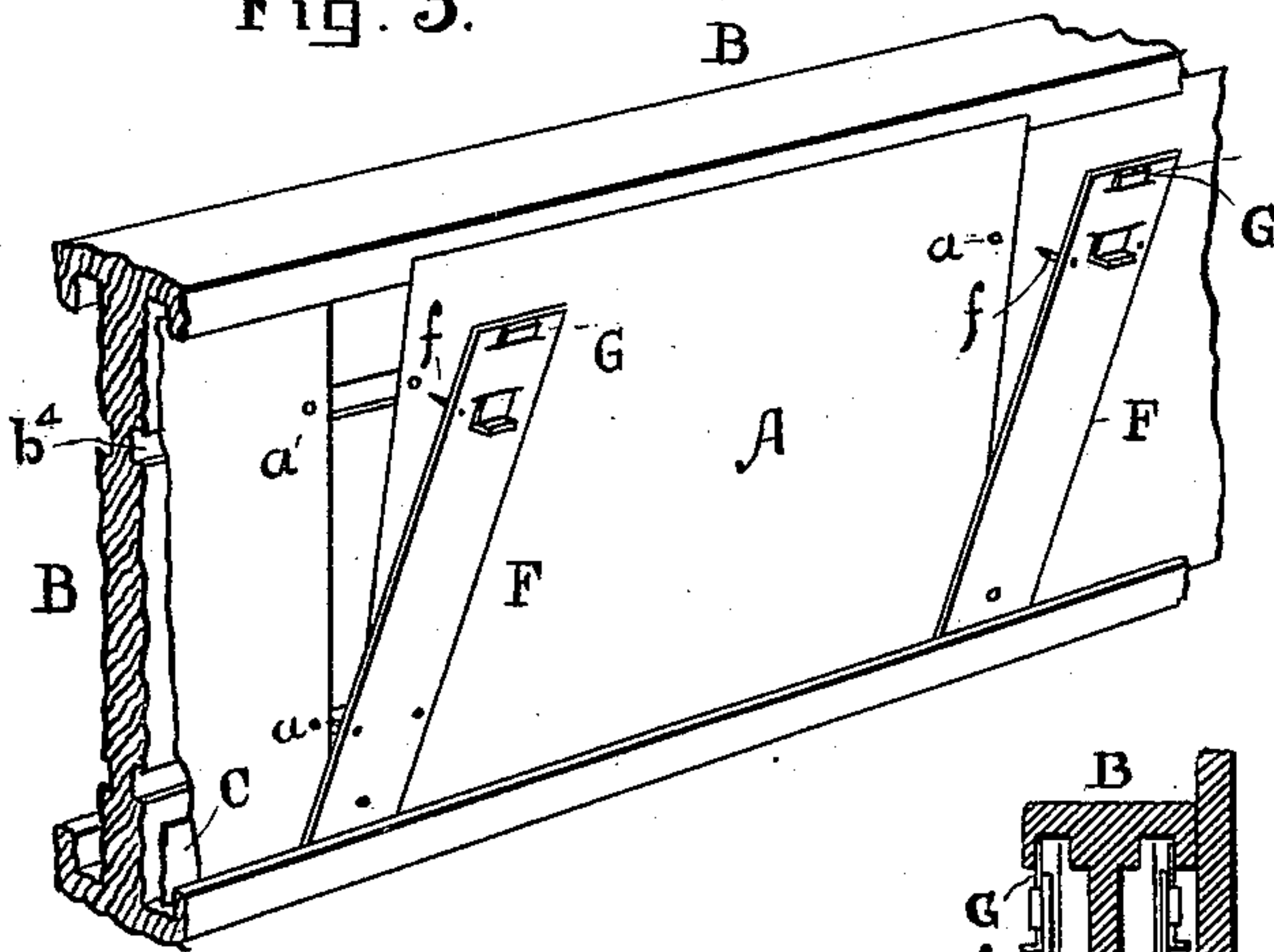
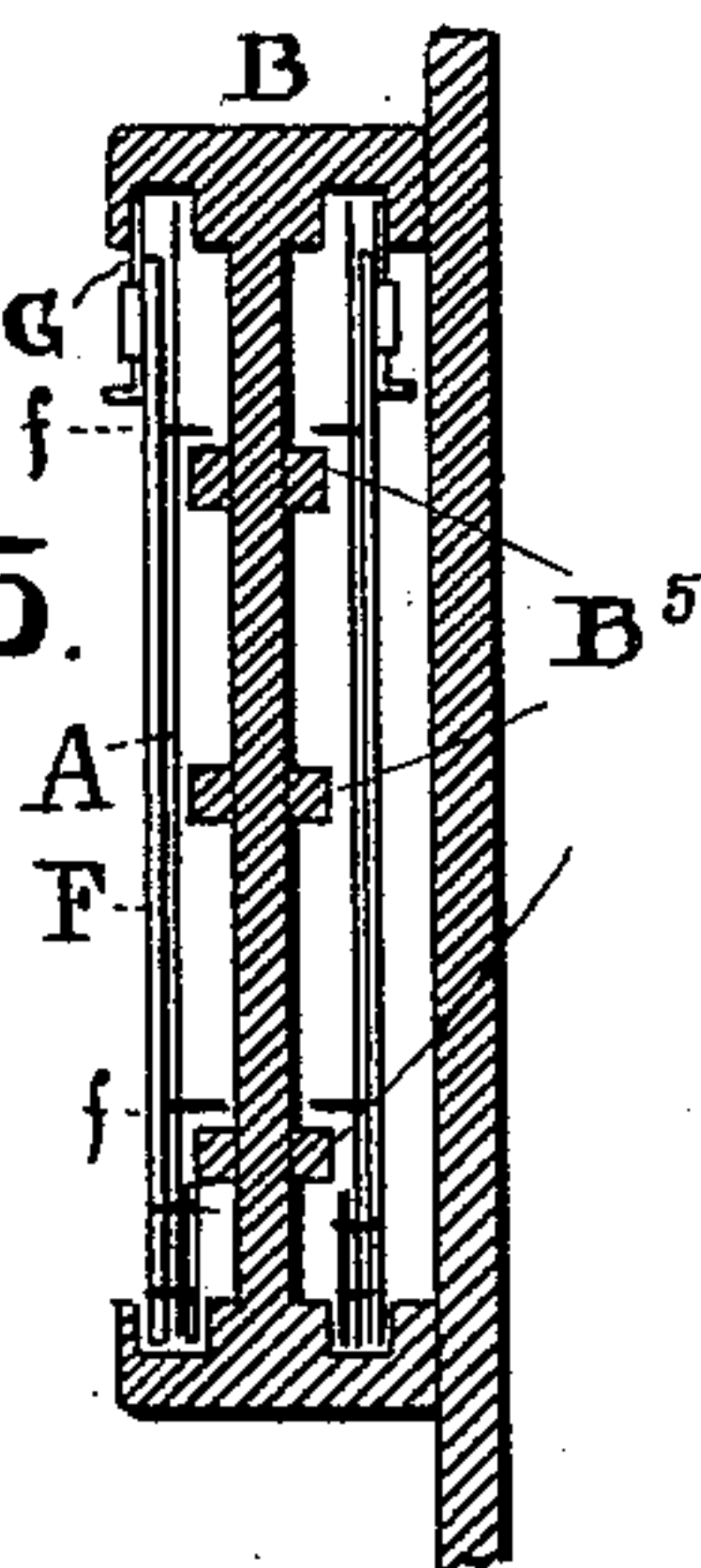


Fig. 4.

Fig. 5.



Witnesses,

E. G. Allen
Chas. H. Fogg.

Inventor,

Benjamin Nichols;
By C. B. Upham,
His Attorney.

UNITED STATES PATENT OFFICE.

BENJAMIN NICHOLS, OF REVERE, MASSACHUSETTS.

MOVABLE ADVERTISING-SIGN.

SPECIFICATION forming part of Letters Patent No. 583,074, dated May 25, 1897.

Application filed January 2, 1897. Serial No. 617,714. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN NICHOLS, a citizen of the United States, residing at Revere, in the county of Suffolk and State of Massachusetts, have invented a new and useful Movable Advertising-Sign, of which the following is a full, clear, and exact description.

The object of this invention is the construction of simplified means whereby the line of advertising-cards carried above the windows in a street-car can be kept in constant motion past the eyes of the passengers opposite, and in addition the arrangement of means whereby double the number of such cards may be carried as is now possible. In the patent for this purpose granted to me November 24, 1896, No. 571,882, is set forth a framework carrying a series of light frames with the advertising-cards therein, which frames are moved from end to end thereof, forward in one set of grooves and back in another, a set of switches being provided for shifting the frames from one set of grooves to the other.

In my present construction I do not mount the advertising-cards in frames, but adapt them to receive their motion of translation through the agency of a belt passing about suitable rolls at the ends of the grooves in which the cards travel.

In the drawings forming part of this specification, Figure 1 is an elevation, with parts broken away, of my arrangement. Fig. 2 is a horizontal section thereof. Fig. 3 is a perspective view of a portion thereof, showing method of inserting the cards. Fig. 4 is a cross-section showing the same thing. Fig. 5 is a cross-section at the same point, showing the card inserted.

Referring to the drawings, A A are the cards containing the advertising matter which it is desired to display.

B is the framework, having grooves $b b'$, in which said cards are movable.

C is the endless belt, by which said cards are moved. This belt I do not make the full width of the cards, but prefer to have it but an inch or two wide, and actuate it by means of rolls D D', about which it passes, one of which, as D, receives power through its shaft d from any suitable source. These rolls may extend the entire height of the frame, as D, or be of a width corresponding to that of the

belt. The roll D', I usually adapt to take up the slack or stretching in the belt by some form of adjusting device E', which is shown as a screw abutting against the prolonged journal of the roll, the upper part E thereof being sufficiently yielding to permit of the required adjustment.

The advertising-cards A are made sufficiently wide to enter both upper and lower grooves $b b'$, and are inserted therein by a slight flexure, as shown in Fig. 4. To enable them to partake of the motion of the belt C, I rivet or otherwise secure to the latter a series of thin but relatively broad arms F. These arms are of a length to enter the lower groove b and not quite reach the rim B^2 of the upper groove b' , as shown in Fig. 5. These arms may be of light wood or of thin sheet metal. The latter is the form illustrated in the drawings. To the upper end of each arm F is secured a similarly thin bolt G, adapted when pressed upward to enter the groove b' and retain said arms in position vertically, as shown in Fig. 5. When the arms F are of sheet metal, said bolts are held by outwardly-impressed sections g of the sheet metal composing the arms and are moved by means of the outwardly-bent tail-pieces g' . The object of this arrangement of said arms is to enable the cards to be inserted within the grooves, for the cards being of a length greater than the distance between the edges of the arms F and being further wider than the space between the groove-rims B^2 it would otherwise be impossible to place said cards in their required places. By, however, retracting the bolts of two neighboring arms F and inclining the latter forward, as in Figs. 3 and 4, the card can be dropped into the lower groove, then bent until its upper edge will enter the upper groove and the arms F then returned and the bolts pressed up, as in Fig. 5. To further insure the retention of the cards in position by said arms, I provide the latter with the pins f , adapted to enter small holes a in the cards, these pins being long enough to enter the grooves b^4 in the central part of the framework B, against which the backs of the cards contact. This prevents the cards A from escaping engagement with said pins. The holes a in the cards may be formed before

the cards are brought, or they can be punched by the pins *f* themselves when the arms are pressed back to their upright positions, said pins being pointed for the purpose.

5 The main object of the arms *F* is to protect the forward edges of the cards from scraping against the grooves when they pass about the rolls *D D'* and not only causing considerable frictional resistance, but wearing the
10 card edges themselves and endangering the entire structure from a possible buckling and stoppage thereat of the cards. Said arms thus protect and transport said edges with perfect ease and security about these vital points,
15 and in addition conceal the abutting edges of the cards and prevent their being bent outward by any sudden jar or blast of wind, and either being displaced therefrom, or, worse still, lodging against the vertical edges *B³* of
20 the framework and causing injury either to the apparatus or to themselves. A card is removed from its position in this arrangement in exactly the reverse manner in which it is inserted.

25 When the roll *D* is made of the full width of the cards, it is necessary to form therein the annular grooves *d'*, as shown in Fig. 1, in order to permit of the passage of the pins *f*, and if the belt *C* is of considerable relative
30 thickness it is necessary to diminish the diameter of the roll immediately beneath it in order that the back of the cards may rest flush against both it and the surface of the roll.

35 In case it is wished to make the framework *B* lighter than the construction described might seem to entail I build out the thin central partition by means of three or more slats *B⁵*, as in Fig. 5, making what is in effect the
40 grooves *b⁴*, previously described.

There are of course as many arms *F* as there are cards to be displayed and as many cards as will nearly equal the total length of the belt *C*. In case a double-length card is to be
45 displayed one of the arms *F* will be removed to make room therefor or else the card will be placed in front of such central arm and perhaps be fastened thereto.

50 What I claim as my invention, and desire to secure by Letters Patent, is as follows, to wit:

1. The combination of the cards, the framework having endless grooves receiving the upper and lower edges of said cards, the end-

less belt moving in said grooves, and the vertical arms secured to said belt and adapted to be secured over the lateral edges of said cards, whereby the latter are kept in motion by said belt and carried freely about the bends at the ends of the framework, substantially as set forth.

2. In an apparatus for displaying advertising-signs, the combination of the framework having endless grooves receiving the upper and lower edges of cards placed therein, rolls at the ends of said framework, an endless belt passing about said rolls, cards moved in said grooves by said belt, and means whereby the lateral edges of said cards are kept from contact with the sides of said grooves in passing about said rolls, substantially as set forth.

3. The combination of the advertising-cards, the framework having upper and lower grooves, the endless belt moving in the lower of said grooves, the vertical arms secured to said belt, and means for engaging and disengaging the upper ends of said arms from said upper grooves, for the purpose set forth.

4. The combination of the advertising-cards, the framework having upper and lower grooves, the endless belt moving in said lower grooves, the vertical arms secured to said belt and having pins adapted to penetrate said cards, and means for engaging and disengaging said arms from said upper grooves, for the purpose set forth.

5. The combination of the advertising-cards, the framework having upper and lower grooves, the endless belt moving in said lower grooves, the vertical arm secured to said belt, and the bolts for engaging the upper ends of said arms with the upper grooves, for the purpose set forth.

6. The combination of the advertising-cards, the framework having upper and lower grooves, the endless belt, the vertical arms secured to said belt and having pins, *f*, adapted to penetrate said cards, said framework being adapted to keep said cards in engagement with said pins, for the purpose set forth.

In testimony that I claim the foregoing invention I have hereunto set my hand and seal this 30th day of December, in the year 1896.

BENJAMIN NICHOLS. [L. S.]

Witnesses:

A. B. UPHAM,
CHAS. H. FOGG.