

(No Model.)

4 Sheets—Sheet 2.

H. S. PRENTISS.
DISPLAY DEVICE.

No. 477,382.

Patented June 21, 1892.

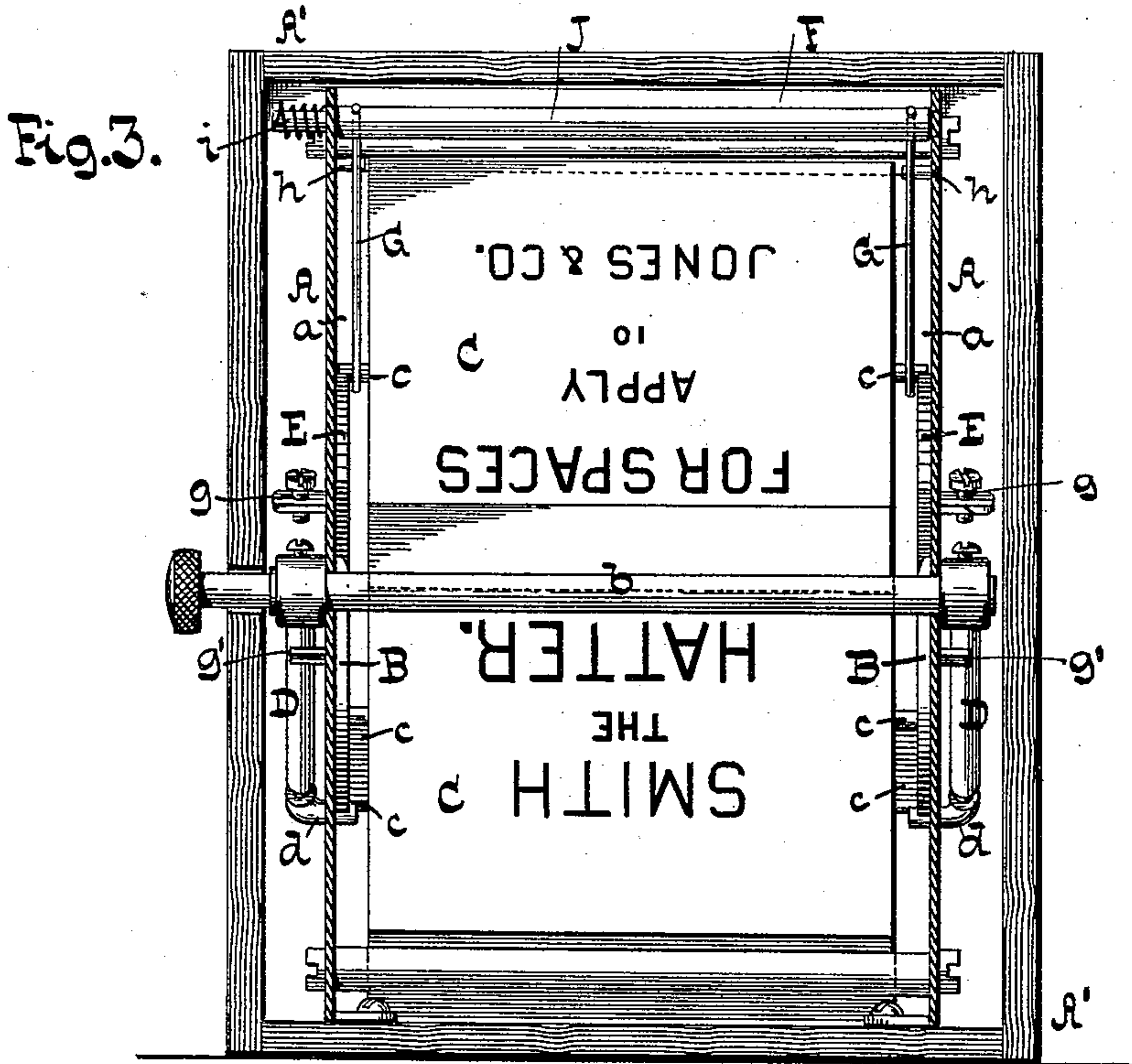
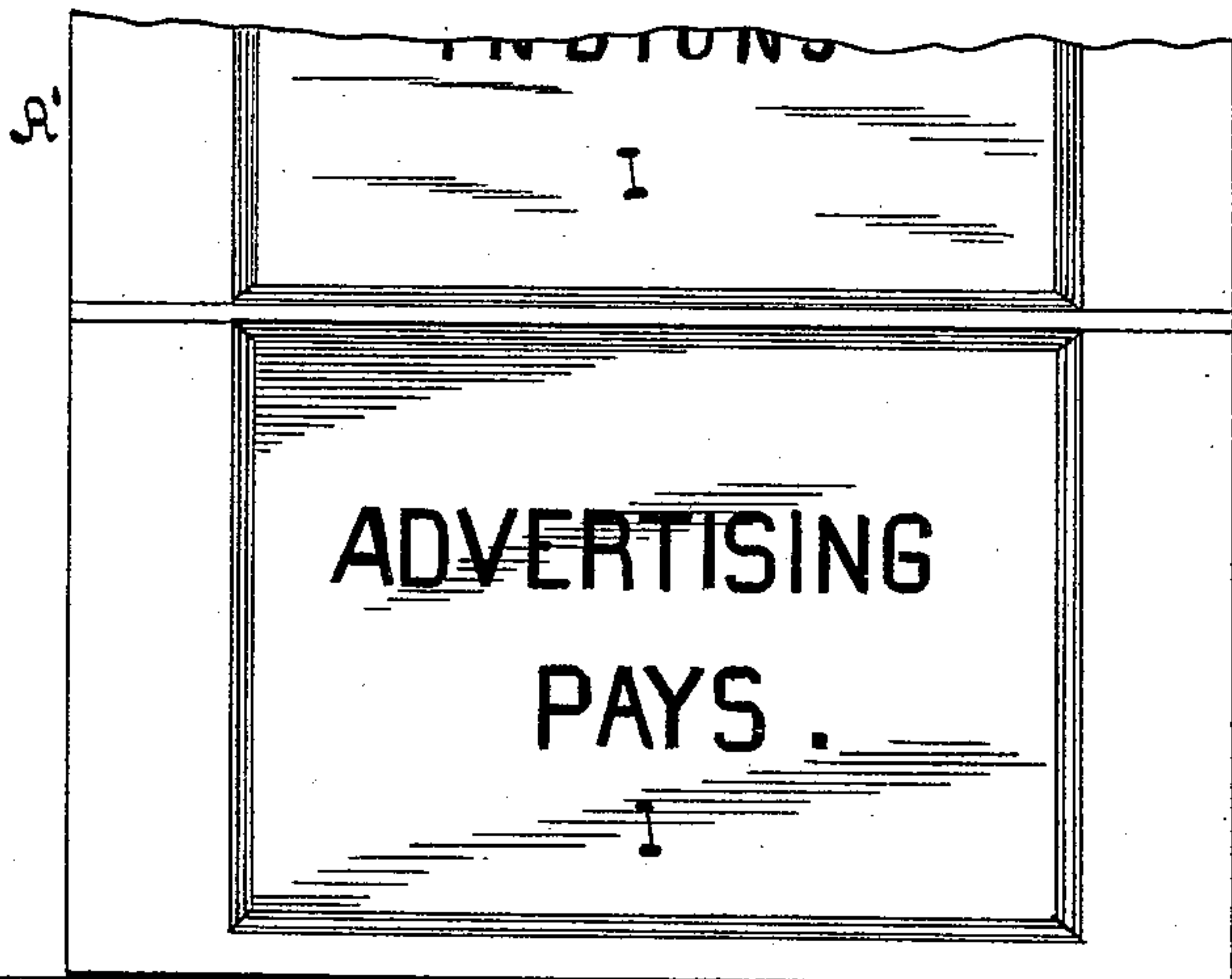


Fig. 4.



WITNESSES:

Wm H Birkmire
A. Faber du Faur

INVENTOR

Henry S. Prentiss
BY *A. Faber du Faur*
his ATTORNEY

4 Sheets—Sheet 3.

No. 477,382.

Patented June 21, 1892.

Fig. 5.

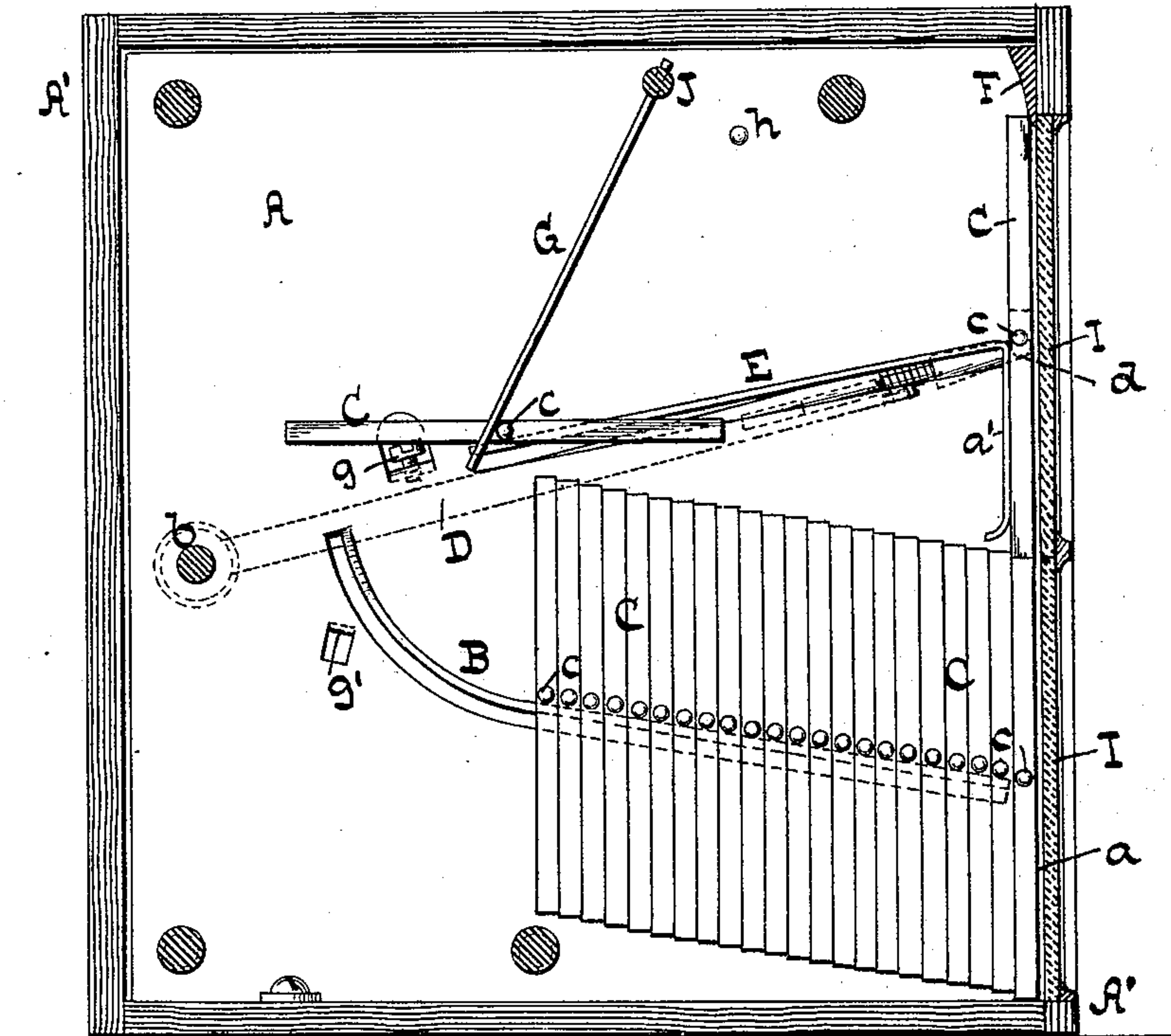
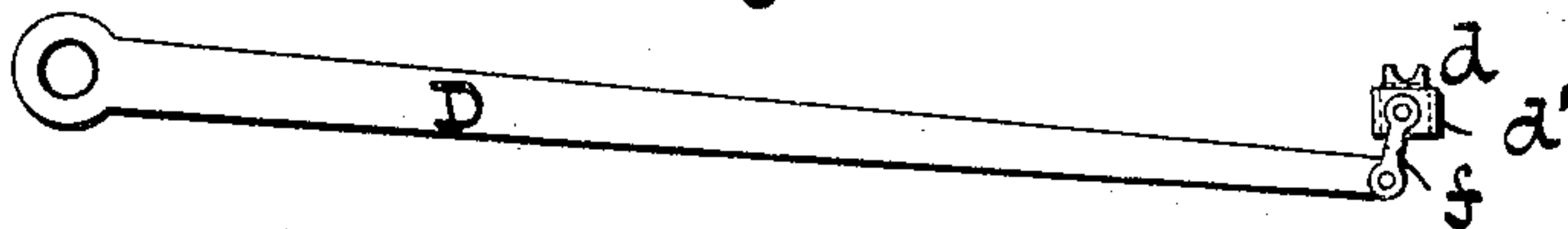


Fig. 6.



Fig. 7.



WITNESSES:
Wm. H. Birkmire
A. Ficker de Faurz

INVENTOR
BY *Henry S. Prentiss.*
A. Faber du Faur.
his ATTORNEY

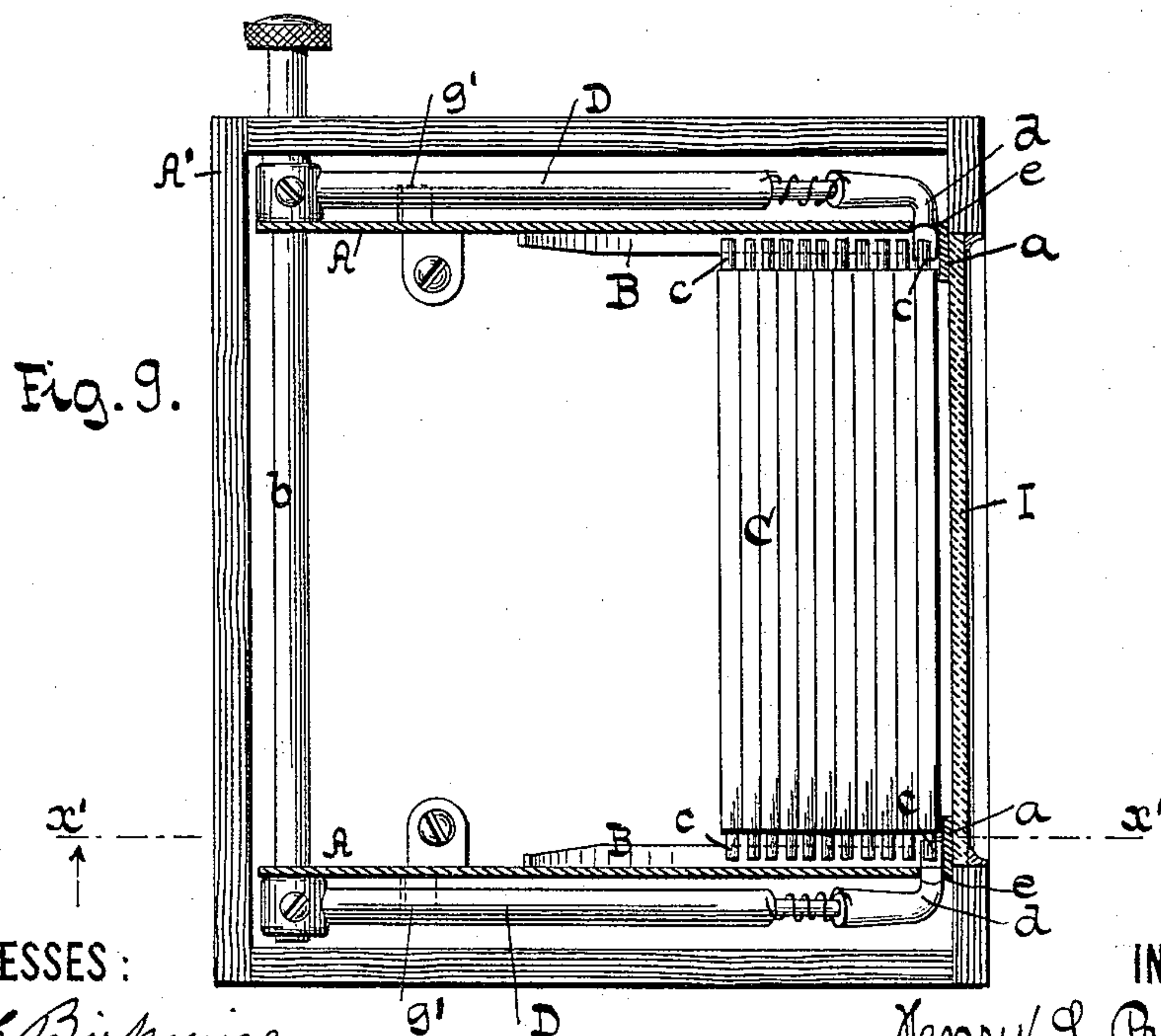
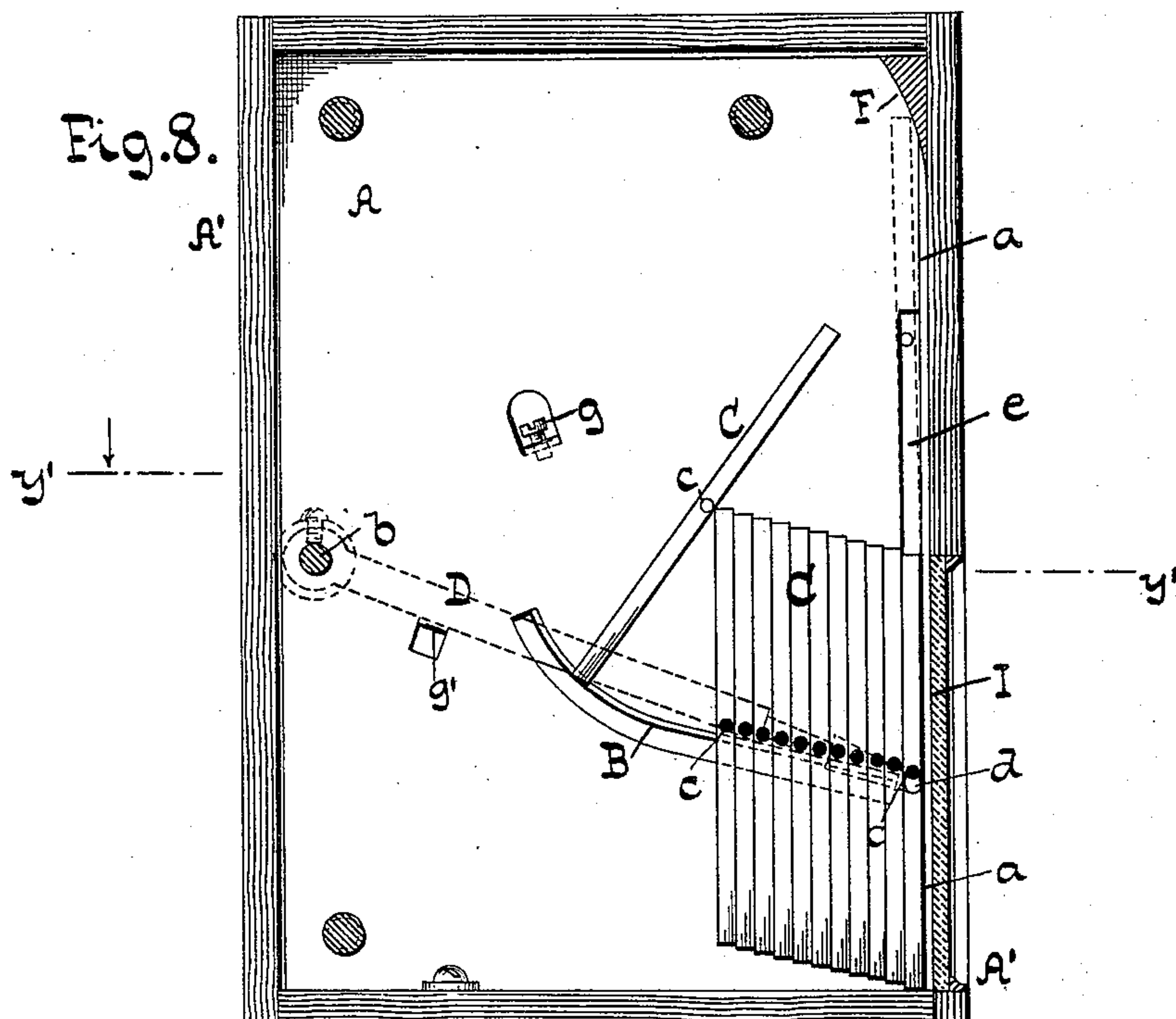
(No Model.)

4 Sheets—Sheet 4.

H. S. PRENTISS.
DISPLAY DEVICE.

No. 477,382.

Patented June 21, 1892.



WITNESSES :

Wm H Birkenire
H. Fisher du Fay

INVENTOR

BY *Henry S. Prentiss,*
Attorney at Law.
his ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY S. PRENTISS, OF ELIZABETH, NEW JERSEY.

DISPLAY DEVICE.

SPECIFICATION forming part of Letters Patent No. 477,382, dated June 21, 1892.

Application filed January 20, 1891. Serial No. 378,440. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. PRENTISS, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Display Devices, of which the following is a specification.

My invention has reference to improvements in display devices such as are used for advertising, for station-indicators, photograph-exhibitors, and for numerous other purposes; and it consists, essentially, in providing the several cards or plates to be successively exposed with pintles adapted to rest upon suitable supporting-rails, a device for withdrawing the cards one by one from one end of the body of the pack or series, the withdrawn card being delivered over the pack or series, reversed, and received at the rear of the same, all of which is more fully pointed out in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 represents a vertical section in the plane $x x$, Fig. 2, of a device constructed according to my invention. Fig. 2 is a horizontal section thereof in the plane $y y$, Fig. 1. Fig. 3 is a vertical section in the plane $z z$, Fig. 1. Fig. 4 is a front elevation with part broken away. Fig. 5 is a view similar to Fig. 1, the parts being in a different position. Fig. 6 is a detail view of one of the lifting-arms of the conveying device. Fig. 7 is a view of a modification thereof. Fig. 8 is a vertical section in the plane $x' x'$, Fig. 9, illustrating a modified form of the device. Fig. 9 is a horizontal section in the plane $y' y'$, Fig. 8.

Similar letters indicate corresponding parts.

In the drawings, referring at present to Figs. 1, 2, and 3, the letter A designates a suitable frame, preferably formed of two side walls rigidly connected.

B B are the supporting-rails formed opposite each other on the frame, upon which rails are assembled the cards C C, the latter being provided with central pintles $c c$, resting upon said rails. The rails B B are preferably inclined to cause the pack of cards to move bodily forward whenever the front card is removed, so as to bring the individual cards successively in the same vertical plane against a suitable stop or stops $a a$, which may be

formed by the edges of the front of the frame A being bent over.

The device for withdrawing one card at a time from the pack may be of any construction suitable for the purpose. In the example here illustrated I have shown the said device consisting of two arms D D, turning with a rock-shaft b , mounted in the frame A. The free ends of the arms are provided with laterally-projecting lips $d d$, passing through vertical slots $e e$ in the frame, the said lips being adapted to engage with the pintles of the forward card C. The arms are in this case made sectional and united by a spring-post and socket connection to allow the ends thereof to travel in a straight line and to permit the lips to clear the pintles on the downward stroke. Any other suitable means, however, may be provided for withdrawing one of the cards at a time. For instance, a slide d' , guided in the slot e and connected by a link f with the arms D D, can be substituted for the spring-socket and post connection, or instead of the oscillating arms a reciprocating device may be employed to act from above or below.

The motion of the withdrawing device or conveyer is limited in either direction by the respective stops g and g' on the frame, the upper stop g being preferably made adjustable.

E E are the return-rails placed at an inclination, to which rails the cards are successively raised by the conveyer, said rails being arranged vertically above the supporting-rails B B and made of such length as to conduct the cards to the rear of the pack.

F is a deflecting-plate arranged in position to engage with the upper front end of the card as the latter is raised and to deflect and throw it backward upon the return-rails E E when the pintles of the card are brought above the level of the forward ends of the said rails. Of course any other means could be employed for throwing the card upon the return-rails. The card thrown upon the return-rails descends the same by virtue of its inherent weight, assuming the approximately horizontal position shown in Fig. 5, and on reaching the ends of the rails drops upon the supporting-rails B B. In its transit from the return to the supporting rails it turns through

a second quadrant by reason of its forward side engaging with the pack of cards, about the end of which it turns as a fulcrum, and consequently the reverse face of the card is presented forward for subsequent exposure. In the ascent of the card its pintles may be guided and prevented from slipping off the lips *d d* by a guide *a'*, running parallel with the front *a* of the frame.

If desired, a suitable cradle may be provided to prevent the cards from turning askew as they descend the return-rails *E E*. As shown in the drawings, it consists of two arms *G G*, arranged in the same plane and pendent from a rock-shaft *J*, which are engaged by the pintles of the cards and carried along with the same in the descent of the cards, as shown in Fig. 5. When released by the pintles, the cradle is returned by a weak spring *i* to its normal position against a stop *h*, as shown in Fig. 1.

In the example illustrated in Figs. 1 to 5 of the drawings I have shown the device arranged to expose two cards at the same time, the one being the card held in its raised position and the other the card at the forward end of the pack. The case *A'*, into which the frame *A* is secured, is provided with a window *I* of sufficient dimensions to permit two cards to be exposed, and the motion of the lifting-arms is arrested when the pintles of the raised card are a trifle below the edges of the return-rails *E E*. The card now remains in this position, resting upon the edge of the forward card until the latter is raised, whereupon the said raised card falls and is conducted to the rear of the pack, as before. In case the number of the cards is small and the thickness of the pack does not exceed one-half of the depth of the case the return-rails can be dispensed with, as shown in Figs. 8 and 9. In this case the card after being lifted is deflected as before and in its fall clears the pack, and, making a half-revolution, takes its place at the rear of the pack.

It is evident that the lifting device can be actuated at determined intervals by a connection with a clock-movement or other motor in a well-known manner.

In the example illustrated in the drawings I have shown the various rails formed by cutting and striking up the metal from the body of the sides of the frame. However, it is evident that they could be cast thereon or made separate and secured thereto in any usual manner.

It is evident that instead of raising the card from the pack it could be permitted to fall

upon return-rails arranged below the supporting-rails and then lifted from the return-rails to the supporting-rails.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a display device, a series of cards provided with central pintles, inclined rails extending from the sight-opening and adapted to support the cards by their pintles, and a lifting device arranged to engage the forward card by its pintles and to raise it above the series, said card being delivered over the series, reversed, and received at the rear of the series, substantially as described.

2. In a display device, a series of cards provided with pintles, inclined rails extending from the sight-opening for supporting the cards by their pintles and feeding the same forward, inclined return-rails located above the supporting-rails, and a lifting device adapted to engage the forward card by its pintles and to deliver the same to the return-rails, said card being reversed in its descent on the return-rails and discharged therefrom upon the supporting-rails at the rear end of the series, substantially as described.

3. In a display device, a series of cards provided with central pintles, inclined rails extending from the sight-opening for supporting the cards by their pintles and for feeding the same forward, inclined return-rails, a lifting device adapted to engage the forward card by its pintles to deliver the same to the return-rails, and pivoted fingers engaging the pintles of the cards for guiding the same while on the return-rail, substantially as described.

4. In a display device, a series of cards provided with pintles, inclined rails for supporting the cards by their pintles and for feeding the same forward, inclined return-rails located above the supporting-rails, and a lifting device adapted to engage the forward card by its pintles to raise it from the series, which latter is caused to advance to bring the next succeeding card under the first to support the same in its elevated position, the subsequent lifting of the second card effecting the delivery of the first card to the return-rails, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 14th day of January, 1891.

HENRY S. PRENTISS.

Witnesses:

WM. H. BIRKMIRE,
A. FABER DU FAUR.