No. 892,389. PATENTED JULY 7, 1908.

B. F. BELLOWS.

CARD SHUFFLING DEVICE.

APPLICATION FILED APR. 18, 1906.

3 SHEETS—SHEET 1.

Fig. 2.

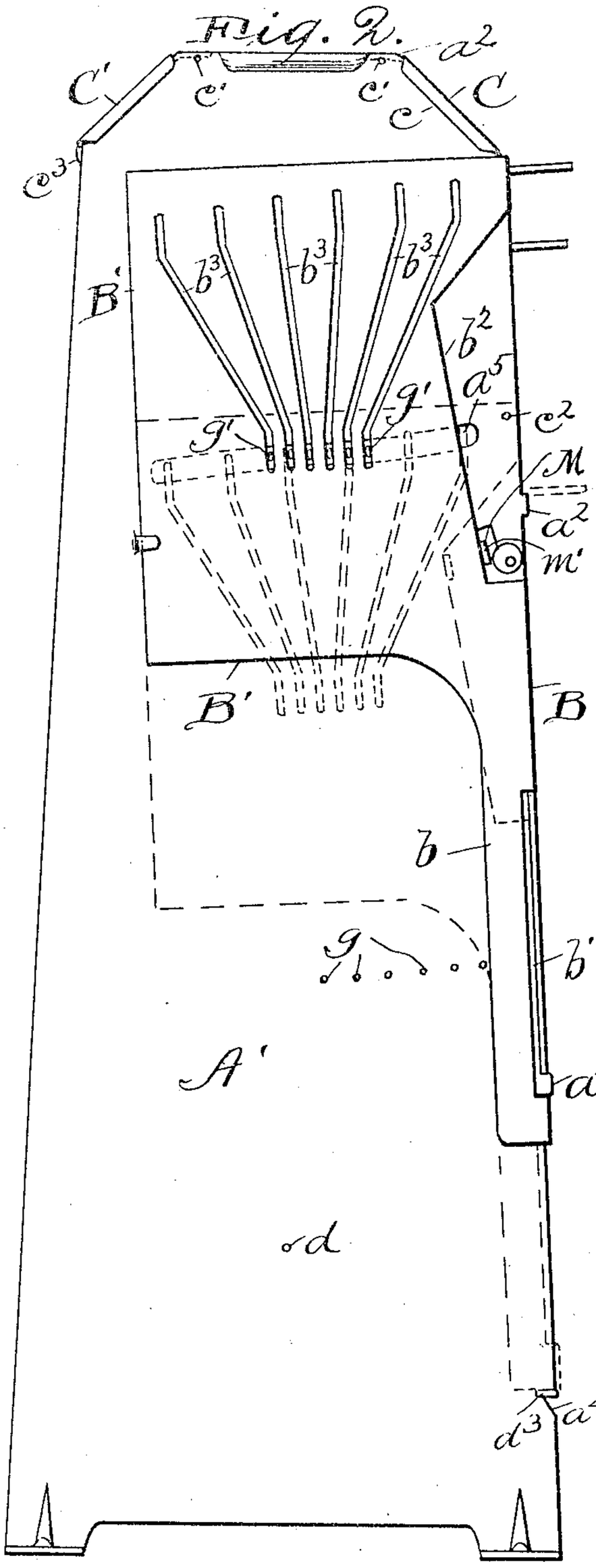
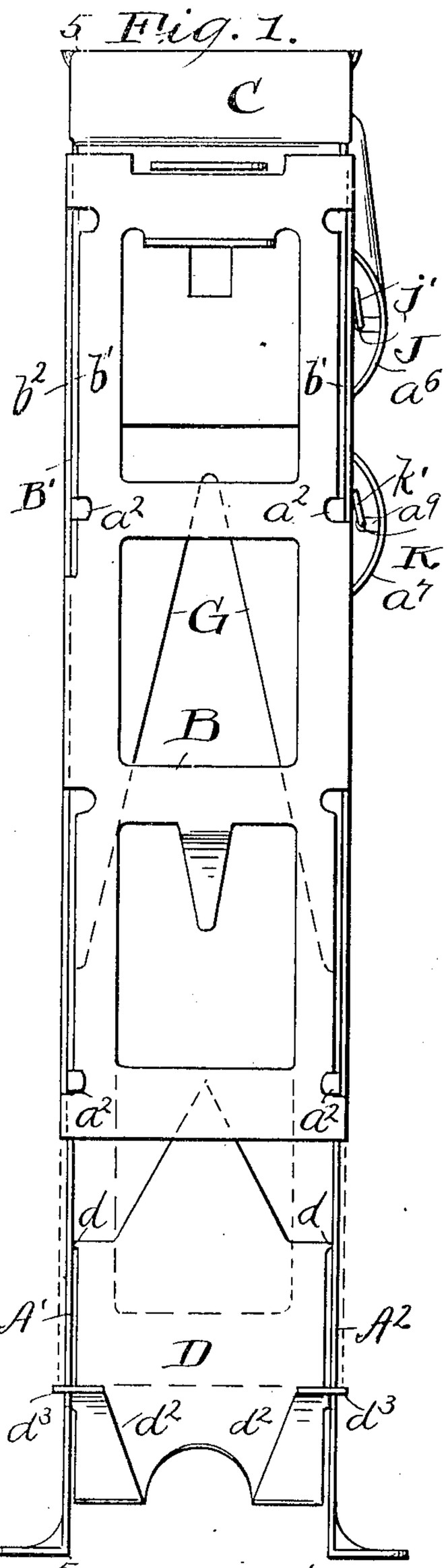


Fig. 1.



Witnesses.
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H B Sullivan.

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3 SHEETS—SHEET 2.

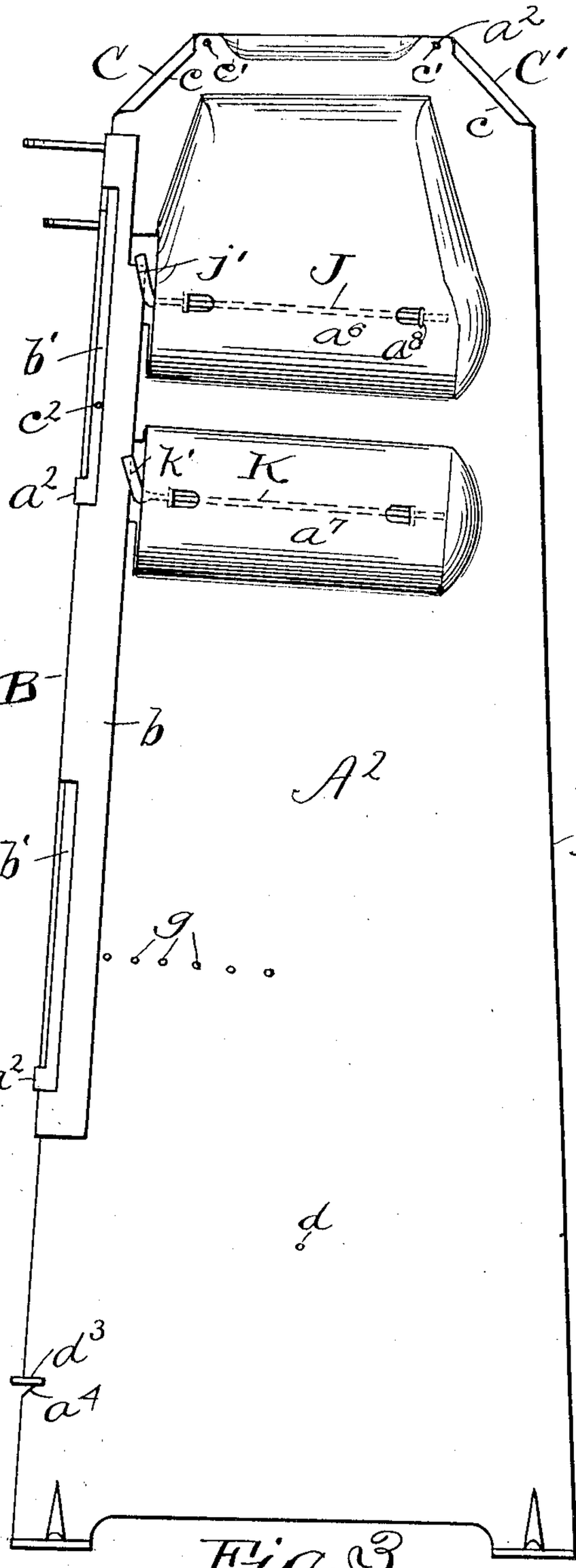

Fig. 3.

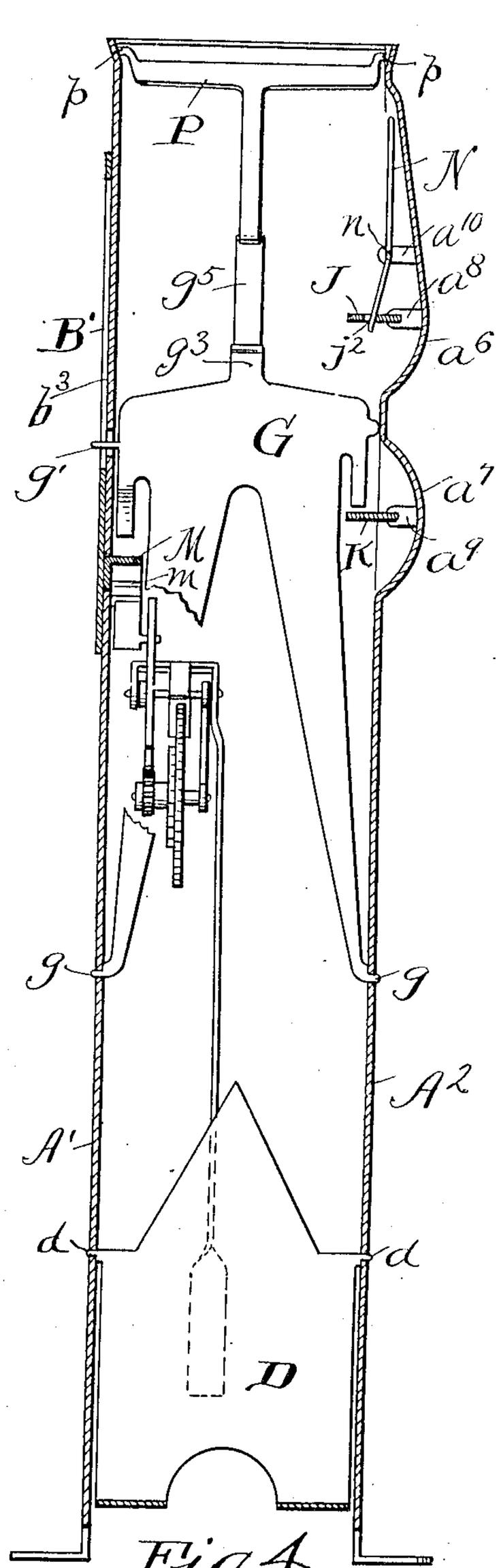

Fig. 4.

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3 SHEETS—SHEET 3.

Fig. 5.

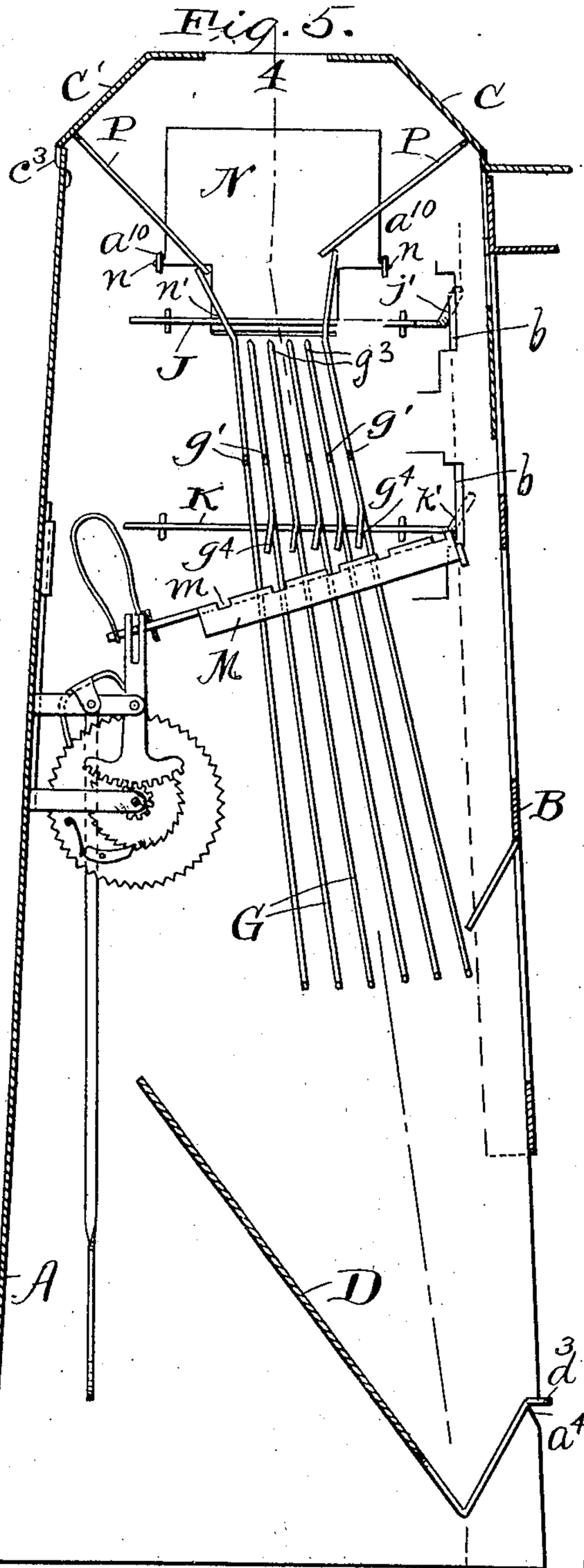
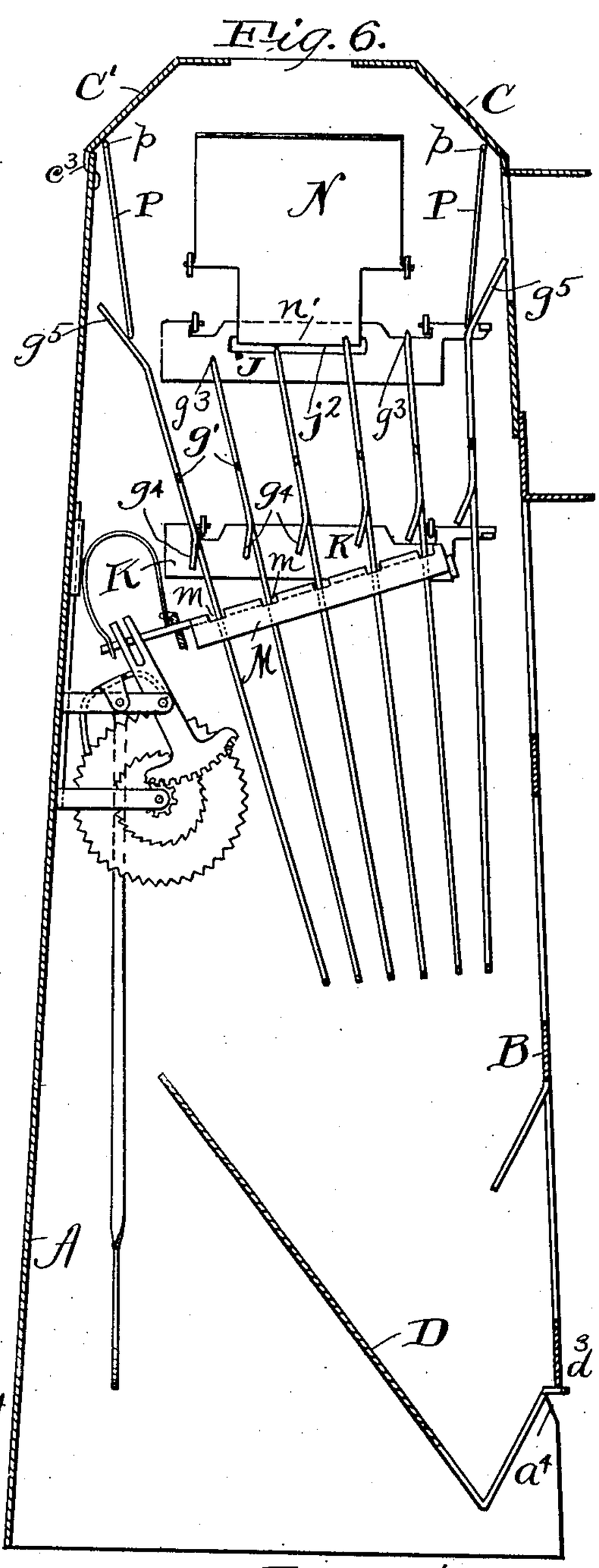


Fig. 6.



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UNITED STATES PATENT OFFICE.

BENJAMIN F. BELLOWS, OF CLEVELAND, OHIO.

CARD-SHUFFLING DEVICE.

No. 892,389. Specification of Letters Patent. Patented July 7, 1908.

Application filed April 18, 1906. Serial No. 312,317.

To all whom it may concern:

Be it known that I, BENJAMIN F. BELLOWS, 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 Card-Shuffling Devices, of which the following is a full, clear, and exact description.

This invention relates to improvements upon the card shuffling devices which form the subject matter of my prior patent No. 673,154, granted April 30, 1901.

The objects of the present invention are to simplify the construction and greatly reduce its cost, to prevent injury to the cards by the device, and to render the device certain in its action, mainly by providing safe guards which will prevent anyone from making use of the machine in any way except the proper way.

In the drawing, Figure 1 is a front elevation of the device. Fig. 2 is a view of the left side thereof. Fig. 3 is a view of the right side thereof. Fig. 4 is a central vertical sectional view in the plane indicated by line 4—4 of Fig. 5. Fig. 5 is a sectional view in the plane indicated by line 5—5 of Fig. 1 when the mechanism is in position to receive a pack of cards to be shuffled; and Fig. 6 is a sectional view showing the mechanism in the position it occupies just after a pack of cards has been shuffled.

The various parts of the device shown in the drawing, are connected together in operative relationship, substantially as shown, without using any screws, rivets or other independent fastening devices; and the construction of the various parts, whereby this result is accomplished, is one of the features of invention hereinafter claimed. There are, however, other features of the invention, as pointed out in the claims, which do not depend for the performance of their functions upon the characteristics of construction as referred to; that is to say, they are equally useful irrespective of the manner in which the parts of the device are connected together.

In the precise embodiment of the invention shown, the frame or casing includes the back A and the two sides A′ A^2 made integral with each other out of the one piece of sheet metal bent as shown; the vertical sliding front B; the top plates C, C′; and the shelf D on which the shuffled pack is received,—these parts being interlocked together by means of integral tongues, flanges, etc. substantially as shown. The top corners of the two sides A′ A^2 are inclined or beveled off as shown. The front top plate C rests on the beveled top edges of the two sides and has its own side edges bent down to form flanges *c* which engage with the outer faces of said sides A′ A^2 and prevent their separation. The upper horizontal part of this plate is fitted between the two top edges of the sides, and has fingers *c′* which project laterally therefrom into holes a^2 in the sides. The part of this plate below the flanges *c* is fitted between the sides A′ A^2 and has the laterally projecting fingers c^2 which enter small holes in said sides. The other top plate C′ at the rear of the frame has its edges turned over, as flanges *c*, against the outer faces of said sides, and its horizontal upper end is fitted between the top edges of said sides, and is provided with laterally projecting fingers *c′* which enter holes in the sides. On the lower edge of this plate C′, however, there is a narrow tongue c^3 which passes through a hole in the back plate and is bent over against the inner face thereof. This sliding front B has its vertical edges bent rearward as flanges *b* against the outer faces of the sides A′ A^2, whereby it prevents them from separating. It is held on said sides by the tongues a^2 which project forward and pass through vertical slots *b′* in the slide and are bent over against the front face of the sliding front B.

Integral with the sliding front B is a plate B′ which lies against the outer face of the side A′. The front edge b^2 of this plate is slightly inclined in an upward rearward direction; and in said plate are a number of slots b^3 which diverge from their lower ends upward.

The shelf D on which the shuffled pack is to be received lies between the two sides A′ A^2 near their lower edges and it has at its rear edge two laterally extended fingers *d* which enter holes in the sides. The main body of this shelf is inclined forwardly and downward; but the front edge thereof is bent upwardly and forwardly in the form of two

tongues d^2 having at their front ends outwardly extended notched fingers d^3 which lie in notches a^4 in the side and engage with the outer faces of said sides, thereby holding the lower parts of said sides from spreading.

Within the frame are a plurality of movable partitions G. These are pivoted to the sides by means of laterally projecting fingers g on the lower edge of each side, which fingers enter holes in the sides. Near their upper ends and on one side these partitions have the laterally extended fingers g' which pass through a substantially horizontal slot a^5 in the side A′, and respectively enter the inclined slots b^3 in the plate B′.

The side A^2 is swelled out at a^6 and at these points is provided with inwardly bent ears a^8, a^9, which serve as bearings respectively for loops j and k on the edges of the shelves J and K. These shelves are severally provided with crank arms j', k', which project out of the frame into the path of the flange b on the right side of the slide B; and this flange, by engaging with these crank arms, holds the two shelves J and K in a horizontal position projecting into the casing, so that a pack of cards put into the top of the casing will be intercepted by said shelves in their downward movement.

Near its upper edge the flange b is cut away so that when the sliding front B is moved downward it passes out of engagement with the crank arm j' and thereby leaves shelf J free to turn; and it is turned down by its weight. As the sliding front moves further down the crank arm k' is released and the other shelf K allowed to drop.

On the inside of the case, but lying against the left side thereof, is a card supporting shelf M, which projects into the downward path of said cards; and the shelf is provided with a plurality of notches m. This shelf is slightly inclined downward from the front to the rear of the casing whereby said cards when resting upon said shelf tend to slip rearward. This shelf is movable lengthwise and is under the influence of a spring tending to move it rearward; and this rearward movement is governed by an escapement mechanism similar to that shown in said prior patent. This shelf is slidable forward and backward at the slight inclination described, and it has on its front end an outwardly turned finger m' which engages with the inclined front edge b^2 of the plate B′.

When the sliding front B is in its elevated position the cards are put into the casing through the mouth at the top thereof between the proximate edges of the top plates C C′. They temporarily rest upon the shelf J. When said sliding front B and the plate B′ are moved down, the slide M is freed from restraint, and its slow rearward spring-actuated movement begins. The sliding front B first releases the shelf J, whereupon the pack of cards drop onto the shelf K. In reaching this position the little upwardly extended tongues g^3 on the top edge of the partitions G are projected into the pack and divide it into, in the present case, five divisions. As the sliding front B continues its downward movement these partitions are spread apart at their upper ends by the inclined slots b^3 in plate B′, thereby separating said five divisions of the pack, and simultaneously the shelf K is allowed to drop, whereupon the separated divisions of the pack fall upon the shelf M, which is at this time moving rearward slowly. When the cards fall upon it they fall upon the shelf M, but each of the divisions of the pack falls toward the rear of the particular compartment in which it is, being impelled to so fall, in part by the inclination of shelf M, and in part by little rearwardly bent tongues g^4 on the swinging partition G. The parts of the shelf M on which the several divisions of the pack fall are behind the several notches m in said shelf; therefore as said shelf is slowly moved rearward, it brings said notches beneath the cards in the several divisions of the pack, whereupon said cards fall through said several notches onto the shelf D,—there being an almost simultaneous fall of the forward card in each division.

If a pack of cards were put into the device when the sliding front B is down or when, in fact, it is in any position, except its most elevated position, the cards will not be shuffled, but will for most part become stuck in the machine, on or above the shelf M. If, under these conditions, an attempt be now made to lift the sliding front B, it will be found that it is practically impossible to do that without tearing some of the cards. It is, therefore, desirable that means be provided for preventing putting cards into the machine until the same is restored to the position in which it should be in to receive the pack of cards. Two of these preventing means are provided. One of them consists in downwardly prolonging the sliding front B so that, when it is down, its lower edge substantially rests upon the front part of the card receiving shelf B, and thereby prevents the removal of the shuffled pack resting upon said shelf. In order to get the pack out, therefore, for use it is necessary to first lift the slide, and usually when one lifts the slide sufficiently for the described purpose, he will lift it as far as possible. Another restraining device is in the form of a plate N having near its lower edges, endwise projecting pins n which enter holes in the inwardly turned lugs a^{10}, thereby pivoting this plate at its lower edge to the right side of the machine on a substantially horizontal axis. When this guard plate is not positively held back against the side A^2, it will fall by gravity partly across the mouth of the device, and thus prevent the introduc-

tion of a pack of cards into the device. This plate has a downwardly projecting tongue n' which passes through a slot j^2 in the shelf J, whereby when said shelf is in its horizontal position, as it is when the front slide is up, this guard plate is moved back out of the way of the cards. When this shelf is allowed to fall, this guard plate is also allowed to and does swing so as to partly block the entrance to the mouth of the device as above described.

Two guide arms P are pivoted within the casing by means of fingers p projecting laterally from their upper edges and extended into holes in the sides of the casing. The lower edges of these fingers engage with the inner faces of upwardly projecting fingers g^5 on the outside partitions G, and therefore these fingers P, P serve to guide between said outside partitions all of the cards of a pack put into the mouth of the casing.

Having described my invention, I claim:

1. In a card shuffling machine, a casing comprising integral back and sides and a vertically movable slide which serves as the front of the frame and has its vertical edges bent backward against the outer faces of said sides, and has vertical slots at the angle between said flanges and the front part of said slide, and means guiding said sliding front, and holding it on the sides.

2. In a card shuffling machine, a casing comprising integral back and sides and a vertically movable slide which serves as the front of the frame and has its vertical edges bent backward against the outer faces of said sides, and has vertical slots at the angle between said flanges and the front part of said slide,—the said sides having integral tongues which pass through said slots and are bent over onto the slide.

3. In a card shuffling machine, a casing comprising integral back and side plates, means preventing the lateral spreading of the upper parts of said side plates, card shuffling mechanism within said casing, and a forwardly and downwardly inclined card-receiving shelf between said side plates near the bottom thereof, which shelf has at its inner end laterally projecting fingers which pass through holes in the side plates, and has an upwardly bent forked front end provided with laterally extended notched fingers, and said sides having notches into which said notched fingers project in interlocking engagement.

4. In a card shuffling machine having in its upper end a mouth to receive a pack of cards and having at a distance below said mouth means for automatically dividing the pack and causing the cards to drop one by one from the several divisions, and a blocking device within the casing near the upper end thereof and adapted to fall by gravity partly across the mouth of said casing, and mechanism which, when the card shuffling mechanism is returned to its normal position, moves said blocking plate back from beneath said mouth.

5. In a card shuffling device, the combination of an upright casing, with a vertically sliding plate B′ on the outside of said casing having in it vertically diverging slots and one inclined edge, a series of dividing partitions within said frame pivoted near their lower edges to the sides thereof, said partitions having fingers near their upper edge which project laterally through a slot in the casing into said diverging slots, and a downwardly and rearwardly inclined notched shelf supported by the casing and having a finger which projects through said slot in the casing into engagement with the inclined edge of said sliding plate, a spring acting to move said shelf rearward and to hold its finger in contact with the inclined edge of said plate.

6. In a card shuffling device, an upright casing comprising a back and side plates and a vertically slidable front, card shuffling mechanism within the casing adapted to be set in operation and returned to its normal position by the vertical movements of said sliding front, and a card receiving shelf within said casing located at such point that when the sliding front is down it closes the opening in the front of the casing through which the cards must be removed from said shelf.

7. In a card shuffling machine, a casing comprising integral back and side plates and a vertical slidable front and a sliding plate lying against the outer face of one side of said casing and integrally connected with said sliding front, and card shuffling mechanism controlled by said side plate.

8. In a card shuffling machine, the combination of a casing having at its upper end a receiving mouth and below that card shuffling mechanism, and a shelf pivoted to the side of the casing just above the shuffling mechanism and having an operating arm with a vertically movable slide, which, when in its elevated position, engages with said operating arm and thereby moves the shelf into horizontal position, and which, when moved downward, releases said operating arm and permits the shelf to drop.

9. In a card shuffling machine, the combination of a casing having a receiving mouth at its upper end, diverging partitions within said casing, a rearwardly movable notched shelf extended into the casing in the path of a pack of cards introduced into said mouth, a shelf normally extending into the path of the downwardly moving pack of cards and located in a plane just above said slotted

shelf, a spring for moving the slotted shelf rearward, a vertically movable slide, and mechanism whereby said slide in its downward movement swings said diverging partitions, releases the slotted shelf to the action of its spring and occasions the movement of the other shelf out of the path of said cards.

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

BENJAMIN F. BELLOWS.

Witnesses:
E. L. THURSTON,
E. B. GILCHRIST.