Feb. 19, 1929. 1,702,748

J. B. RUFFALO

CARD CLASSIFYING APPARATUS

Filed Oct. 26, 1925 2 Sheets-Sheet 1

Fig. 1.

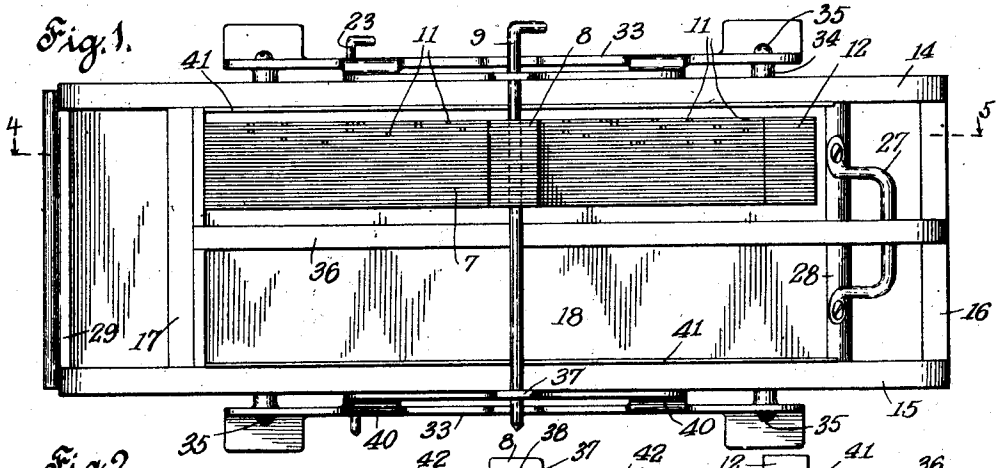


Fig. 2.

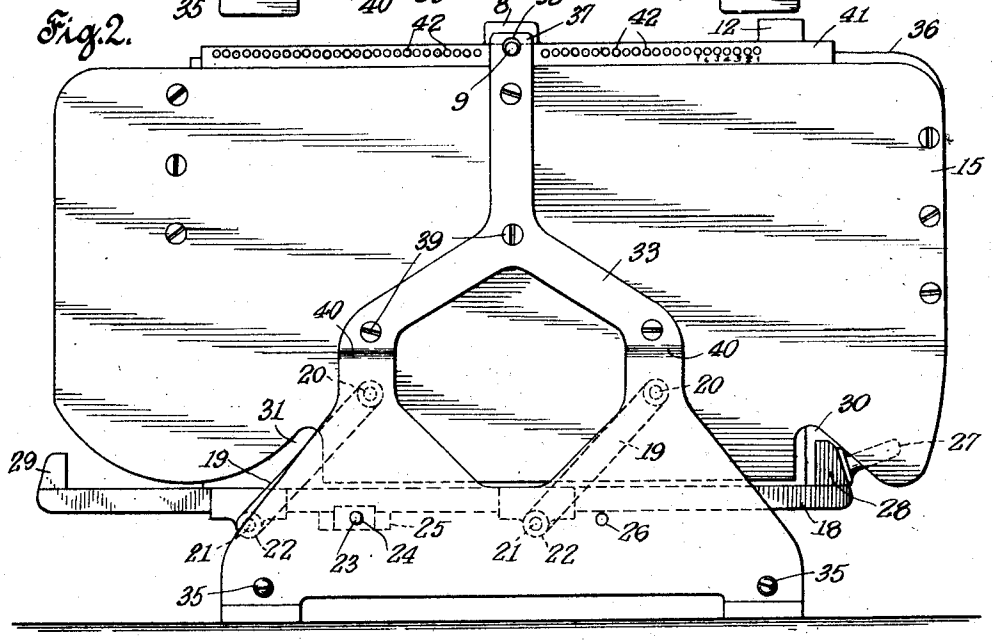
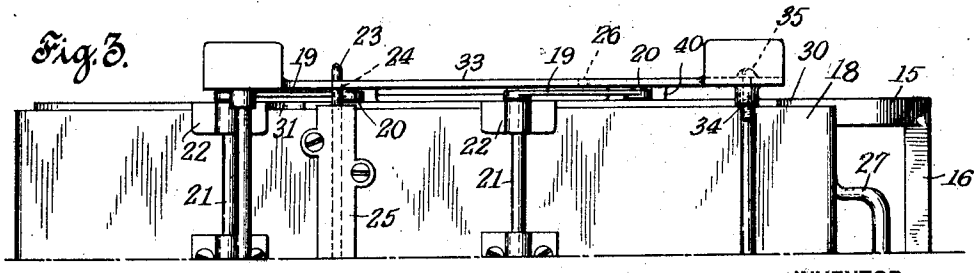


Fig. 3.



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Fig. 4.

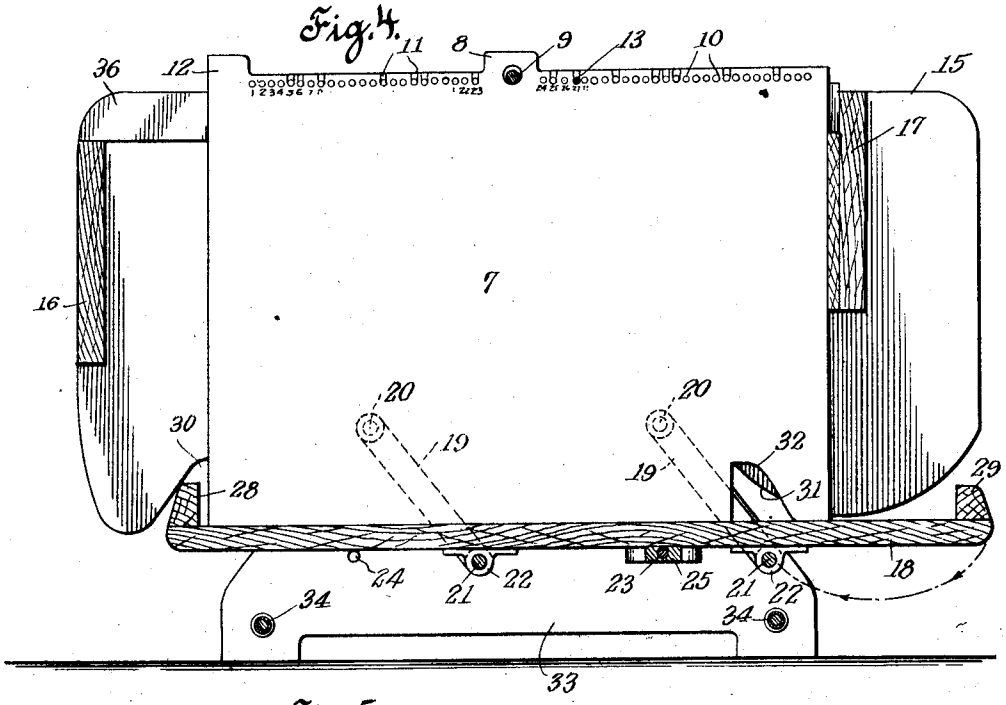
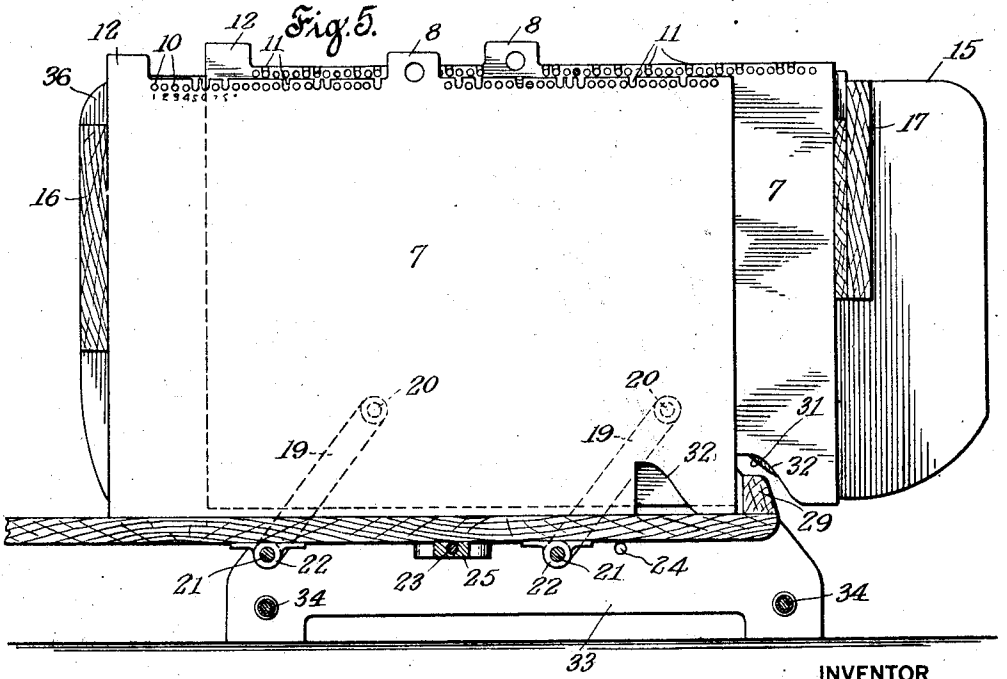


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CARD-CLASSIFYING APPARATUS.

Application filed October 26, 1925. Serial No. 64,712.

The objects of the present invention are to provide simple and effective mechanism for classifying and sorting cards in accordance with their different significance or the information which they carry and to provide such apparatus in the form of a convenient file or holder for the cards.

Additional objects and the many novel features of construction, combinations and relations of parts by which the same are attained will appear in the course of the following specification.

In the drawings accompanying and forming part of the specification, one practical commercial embodiment of the invention is disclosed and it will be understood that other structural embodiments may be made without departure from the spirit and scope of the invention as hereinafter disclosed and broadly claimed.

Figure 1 is a plan view of the apparatus showing one set of cards in the machine, secured in locked relation.

Figure 2 is a rear view of the device showing the movable sorting shelf or bottom secured in the initial or normal position.

Figure 3 is a part bottom plan view of the device.

Figures 4 and 5 are vertical sectional views on substantially the line 4—5 of Figure 1, showing the movable bottom first in normal position and secondly, shifted to offset and separate the cards into groups.

The cards or sheets are indicated at 7 and are shown all provided with perforated tabs 8 to receive a pin 9 for locking them in registered relation.

For classification purposes the cards are provided along their upper edges with rows of index perforations 10 which are usually numbered or otherwise identified. As the classification changes, these perforations may be opened into slots as indicated at 11. Tabs 12 for the number, name or other identifying characteristics are shown provided at the upper left-hand corners of the cards.

The cards may be used for different purposes and may carry different forms of information. In a typical example, such cards are used in the accounting systems of department stores, the identifying tab of each card bearing the customer's name or number and showing on its face the buying activities of such customer as regards the different departments in the store. The classification perforations 10 are numbered or otherwise designated to correspond with the various departments, the condition of the perforations depending upon the patronage of the various departments by that customer. For example, as the customer is induced by solicitation or advertising to patronize the different departments, the perforations representing such departments are opened into slots 11 providing a key by which through the aid of a suitable classifying instrument, the cards may be separated or grouped according to patronized and unpatronized departments.

In the example illustrated in Figures 4 and 5, a classifying pin or rod 13 has been inserted through the key perforations of department 27 so that as a relative shifting of the cards is effected, the cards which show a lack of patronage of that department will be held by the key pin 13 while the balance of the cards, with the open slots at that perforation indicating patronage of such department, will not be held and so can be shifted or "offset" with respect to the held group.

The machine by which the offsetting is effected comprises an open top box having front and back walls 14, 15 connected by end walls 16, 17. This box has a movable bottom or shelf 18 supported by swinging links 19 pivoted to the sides of the box at 20 and connected in pairs by shafts 21 journaled in bearings 22 on the bottom of the shelf.

The normal or initial position of the swinging bottom is that shown in Figures 1 to 4, occupying a position at the right in Figure 4 and releasably held in that relation by a securing pin 23 inserted through openings 24 in the front and back of the device and extending through a socket 25 provided for the same on the lower side of the swinging bottom. This same pin 23 is also used for holding the bottom swung into the reverse or left-hand position shown in Figure 5, by inserting it through properly positioned guide openings 26 in the front and back of the device after the shelf has been swung to bring the socket 25 into registry therewith.

A handle 27 is shown provided at one end of the shelf or bottom for swinging the same and stops 28, 29 at the ends of the shelf provide gages for lining up the edges of the cards. The lower edges of the face boards are shown notched at 30, 31 to re-

ceive the edge gages 28, 29 and similarly, the lower edges of the cards are shown notched at 32 to receive gage 29, Figure 5.

The ends 16, 17 serve to brace the front and back walls 14, 15 in properly spaced relation and these walls are shown supported at a height to permit free swinging movement of the bottom by the front and back plates 33 secured directly to the front and back walls and braced apart in properly spaced relation by spacing tubes 34 in which screws 35 are seated. These screws, as shown particularly in Figures 1, 2 and 3 extend from the outside through the lower supporting or feet portions of the brackets into the ends of the spacing tubes. The spacing tubes and end walls thus provide a positive means for rigidly spacing the front and back walls so that with end walls and spacing tubes of required length, a box of any desired capacity can be made up. One or more longitudinal partitions 36 may be provided extending between the end walls as indicated in Figure 1.

The end plates or brackets 33 form in effect a frame work for bracing and supporting the box structure and also carry the bearings 24, 26 for the pin 23 which secures the swinging bottom. Projecting lugs 37 at the upper ends of the brackets carry bearings 38 for the card-locking pin 9. The brackets are shown as attached to the front and back sides of the box by screws 39 and below such points of attachment the brackets are shown formed with a lateral offset 40 spacing the lower portions of the brackets away from the sides of the box to provide clearance for the swinging links 19.

To guide and support the selecting pin 13, indicator plates 41 are shown provided at the front and back of the box having numbered or otherwise identified perforations 42 with which the perforations in the cards aline when the cards are in register.

The normal or initial position of the apparatus is that shown in Figures 1 to 4 with the bottom 18 swung to the left in Figs. 1 to 3 or to the right in Fig. 4 and secured in that position by the pin 23 with the cards registered against the end wall 17 and locked in such relation by the pin 9 inserted through the central perforated locking tabs 8. When a classification is to be effected the classifying rod or pin 13 is inserted through the selected guide openings 42 in the gages 41. In its passage through the corresponding openings in the cards this pin effects a selection by forming an interlock only with those cards having complete openings 10. Those cards which have open slots 11 at this point are not held by the key pin. Consequently, when the locking pin 9 is withdrawn and the bottom securing pin 23 is pulled out to allow the bottom to swing downwardly and to the right as indicated in Figure 4, the cards which are not held by pin 13 will drop with the bottom and as the bottom is swung over into the left-hand position indicated in Figure 5, will travel along with the bottom, the end gage 29 carrying this group of separated cards up into register against the other end wall 16 of the box. The group of separated cards may then be secured in registry in this offset relation by inserting the bottom pin 23 through the guide openings 26, such openings being placed so as to support the cards at a slightly lower level where they will not interfere with the pin 13 which is holding the other group of cards, as indicated in Figure 5.

This automatic separation of the cards may be effected along any desired lines of classification by simply inserting the selecting pin through the desired classification openings in the cards, then withdrawing the locking pin and swinging the box bottom over into the offsetting position. In this latter position with the cards arranged in two distinctly offset groups, the selecting pin 13 may be withdrawn and the two groups of cards be examined, removed and otherwise handled as occasion requires.

To restore the cards to their original registered relation, it is simply necessary to withdraw the bottom pin 23 and to swing the bottom back to the right in Figure 4; whereupon, the end gage 28 carries both groups of cards back into register against the end wall 17. In both positions the device provides a convenient file or holder for the cards.

What is claimed is:

1. Classifying apparatus comprising a holder having a swinging bottom, means for securing the bottom in different positions, means for registering cards or the like supported by the bottom and means for holding selected numbers of the cards or the like supported in the holder independently of the swinging bottom.

2. Classifying apparatus comprising a box body having a swinging bottom, means for securing the bottom in different positions, gages on the box body and bottom for registering cards or the like, a classification guide carried by the box body and a selecting instrument operable in conjunction with said guide to support a series of cards or the like independently of the bottom.

3. Apparatus for automatically classifying and offsetting cards having significantly located registering perforations, some of which are closed and others open at one side, comprising a holder provided with a wall shiftable to carry one group of cards out of register with another group of cards, a guide having openings adapted to register with the openings in the registered cards

when said wall is in its initial position and a key pin for cooperative engagement with said guide and adapted to pass through the registered perforations in the cards.

4. Apparatus for automatically classifying and offsetting cards having significantly located registering perforations, some of which are closed and others open at one side, comprising a holder provided with a wall shiftable to carry one group of cards out of register with another group of cards, a guide having openings adapted to register with the openings in the registered cards when said wall is in its initial position and a key pin for cooperative engagement with said guide and adapted to pass through the registered perforations in the cards, the cards having registering locking openings and a readily withdrawable locking pin adapted to be entered in said locking openings.

5. In combination, information-bearing cards having registering perforations along their upper edges, certain of which are open to the upper edges of the cards, a holder for the cards having a movable card-offsetting member, a readily withdrawable selecting pin insertible through the registering openings of the cards in the holder and a guide for directing said selecting pin into selected openings in the cards.

6. In combination, information-bearing cards having registering perforations along their upper edges, certain of which are open to the upper edges of the cards, a holder for the cards having a movable card-offsetting member, a readily withdrawable selecting pin insertible through the registering openings of the cards in the holder and means for temporarily locking the cards in registered relation in the holder.

7. Card classifying and grouping apparatus comprising an open top holder having a swinging bottom, means for securing said bottom in differently shifted positions, guide means carried by the holder, a selecting element for cooperation with said guide means to effect a selective engagement with the cards in the holder.

8. Card classifying and grouping apparatus comprising an open top holder having a swinging bottom, means for securing said bottom in differently shifted positions, guide means carried by the holder, a selecting element for cooperation with said guide means to effect a selective engagement with the cards in the holder and cards supported in the holder on the movable bottom, said cards having classification perforations for registry with the guide means, certain of the cards having portions defining the perforations removed so that such cards will not be held by the selecting pin entered through corresponding perforations in the other cards.

In witness whereof, I have hereunto set my hand this 23rd day of October, 1925.

JOHN B. RUFFALO.