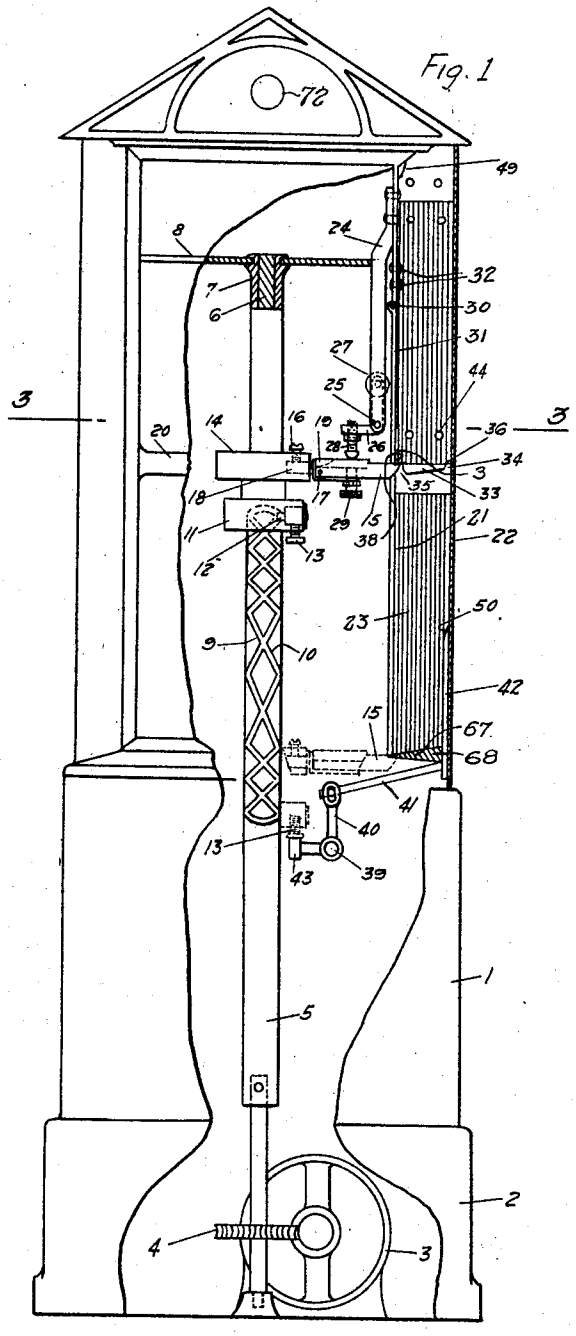
May 7, 1929. M. S. GUREVICH ET AL 1,711,528

DISPLAY TOWER

Filed Nov. 3, 1926 2 Sheets-Sheet 1

Fig. 1




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DISPLAY TOWER

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Fig. 2

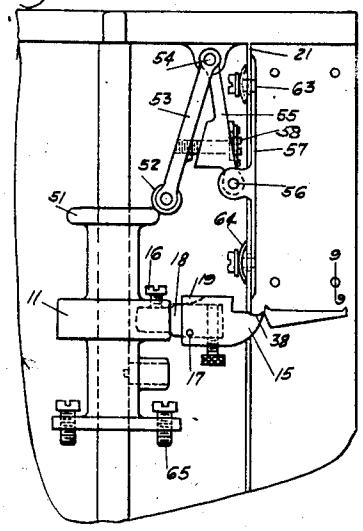



Fig. 5

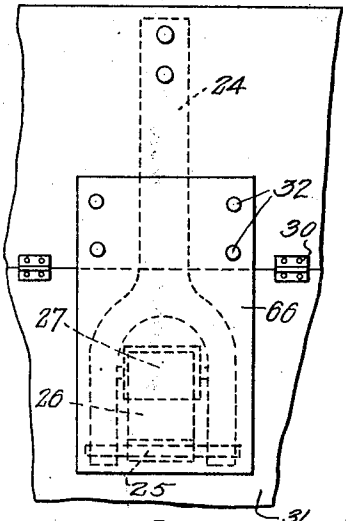



Fig. 10

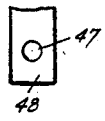



Fig. 8

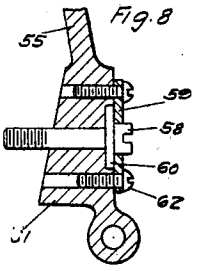



Fig. 9

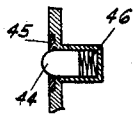



Fig. 11

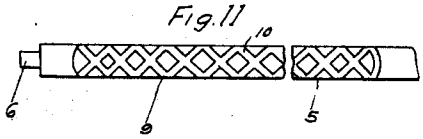
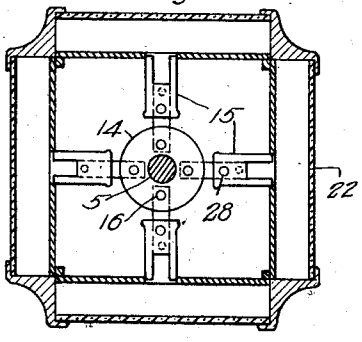



Fig. 3



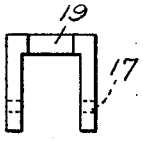




Fig. 4a

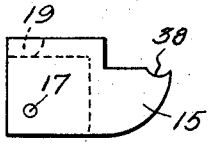



Fig. 4

Fig. 6

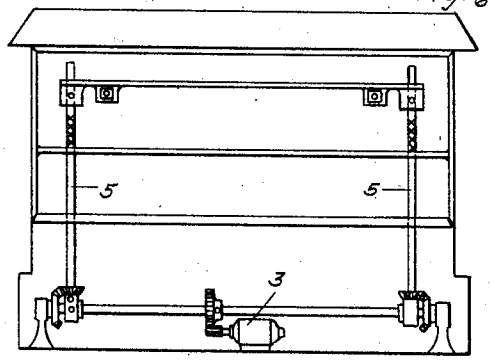
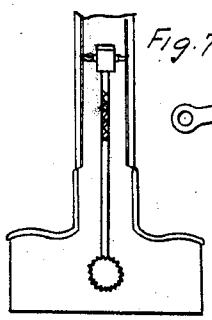



Fig. 7



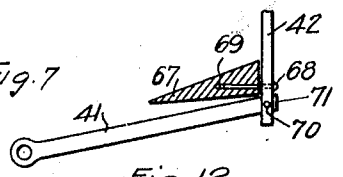



Fig. 12

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Patented May 7, 1929. 1,711,528

# UNITED STATES PATENT OFFICE.

MORRIS S. GUREVICH, OF NEW YORK, AND LAWRENCE J. ZAHN, OF LONG ISLAND CITY, NEW YORK.

## DISPLAY TOWER.

Application filed November 3, 1926. Serial No. 145,946.

This invention relates to improvements in advertising mechanisms comprising a display cabinet or tower having a lower portion which may be useful as a locker for various purposes, and also to contain the driving mechanism and two sections above said lower portion, which sections are subdivided in a suitable manner to carry the display cards, and the means for moving said cards from the lower to the upper section.

The object of this invention is to provide a display cabinet or tower which will shift the display cards in a simple and expeditious manner.

Another object of our invention is to provide a mechanism in the class described, in which the display cabinet is more or less ornamental, and which may be used for other purposes besides that of displaying cards of an advertising or similar nature.

Other objects will appear, after a study of the following specification taken in connection with the annexed drawing, wherein Figure 1 is a vertical view on a much reduced scale of a cabinet with parts broken away to show the interior mechanism, no attempt being made to show all of the details, but only those necessary for an understanding of our invention.

Figure 2 is a fragmentary view in elevation of a modified form of part of the card control mechanism.

Figure 3 shows a part plan and sectional view of a four sided display cabinet taken on a line corresponding to 3—3 of Figure 1, but with many of the parts removed.

Figure 4 is a side elevation on an enlarged scale of the lifting arm used in the mechanism.

Figure 4ª is a view of the left end of Figure 4.

Figure 5 is a plan view of the upper part of Figure 1, looking from right to left from within the outer part of the cabinet.

Figure 6, shows a cabinet or tower having two sides in the form of a bench.

Figure 7 is an end view of Figure 6.

Figure 8 is a sectional view on an enlarged scale of details of one of the control levers shown in Figure 2.

Figure 9 is an enlarged section on the line 9—9 of Figure 2.

Figure 10, is a fragmentary side view of one of the card holders substantially full size, while

Figure 11 is a view on a much reduced scale of a form of operating shaft having a uniform thread.

Figure 12 is a fragmentary view on an enlarged scale of a part of the reloading mechanism shown in Figure 1.

Referring now to the details wherein like numbers refer to corresponding parts, in the various views.

The display cabinet tower having as many sides as desired has a lower portion 1, with a base 2, within which a driving motor 3 may be mounted. The motor is connected by a gear 4, to a vertically mounted operating shaft 5, the upper end 6, of which is positioned in a bushing 7, carried by a support member 8. The shaft 5 is provided with threads 9 and 10, which are cut or formed in reverse direction, the threads running together, so as to form an automatically reversible means for a carrier 11, carried on the threads by means of a plunger or finger 12, preferably adjustable by a screw 13, so as to get the proper depth and alignment in the threads 9 and 10. To the upper part 14 of the carrier, is attached a stud 18 which is adjustable in the part 14 by a set screw 16. A lifting arm 15 is pivoted at 17 on the stud 18, it being understood that the lifting arm 15 is cut away on the top portion, as indicated by the dotted line 19, so as to allow the lifting arm 15 to swing a certain distance on the pivot 17 for a purpose which will be later pointed out.

It should be noted at this point, that the cabinet tower above the portion 1, is substantially divided into two sections by a partition 20, which is cut away to provide space for the carrier 11, when in its upper position. The two sections are further subdivided on one side by a partition 21, which has a slot therein through which the end of the lifting arm 15 projects. Spaced from the partition 21 is the front door 22 of the cabinet, which is preferably of glass, so that the display cards may be seen therethrough. A plurality of these cards are indicated at 23 in the lower pocket, as well as in the pocket above the partition. Attached to the upper part of the partition 21 is a bracket or arm 24, the lower end of which is slotted or in the shape of a fork. Pivoted at 25, within the fork shaped arm 24, is a lever 26, one arm of which carries a roller 27, and the other arm an adjusting screw 28, which is adapted to be engaged by

the lifting finger 15, which also carries an adjusting screw 29.

Pivoted at 30 to the upper part of the partition 21 is a movable plate or arm 31, preferably of considerable width it being understood that the partition 21 is cut away sufficiently to accommodate the plate 31. The plate 31 is held in the position shown in Figure 1 by a spring member 66, riveted at 32 or otherwise fastened to the partition 21. Attached to the side wall of the cabinet is a resting bar 33, being positioned so as to be in alignment with the lifting finger 15, when the same and the carrier 11 are substantially at their uppermost position. The width of the resting bar is such that a gate 34 somewhat wider than the thickness of one of the cards or card holders, is left between the edge of the resting bar 33 and the glass 22. Likewise a gate 35 is left at the other end of the resting bar 33; preferably the upper side ends of the resting bar 33 are provided with slight lips 36, the purpose of which will be later pointed out; also the lifting arm 15 is provided with a slight groove 38 to make a seat for the edge of the card or card frame.

Adjacent the lower card pocket is mounted on the pivot 39, a lever 40, which adjustably carries an arm 41, to which is attached a plate 42 in any satisfactory manner as by having a shoulder portion 70, which may pass through the plate 42, and if desired, a pin 71 may also be used to anchor the lever 41 to the plate 42. The cards or card frames 23 rest on a support 67, which is preferably slightly inclined as shown somewhat exaggerated in Figure 12. It is to be understood that the support 67 is attached to some part of the framework of the cabinet. The plate 42 is preferably provided with one or more guide pins 68 operating in holes 69 in the support 67. The other arm 43 of the lever is adapted to engage some part of the carrier 11, as the set screw 13. The arm 43 may also carry an additional adjusting means, if desired, so as to get more accurate adjustment between these parts. The side wall of the cabinet is preferably provided with two pairs of plungers 44 each of which are held in place by a washer 45 and a spring 46. These plungers are adapted to engage depressions 47 in the sidewall of the first and last cards in the upper pocket.

A description of the operation will make clear the functioning of the previously described parts.

The preferred form of display card includes a metallic frame in which cards are suitably mounted and these frames are moved in the following manner; assuming that the carrier 11 is at its lowermost position as indicated by the dotted lines in Figure 1, a card with its frame has just been moved by the lever 11 and plate 42 onto the lifting arm 15. Since the shaft 5 is in operation by means of the motor 3, the carrier 11 is moved upwardly and the card with its frame is carried through the gate 35 and upward beyond the gate until the upper part of the frame of the card encounters the guide 49, which acts to move the upper end of the card frame toward the front of the cabinet. At the same time the lifting arm 15 engages the adjusting screw 28, thereby operating the lever on the pivot 25 causing the roller 27, to push the plate 31 against the action of the spring 30 so as to move the stack of cards in the upper pocket toward the glass 21. The card is thus pushed off the lifting arm 15 over the lip 36, onto the resting bar 33 and into a position such that the depressions 47 in the sides of the frame of the card engage the inner pair of plungers 44 thus holding this card in proper alignment. Simultaneously with this operation the outer card is moved off the outer pair of plungers 44 over the lip 36 and drops by gravity through the gate 34, downward to the lower pocket being guided into position by the beveled end 50 of the plate 42. As the carrier 35 reaches the limit of its upper movement, the guide finger or plunger 12 moves into the reverse thread and the carrier is moved downward; when it reaches substantially the lower portion of the thread the lever arms 43 and 40 are operated moving the plate 42 toward the partition 21 thereby pushing over or loading one card onto the lifting arm 15 and so on.

In the form shown in Figure 2, the carrier 11 is provided with a collar 51 which is adapted to engage a roller 52, pivoted on the end of the lever arm 53, which arm is also pivoted at 54 to the frame of the cabinet. The arm 55 of the lever is pivoted at 56 to a plate 57, which performs the same function as the plate 31. Adjustment between the two arms 53 and 55 is provided by a set screw 58 held in position by a plate 59 that laps over a collar 60 integral with the screw 58. The plate 59 is held in position to the boss 61 of the lever 55 by any satisfactory means, as by screws 62.

To the plate 57 is attached a plurality of screws 63 passed through clearance holes in the partition 21. Associated with the screws 63 are springs 64 which act to return the plate 57 after it has been actuated by the levers just described. The lower portion of the carrier 11 is provided with adjusting screws 65 for engaging a lever arm 43 which may be used on either side of the shaft 5, it being understood that the cabinet may have a plurality of sides all displaying cards simultaneously, such as shown in Figures 3 to 7 inclusive.

The operating shaft 5 shown in Figure 1 is provided with threads in which the pitch thereof is different at different parts of the shaft, for example at the upper and lower extremities of the shaft the threads are of a pitch such as to give relatively slow movement

of the carrier 11, while in the central portion, the pitch of the threads is such as to provide more rapid movement of the carrier. By thus arranging the threads on the shaft 5, a more rapid movement of the display cards is obtained, while the motion is slowed down at the actual time of shifting the cards, so that the parts have sufficient time to operate and no undue strain is placed on them.

In the form of cabinet shown in Figures 6 and 7, the cabinet is arranged in bench form providing seats which may be utilized for various conditions of use as it is contemplated that our cabinet may be placed near store entrances or even on the street, in which case the lower portion 1, may be used by the police or fire departments for various purposes. When the display tower cabinet is used on the street, signal lights or otherwise may be placed in the top as illustrated at 72.

From what has been said it will be observed that the cabinets or towers may take various shapes and be used for various purposes, likewise the details may be varied over a considerable range without departing from the spirit of our invention, and the scope of the appended claims.

Having thus described our invention what we claim is:

1. In a mechanism of the class described, a housing having at least an upper and a lower section, a reversible threaded shaft journalled for rotation in said housing and extending from the lower section toward the upper, a carrier on said shaft, said carrier having means cooperating with the thread of said shaft for causing it to move up and down when said shaft is rotated, a card lifting arm supported by the carrier, a resting bar positioned adjacent said arm when substantially in its uppermost position and means actuated by the carrier for pushing a card off said lifting arm onto the resting bar at the same time moving a card off said bar whereby a card may pass to the lower section and means actuated by the carrier when substantially near its lowermost position for moving a card onto the lifting arm.

2. In a mechanism of the class described, a housing having at least an upper and a lower section, a reversible threaded shaft journalled for rotation in said housing and extending from the lower section toward the upper, a carrier on said shaft, said carrier having means cooperating with the thread of said shaft for causing it to move up and down when said shaft is rotated, a card lifting arm supported by the carrier, a resting bar positioned adjacent said arm when substantially in its uppermost position, means actuated by the carrier for pushing a card off said lifting arm onto the resting bar at the same time moving a card off said bar whereby a card may pass to the lower section, and means actuated by the carrier when substantially near its lowermost position for moving a card onto the lifting arm.

3. In mechanism of the class described, a housing having at least an upper and a lower section, a reversible threaded shaft journalled for rotation in said housing and extending from the lower section toward the upper, a carrier on said shaft, said carrier having means cooperating with the thread of said shaft for causing it to move up and down when said shaft is rotated, a card lifting arm supported by the carrier, a resting bar positioned adjacent said arm when substantially in its uppermost position, a lever actuated by the carrier and means for regulating the time of actuation of the lever by the carrier, a plate movably positioned above the end of said lifting arm and moved by said lever substantially when said arm reaches its uppermost position to move a card off the arm onto the resting bar whereby another card may pass to the lower section and means actuated by the carrier when substantially near its lowermost position for moving a card onto the lifting arm.

4. In a mechanism of the class described, a housing having at least an upper and a lower section, a reversible threaded shaft journalled for rotation in said housing and extending from the lower section toward the upper, a carrier on said shaft, said carrier having means cooperating with the thread of said shaft for causing it to move up and down when said shaft is rotated, a card lifting arm supported by the carrier, a resting bar positioned adjacent said arm when substantially in its uppermost position, a lever actuated by the carrier and means for regulating the time of actuation of the lever by the carrier, a plate movably positioned above the end of said lifting arm and moved by said lever substantially when said arm reaches its uppermost position to move a card off the arm onto the resting bar at the same time moving a card off the bar, whereby another card may pass to the lower section, and another lever actuated by the carrier when substantially near its lowermost position for moving a card onto the lifting arm.

5. In a mechanism of the class described, a housing having at least an upper and a lower section, a reversible threaded shaft journalled for rotation in said housing and extending from the lower section toward the upper, a carrier on said shaft, said carrier having means cooperating with the thread of said shaft for causing it to move up and down when said shaft is rotated, a card lifting arm supported by the carrier, a partition extending across both sections and having a slot in the lower portion through which the end of said lifting arm projects, said housing having a part spaced from said partition forming a card pocket,

at least one portion of said housing part being transparent for the purpose described, a resting bar between the partition and said housing part, said bar being of a length such as to leave a gate at both ends for the passage of display cards, means actuated when the carrier is near its uppermost position for moving a card off said lifting arm onto the resting bar and moving a card off said bar into the return gate whereby the card falls by gravity to the lower part of the card pocket and means actuated when the carrier is near its lowermost position for moving a card from the card pocket onto the lifting arm.

6. In a mechanism of the class described, a housing having at least an upper and a lower section, a reversible threaded shaft journalled for rotation in said housing and extending from the lower section toward the upper, a carrier on said shaft, said carrier having means cooperating with the thread of said shaft for causing it to move up and down when said shaft is rotated, a card lifting arm supported by the carrier, a resting bar positioned adjacent said arm when substantially in its uppermost position, a display card pocket subdivided by said resting bar into two portions, said resting bar being positioned so as to leave an opening or return gate between its edge and the wall of the housing, means associated with at least the upper portion for keeping the cards therein in proper position, means actuated when the carrier is near its uppermost position for moving a card off said lifting arm onto the resting bar and moving a card off said bar into the return gate whereby the card falls by gravity to the lower part of the card pocket and means actuated when the carrier is near its lowermost position for moving a card from the card pocket onto the lifting arm.

7. In a mechanism of the class described, a housing having at least an upper and a lower section, a reversible threaded shaft journalled for rotation in said housing and extending from the lower section toward the upper, a carrier on said shaft, said carrier having means cooperating with the thread of said shaft for causing it to move up and down when said shaft is rotated, a card lifting arm supported by the carrier, a resting bar positioned adjacent said arm when substantially in its uppermost position, a display card pocket subdivided by said resting bar into two portions, said resting bar being positioned so as to leave an opening or return gate between its edge and the wall of the housing, means associated with at least the upper portion for engaging the outer cards therein for holding and guiding the cards, means actuated when the carrier is near its uppermost position for moving a card off said lifting arm onto the resting bar and for moving a card off said bar into the return gate whereby the cards falls by gravity to the lower part of the card pocket and means actuated when the carrier is near its lowermost position for moving a card from the card pocket onto the lifting arm.

8. In a mechanism of the class described, a housing having at least an upper and a lower section, a reversible threaded shaft journalled for rotation in said housing and extending from the lower section toward the upper, a carrier on said shaft, said carrier having means cooperating with the thread of said shaft for causing it to move up and down when said shaft is rotated, a card lifting arm supported by the carrier, a resting bar positioned adjacent said arm when substantially in its uppermost position, a display card pocket subdivided by said resting bar into two portions, said resting bar being positioned so as to leave an opening or return gate between its edge and the wall of the housing, at least two sets of plungers carried by a part of the housing for engaging the casing of the outer of the cards in the pocket, means actuated when the carrier is near its uppermost position for moving a card off said lifting arm onto the resting bar and for moving a card off said bar into the return gate whereby the card returns to the lower part of the card pocket and means actuated when the carrier is near its lowermost position for moving a card from the card pocket onto the lifting arm.

9. A card display mechanism comprising, a housing having a card pocket, a resting bar dividing said pocket into two portions, each portion capable of carrying a plurality of cards, means for transferring one card at a time from one portion of the pocket to the other, said means including; a reversible threaded shaft means for operating the shaft, a carrier mounted to travel on the threaded part of said shaft, a card lifting arm adjustably supported on the carrier, means associated with the lower portion of the pocket for loading at least one card onto said lifting arm when at its lowermost position and means for unloading the card from the arm onto the resting bar when at its uppermost position.

10. A card display mechanism comprising, a housing having a card pocket, a resting bar dividing said pocket into two portions, each portion capable of carrying a plurality of cards, means for transferring one card at a time from one portion of the pocket to the other, said means including; a reversible threaded shaft, means for operating the shaft, a carrier mounted to travel on the threaded part of said shaft, a card lifting arm supported on the carrier, means associated with the lower portion of the pocket for loading at least one card onto said lifting arm when at its lowermost position and means for un-

loading the card from the arm onto the resting bar when at its uppermost position, said latter means also serving to simultaneously move a card off said bar whereby it returns by gravity to the lower portion of the pocket.

11. A card display mechanism comprising, a housing having a card pocket, a resting bar dividing said pocket into two portions each portion capable of carrying a plurality of cards, means for transferring one card at a time from one portion of the pocket to the other, said means including; a reversible threaded shaft, means for operating the shaft, a carrier mounted to travel on the threaded part of said shaft, a card lifting arm supported on the carrier, means associated with the lower portion of the pocket for loading at least one card onto said lifting arm when at its lowermost position and means for unloading the card from the arm onto the resting bar when at its uppermost position, said shaft having its threads arranged at different pitches at different parts of the shaft.

12. A card display mechanism comprising, a housing having a card pocket, a resting bar dividing said pocket into two portions, each portion capable of carrying a plurality of cards, means for transferring one card at a time from one portion of the pocket to the other, said means including; a reversible threaded shaft, means for operating the shaft, a carrier mounted to travel on the threaded part of said shaft, a card lifting arm supported on the carrier, means associated with the lower portion of the pocket for loading at least one card onto said lifting arm when at its lowermost position and means for unloading the card from the arm onto the resting bar when at its uppermost position, said shaft having its threads arranged to move the carrier relatively slow at both ends of the threaded part and faster intermediate said threaded ends.

13. A card display mechanism comprising, a housing having at least two sections with card pockets arranged on the side thereof, means for transferring cards from the lower pocket to the upper one including; a rotatable shaft having right and left hand threads, a carrier supported on the threads and moved thereby, a lifting arm attached to the carrier and separate means for loading and unloading at least one card at a time onto said arm when it is at substantially the limit of its downward and upward movement respectively.

14. A card display mechanism comprising, a housing having at least two sections with card pockets arranged on the side thereof, means for transferring cards from the lower pocket to the upper one including; a rotatable shaft having right and left hand threads, a carrier supported on the threads and moved thereby, a lifting arm attached to the carrier and separate means for loading and unloading at least one card at a time onto said arm when it is at substantially the limit of its downward and upward movement respectively, said unloading means acting also to cause the return to the lower section pocket of at least one card.

15. A card display mechanism comprising, a housing having at least two sections with card pockets arranged on the side thereof, means for transferring cards from the lower pocket to the upper one including; a rotatable shaft having right and left hand threads, said threads having different pitches at different portions of the shaft, a carrier supported on the threads and moved thereby, a lifting arm attached to the carrier and separate means for loading and unloading at least one card at a time onto said arm when it is at substantially the limit of its downward and upward movement respectively.

16. An advertising mechanism comprising, a housing having the lower portion arranged for various utilitarian purposes and having two sections arranged above said lower portion, said sections having card pockets arranged on the side thereof, means for transferring cards from the lower pocket to the upper one including; a rotatable shaft having a reversible thread, a carrier supported on the thread and moved thereby a lifting arm attached to the carrier and separate means for loading and unloading at least one card at a time onto said arm when it is at substantially the limit of its downward and upward movement respectively.

In testimony whereof, we affix our signatures.

MORRIS S. GUREVICH.
LAWRENCE J. ZAHN.