

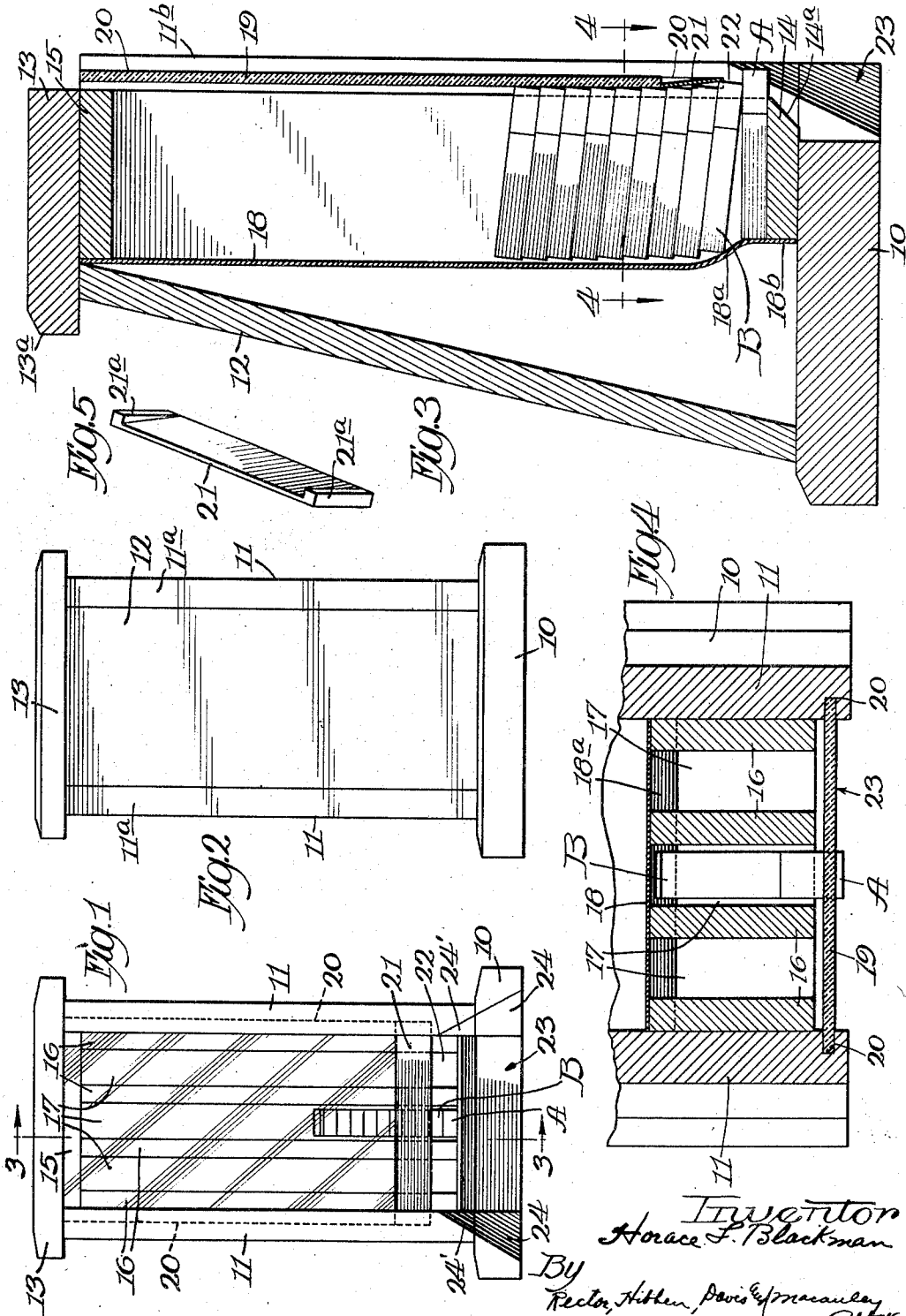
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DISPENSING CABINET

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UNITED STATES PATENT OFFICE

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DISPENSING CABINET

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My invention relates generally to dispensing cabinets and has to do especially with cabinets of this character which are adapted for dispensing goods sold in packages of substantially uniform size and shape.

One of the objects of my invention is to provide a compact cabinet which may be readily placed on a store counter and which is well suited for dispensing leads for pencils such as are usually packaged in boxes of uniform size and shape, such cabinet having a plurality of compartments adapted to receive a supply of packages containing leads of different grades of hardness or softness.

Another object is to provide a dispensing cabinet arranged for the display of advertising, descriptive and other similar matter which is designed to attract the attention of the purchaser and convey to him information relative to the goods contained therein thereby greatly aiding the salesman as well as the purchaser in the making of a sale.

A further object is to provide a dispensing cabinet embodying delivery means capable of selecting and delivering the packages one by one to a dispensing position where they may be readily grasped by the salesman for delivery to the purchaser, said delivery means being of such a character that the contents of the cabinet are automatically fed toward and delivered into dispensing position as the packages are removed one by one.

Still another object is to provide a cabinet having a novel form of chute structure for automatically feeding the articles to dispensing position.

Additional objects are to provide for the packing of a large number and variety of packages in a relatively small space for dispensing purposes; to provide an arrangement wherein a package containing articles of each grade and variety is always readily accessible to the salesman thereby reducing the time required by the salesman to complete the sale; and to provide a structure of the foregoing character which is simple in construction and inexpensive to manufacture and which presents a highly attractive appearance.

Other objects and advantages will become

apparent as this description progresses and by reference to the drawing wherein,—

Figure 1 is a rear elevation of one form of cabinet structure embodying my invention, such cabinet being adapted for the dispensing of rectangularly-shaped packages such as are usually employed for the merchandising of pencil leads;

Fig. 2 is a front elevation of the cabinet structure of Fig. 1;

Fig. 3 is an enlarged vertical section taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a horizontal sectional view taken substantially on line 4—4 of Fig. 3; and

Fig. 5 is a perspective view of the package delivery-directing plate which forms a part of my novel chute structure.

In the form of cabinet which I have chosen to illustrate my invention, I employ an outer shell structure comprising a base 10 of substantial size and thickness supporting side walls 11, each of which has a slanting edge 11^a and a straight edge 11^b. A front wall 12 is supported in a slanting position by the side wall surfaces 11^a. These walls support a top 13 which may project out over the wall 12 as at 13^a (Fig. 3). The front wall 12 is that which is, preferably, presented to the purchaser and it is adapted to contain descriptive and other informative matter relative to the articles contained within the cabinet for the purpose of informing the purchaser as to the nature of the articles so that he can readily and quickly select that which he desires. The side walls 11 may also contain such informative matter, if desired. This outer cabinet shell, and other of the parts of the cabinet which I have shown, are formed preferably of wood, but it is to be understood that I do not wish to be limited to this particular material since it will be obvious that the cabinet as a whole may be readily formed from other material such as sheet metal and the like.

The outer shell encloses a rectangularly-shaped compartmental structure which receives the packages to be dispensed. This structure includes a bottom 14 and top 15 joined by vertical partition strips 16 which are spaced apart to form a plurality of com-

partments 17. The outer side walls 11 and the adjacent strips 16 may be fastened together by any desired means to add to the strength and rigidity of the cabinet as a whole. Each of the compartments 17 is adapted to receive a plurality of rectangular boxes A, B (Fig. 3) which contain the leads, and the boxes in the separate compartments may carry leads of different grades. While I have shown only three such compartments, it is to be understood that any desired number may be employed as required in each specific instance without departing from my invention.

The back walls of the compartments are formed by a single plate 18 formed, preferably, of sheet metal and extending from the top to the bottom of such compartments. This plate may be secured in any desired manner to the adjacent edge surfaces of the partition strips 16 and the top and bottom walls 14 and 15. The front sides of the compartments are normally closed by a vertically sliding glass, or other transparent member, 19 which is supported by the shell side walls 11. More particularly, the straight edge surfaces 11^b of the shell side walls project beyond the outer edges of the partition strips 16 (Figs. 3 and 4), and these projecting portions are each provided with aligned vertical grooves 20 in which the side edges of the glass 19 are slidingly received. The glass 19 is supported at its lower edge by the upper part of the delivery-directing plate 21 which, preferably, takes the form shown in Fig. 5. This plate 21 is mounted to extend transversely across the lower part of compartments 17 and has its end edges 21^a received in the lower part of the grooves 20 and resting against the bottom thereof. The bottoms of the grooves 20 terminate a short distance above the bottom of the compartments 17 leaving at the lower outer part of each compartment a delivery opening 22 which, preferably, is of such height that only one (the lowermost) of the lead-containing boxes may enter the same at one time (Fig. 3).

One of the important features of my invention is the provision of novel chute means for feeding the stacked boxes one by one toward and projecting them partially through the opening 22 in such a manner and to such an extent that the projecting end of the box may be easily and quickly grasped by the salesman for removal of that box when a sale is made. This delivery means is of such character that the weight of a single box or package will be sufficient to cause it to move to the desired dispensing position so that the boxes may all be conveniently removed one by one.

In accomplishing the foregoing feature of my invention, the back compartment wall 18 at 18^a near its bottom is given a peculiar

forwardly curved shape which when engaged by the rear end (or bottom) of the lead-containing boxes (Fig. 3) causes the box as a whole to move forwardly until its outer end is projected to such an extent that it may be readily grasped. This wall surface 18^a is then extended vertically downward at 18^b which provides a forwardly offset wall surface parallel with the upper part of the back wall 18 which permits the rear end of the box to drop downwardly so that the box assumes a horizontal position upon the compartment base 14 with its outer end (or top) projecting through the opening 22 as above described. The foregoing action is aided by the so-called delivery-directing plate 21 which bears a predetermined relationship to the curved back wall surface 18^a. More particularly, this plate 21 is so supported by its ends 21^a that it assumes an angular position with its bottom edge slanting downwardly and outwardly in the general direction of the back wall surface 18^a. The angle of slant of this plate is somewhat less than that of the inner wall surface so that when the lowermost package assumes the position of the package A in Fig. 3 the package next above will be retained in approximately the position indicated by the package B with its forward end tipped downwardly and resting upon the top of package A. Also, the back wall curved surface 18^a is of such length that it extends downwardly beneath the level of the lower edge of the plate 21 so as to project the package through the opening 22 to a predetermined extent with its forward end beyond the plate 21. With the packages in these relative positions, as the package A is withdrawn, the package B will remain in the position indicated until the rear edge of the package A passes beyond its outer edge. The outer edge of the package B will then first drop downwardly and its rear end due to its weight and/or the weight of the packages above it will then move downwardly and outwardly along the curved wall surface feeding the dropped end of the package B forwardly through the opening 22. The package B will continue to move forwardly until its rear end reaches the vertical wall surface 18^b (at which time its forward end is in its fully projected position) and it will then drop downwardly along this vertical wall surface to the position indicated by the article A in Fig. 3. As the foregoing action takes place, the package next above the one indicated at B will assume the position shown by the package B in Fig. 3. This action will take place over and over again as the packages are removed and until the compartments are emptied.

To facilitate removal of the boxes through the opening 22 and to permit the ends of the boxes to be readily grasped, the base 10 immediately beneath the compartment bottom 130

14 and the openings 22 is cut away to provide a rather large space 23 which is of such depth that it extends inwardly beyond the forward edge of the compartment bottom 14. This permits one's hand to be readily moved to a position to grasp the ends of the boxes. The forward edge of the compartment base 14 is beveled at 14^a to provide an edge surface sloping toward the inner edge of the base recess 23 so that one's finger may be readily inserted under the box without interference from the adjacent edge of the compartment base. The side edges of the base cut-away portion 23 and the adjacent forwardly projecting edges of the sides 11 are also cut away obliquely at 24, 24' respectively, as clearly indicated in Figs. 1 and 3, to provide a flaring recess so that the end of the box A projecting from any of the compartments is readily accessible regardless of the direction in which the hand may be moved. These cut-away portions also permit the projecting end of the box to be readily grasped on all sides by one's fingers.

I believe that the operation of my device will be obvious from the foregoing description. It will also be seen that I have provided a highly efficient cabinet structure which is very compact and which may be very cheaply made without impairing its ability to accomplish the results above described. It may well be mounted upon a show-case in a store, in which event I preferably position it in such a way that the slanting wall surface 12 is presented to the purchaser while the other side is presented to the salesman who will remove the article and deliver it to the purchaser. However, if desired, the position of the cabinet may be reversed.

While I have shown only one form of cabinet structure embodying my invention, it is to be understood that various changes may be made in the details and arrangement of parts without departing from the spirit and scope of my invention as defined by the claims which follow.

I claim:

1. In a dispensing cabinet, means for forming a plurality of vertical compartments each adapted to receive articles stacked upon each other, said compartments having horizontally discharging openings in their bottoms, each of said openings permitting the delivery of one article only, and means for feeding said articles toward said openings and projecting them in part therethrough where they may be readily grasped for removal comprising a back wall having an upper vertical surface terminating in a forwardly and downwardly sloping wall surface which joins a forwardly offset vertical wall surface leading to said bottom whereby, as the lowermost articles are removed, the upper articles are fed downwardly and then

projected forwardly in part through said openings and are finally dropped upon said bottom in a position offset forwardly of the articles above.

2. In a dispensing cabinet, a case, means for forming a compartment in said case for receiving stacked packages, a cover for the front of said compartment, means for supporting said cover spaced from the bottom of said compartment forming a bottom compartment delivery opening sized for the delivery of one package, and means for feeding said packages one by one toward and in part through said opening where it may be readily grasped including a wall surface associated with the back of the compartments engaged by said packages, and which extends vertically then curves forwardly and downwardly and then extends vertically to the bottom of the compartment.

3. In a dispensing cabinet, a case, means for forming a compartment in said case for receiving stacked packages, a cover for the front of said compartment, means for supporting said cover spaced from the bottom of said compartment forming a bottom compartment delivery opening sized for the delivery of one package, and means for feeding said packages one by one toward and in part through said opening where it may be readily grasped including a wall surface associated with the back of the compartments engaged by said packages, and which extends vertically to a point above the level of said opening then curved forwardly and downwardly to a point intermediate the top and bottom of said opening, and then extends vertically to the bottom of the compartment and to a point opposite the bottom of said opening.

4. In a dispensing cabinet, a case, means for forming a compartment in said case for receiving stacked packages, a cover for the front of said compartment, means for supporting said cover spaced from the bottom of said compartment forming a bottom compartment delivery opening, and means for feeding said packages one by one toward and in part through said opening where it may be readily grasped including a wall surface associated with the back of the compartments engaged by said packages, and which extends vertically to a point above the level of said opening then curved forwardly and downwardly to a point intermediate the top and bottom of said opening, and then extends vertically to the bottom of the compartment and to a point opposite the bottom of said opening, said cover supporting means also sloping forwardly and downwardly in the direction of, but to a lesser extent than, said curved wall surface.

5. In a dispensing cabinet, a compartment with an opening at its bottom, means for feeding the objects contained in said com-

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partment toward and through said opening comprising a back wall deflecting surface which guides the rear of package downwardly then forwardly and downwardly and then downwardly, and a front wall surface which guides the forward part of the package forwardly and downwardly toward said opening.

6. In a dispensing cabinet, means forming a compartment with an opening at its bottom, means for feeding packages contained in said compartment toward and through said opening comprising a deflecting surface which engages the rear of said packages and which extends vertically downward to guide the rear of package downwardly, then curves forwardly and downwardly to guide the rear of the package forwardly and downwardly to project the forward part of the package toward and partially through said opening and which then extends vertically downwardly to drop the rear of the package to a horizontal position without further forward projection, and a front wall surface opposite the forwardly projecting rear wall surface and sloping in the same direction which aids in guiding the forward part of the package forwardly and downwardly toward said opening.

7. In a dispensing cabinet, members forming a substantially vertical compartment having a horizontal base and adapted to contain a plurality of packages in stacked formation, means at the front of said compartment and carried above said base providing a horizontal opening at the bottom of said compartment, the lowermost of said packages being supported upon said base with its forward end projected through said opening, said means being adapted to position the package above the lowermost one with its forward end tipped downwardly and resting upon the lowermost one, and means for feeding the tipped package downwardly and partially through said opening and into a horizontal position upon said base.

8. In a dispensing cabinet, means for forming a vertical compartment with an opening in its bottom adapted to contain stacked packages, and means for feeding said packages one by one downwardly toward and partially through said opening comprising a back wall having an upper vertical surface engaged by the rear of each package, a lower and forwardly offset vertical surface at the bottom and engaged by the rear of each package, a forwardly sloping surface joining said vertical wall surfaces and engaged by the rear of each package, and a front wall having a forwardly sloping surface opposite said back wall sloping surface, but sloping to a lesser degree.

9. In a dispensing cabinet, means for forming a vertical compartment adapted to receive articles stacked upon each other, a front

for said compartment, having its lower end terminating above the bottom of said compartment to provide a delivery opening, the lower part of said front sloping outwardly, and a back wall for said compartment having an upper surface extending vertically downward to a point above the level of said opening and then curved forwardly and downwardly to a point intermediate the top and bottom of said opening, the upper part of said curved surface being opposite the sloping part of said front, said back wall being extended vertically to the bottom of the compartment from the lower part of its curved surface.

10. In a dispensing cabinet, means for forming a compartment having an opening in its lower front part, means including a horizontal bottom and a vertical rear wall surface for positioning the lowermost article horizontal with its forward end projecting through said opening, means including a sloping front wall surface adjacent said opening for positioning the article next above the lowermost one with its forward end tipped downwardly and resting upon said lowermost article for first dropping that end when the lowermost article is removed, and means including a curved rear wall surface engaged by the rear of the article for projecting said article forwardly through said opening when its forward end is dropped and to finally drop its rear end to a horizontal position.

11. In a dispensing cabinet, a base, spaced side walls carried by said base and extending to one edge thereof, said latter edge of the base intermediate said side walls being recessed, and a compartmental structure between said side walls upon said base including a bottom surface which projects forwardly above and beyond the inner edge of said base recess, the forward edge of said bottom surface above said base recess being beveled to permit the projecting end of a package supported by said bottom to be readily grasped on its under side.

12. In a dispensing cabinet, a base, a compartmental structure including a bottom surface mounted upon said base and having its parts so arranged as to provide a delivery opening adjacent its bottom, and a recess in said base extending from its edge to a point inwardly beyond the outer edge of said compartment bottom to provide a projecting compartment bottom surface, said projecting bottom surface being beveled toward the inner edge of said base recess, the forward side edges of said base recess being also beveled to permit access to said opening from any angle.

13. In a dispensing cabinet, a base having a recess with flaring side walls at one edge, a compartmental structure mounted upon said base and including a bottom part projecting forwardly beyond the inner edge of

said recess, the forward edge of said projecting bottom part tapering inwardly toward the inner edge of said recess.

14. In a dispensing cabinet, a compartment
5 for holding a plurality of articles in stacked relation and including a delivery opening, means for projecting said articles one at a time through said opening, means for preventing the projection of succeeding articles
10 while the article in registration with said opening is being withdrawn, and means for retarding the edge opposite to the delivery opening of the article next to be delivered, thereby placing the same in a canted position
15 relative to the article ready for delivery.

15. In a dispensing cabinet, a compartment for holding a plurality of articles in stacked relation and including a delivery opening, means for projecting said articles one at a
20 time through said opening under the action of gravity, means for preventing the projection of succeeding articles while the lowermost article is in registration with said opening, and means for retrading the edge op-
25 posite to the delivery opening of the article next to be delivered, thereby placing the same in a canted position relative to the lowermost article.

In testimony whereof, I have subscribed
30 my name.

HORACE L. BLACKMAN.

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