

March 16, 1965

R. F. DOYLE

3,173,537

DISPENSER CONTAINER

Filed April 5, 1962

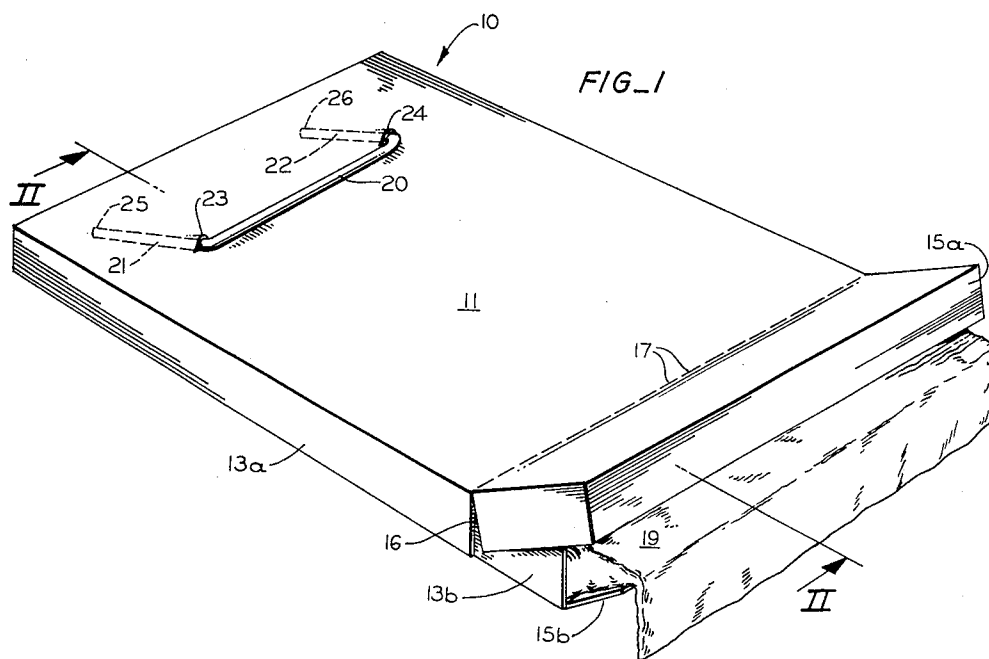
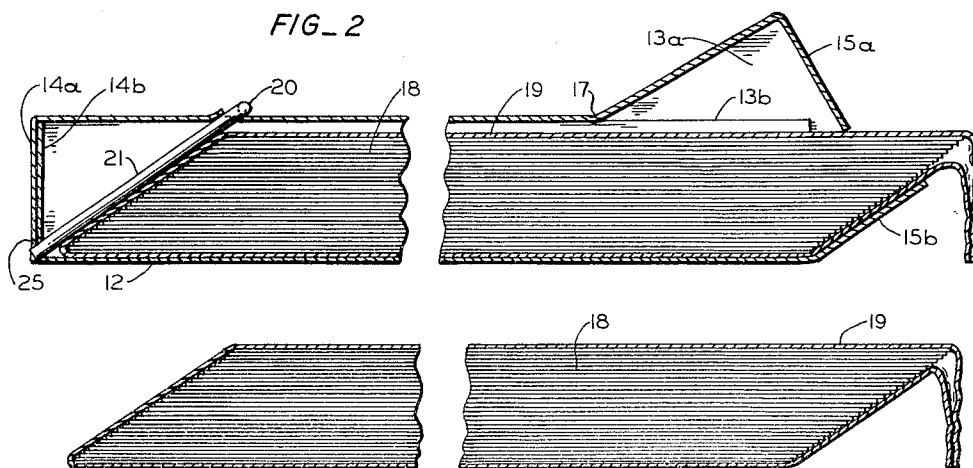


FIG_3

INVENTOR.
RAYMOND F. DOYLE
BY Henry Gifford Hardy.

ATTORNEY

1

3,173,537

DISPENSER CONTAINER

Raymond F. Doyle, San Francisco, Calif., assignor of
one-half to C. Dudley DeVelbiss, San Francisco, Calif.
Filed Apr. 5, 1962, Ser. No. 185,294
4 Claims. (Cl. 206—57)

This invention relates generally to apparatus and a method for dispensing sheet material, and more particularly to an apparatus utilized in combination with a paper box for retailing photosensitive paper which allows the single sheets to be dispensed one sheet at a time without exposing the remaining sheets in the box.

Both positive and negative photosensitive paper for use in standard copy machines is conventionally packaged in a light-proof wrapper, usually black in color, to prevent the photosensitive paper from being prematurely exposed to light. The paper in its light-proof envelope or wrapper is retained in a cardboard box for shipping and storing purposes. Ordinarily such boxes are adapted to open at one end (with a return flap) in order to permit the paper to be withdrawn one sheet at a time from within the inner light-proof envelope or wrapper. In this manner the box is intended to provide the dispensing means for the paper.

While it is obvious that the photosensitive papers must not be prematurely exposed to the light in order to be effective in the copy machine, the problem which heretofore existed with respect to selecting and sliding only one sheet of paper out of the inner envelope or wrapper has been annoying and costly. Oftentimes the sheets, and especially the top two or three sheets stick together due to their natural affinity and as a result of the coatings applied. This problem is aggravated by the fact that the photosensitive paper is cut to size and stacked so that the ends and sides of the sheets are aligned. Frequently in the effort to separate and select a single sheet, other sheets were prematurely exposed so that the full photosensitivity of the paper was lost for use in the copy machine. This has resulted in a great deal of unnecessary waste and such paper is relatively expensive.

Therefore, it is an important object of the present invention to provide apparatus and a method for selecting and dispensing photosensitive paper one sheet at a time without inadvertently exposing other sheets in the package.

Another object of the present invention is to provide apparatus and a method for dispensing photosensitive paper wherein the top sheet is easily and readily accessible for selection and to be dispensed from a box containing a stack of such sheets without removing or exposing other sheets.

A further object is to provide an apparatus which is adaptable for use with pre-existing boxes for dispensing sheets of paper which are arranged in the box in stacked relation, in such manner that only the top sheet thereof is selected and dispensed from the box.

Yet another object of the present invention is to provide an apparatus which is easily and quickly insertable into, and removable from a box containing paper in stacked relation, to permit the paper to be dispensed from the box very rapidly, one sheet at a time, the apparatus thus being adapted for use with a great number of such boxes, and particularly boxes containing photosensitive sheets.

Further objects are to provide a construction of maximum simplicity, economy and ease of assembly and disassembly, also such further objects, advantages and ca-

2

pabilities as will fully appear and as are inherently possessed by the device and invention described herein.

The invention further resides in the combination, construction and arrangement of parts illustrated in the accompanying drawing, and while there is shown therein a preferred embodiment thereof, it is to be understood that the same is merely illustrative of the invention and that the invention is capable of modification and change and comprehends other details of construction without departing from the spirit thereof or the scope of the appended claims.

In the drawings:

FIGURE 1 is a perspective view of a box embodying the present invention;

FIGURE 2 is a cross-section of a box taken along the line II—II of FIGURE 1;

FIGURE 3 is a schematic side elevation, with a protective wrapper in section, showing the sheets in fanned position.

Referring to the drawing in which like reference numerals are used to indicate like parts in the several views, and more specifically to FIGURE 1 thereof, there is shown a standard box of rectangular cross-section and relatively flat, normally used to store and dispense photosensitive paper. The box 10 has a cover with a top 11, side panels 13a, a rear panel 14a and a front panel 15a. It also has a bottom section with a bottom 12, side panels 13b, a rear panel 14b and a front panel 15b. The cover and bottom nest in the usual manner and since the side panels 13a and 13b, as well as the other panels are approximately the same depth, the nesting is complete and the bottom edges of the cover, side and rear panels are sealed in the usual manner by paper tape on the outer layer of paper of the cover (not shown). Against the front panel 15a of the cover, the side panels 13a have a vertical cut 16 which extends completely to the top 11. The top 11 is transversely scored with a scoring line 17 which runs between the tops of the cuts 16. By lifting the front panel 15a upwardly against the scoring 17 the front portion of the cover opens to permit access to the contents of the box 10, as shown in FIGURE 1. The front cover portion is movable in this manner between the open position and the closed position. To make the access easier in the open position, the juncture of the bottom front panel 15b with the side panels 13b is cut, so that the front panel 15b can be moved from the vertical position when the movable front cover portion is raised. The wrapper 19 is normally a wide mouth sack or envelope which is deeper than the length of the paper. When the envelope or sack is opened there is enough overhang in front to provide access to the paper within the wrapper so as to minimize the chance of exposure when removing the sheets. The open end of the wrapper 19 is placed in the box 10 adjacent the dispensing end of the box.

The top 11 of the box 10 has a pair of spaced holes 23 and 24 and the double rear wall 14a and 14b has holes 25 and 26 in longitudinal alignment therewith, at the juncture of the rear wall and the bottom 12.

A U-shaped member 20, which may be of a metal is bent to the shape with two parallel legs 21 and 22 extending in the same plane from the bottom portion thereof. The contents of the box are removed as a unit, and if the sheets are photosensitive the protecting wrapper 19 is not disturbed. The legs 21 and 22 are inserted into the pair of holes 23 and 24 in the top 11. The U-shaped member 20 is pushed in an angular direction through the holes 23 and 24 into the interior of

3

the box until the legs 21 and 22 contact the pair of holes 25 and 26 and engage therein. The holes 23 and 24 in the top 11 of the box 10 may be slanted rearwardly, but this is not necessary as they assume this attitude on the first use. The holes 23 and 24 are positioned a sufficient distance from the rear end 14 to place the U-shaped member 20 on approximately a 30° angle from the horizontal relative to the cross-section of the box 10, as seen in FIGURE 2. The holes 23, 24, 25 and 26 should be of such size to allow the U-shaped member 20 to be seated firmly with said holes. The entry of the U-shaped member 20 through the holes 24 and 26 is limited by the cross-bar connecting the legs 21 and 22 and the curvature at the juncture.

The exact length of the legs 21 and 22 of the member 20 must be equal to the straight line distance between the outside of holes 23 and 24 in the top, and holes 25 and 26 in the rear end wall, taking into account any curvature at the junction of the legs with the cross-bar in the U-shaped member 20. This distance is of importance to allow the member 20 to be fully seated within the holes, to effectively brace the member 20 within the box 10, and to insure that the tips of the legs 21 and 22 will not extend unduly beyond the outside of the lower edge of the end 14. When the stack of fanned paper 18 is fully seated against the member 20, as shown in FIGURE 2, it is apparent that the engagement of the paper against the member 20 will not inadvertently become dislodged.

As stated earlier, the packaged stack of photosensitive paper 18 is removed from the box 10 to allow the insertion of the U-shaped member 20 through the holes 23 and 24 and thence into holes 25 and 26. Prior to reinsertion of the stack 18 into the box 10, the stack 18 in its protective wrapper 19 is flexed or fanned in much the same manner as a deck of cards, by grasping the ends of the stack 18 and bending it about its transverse axis. This action has the effect of rearranging the sheets laterally or stepping the individual sheets, so that one end of the stack 18 will be stepped from bottom to top, or inclined upwardly, and the other end of the stack will be just the reverse, i.e., stepped from top to bottom, or inclined downwardly, as illustrated in FIGURE 3. The end of the stack 18 which is inclined upwardly is inserted into the open or dispensing end of the box 10 and is allowed to drop toward the rear of the box until the inclined end of the stack 18 comes into contact with and assumes the same angularity of the U-shaped member 20. The box and its contents are then preferably taped on the rear end 14 to firmly press the fanned sheets against the U-shaped member 20. In this position, the stack 18 will retain the inclined relation of the end thereof in contact with the U-shaped member 20, and consequently the forward end of the stack 18 will also retain the downwardly inclined relation. It will be apparent from FIGURE 2 and FIGURE 3 that the individual sheets in the stack 18 have the leading edges thereof extending a short distance beyond the next lower sheet, that is, the top sheet extends forwardly a short distance from the second sheet, and so on down through the stack.

Therefore, when it is desired to remove only one sheet from the box 10, the person desiring the sheet merely extends his fingers into the open mouth of the wrapper 19 until his fingers come into contact with the top sheet in the stack 18. Due to the fact that the top sheet extends forwardly from the second sheet, thereby leaving the second sheet in place as the new top sheet of the stack 18. The top sheet is then pulled outwardly and removed from the wrapper 19, through the front or dispensing end of the box 10 without exposing any of the remaining sheets. This precise positioning of the stacked paper is maintained to the last sheet, due to the angularity of the U-shaped member and the wedging of the stack in fanned relation against it in the container.

4

It will be understood that the holes 23 and 24, 25 and 26 may be placed in the box 10 during the forming or manufacture of the box 10 so that it is received by the user with the necessary holes already included therein. However, it will be obvious that it is a very easy matter to adapt pre-existing boxes which do not have the pre-punched holes positioned therein, for use with the present invention merely by measuring the proper distances and punching the required holes in the box 10 by means of any suitable tool.

When the entire stack 18 of photosensitive paper in one box 10 has been used, the U-shaped member 20 may be withdrawn from the holes 23, 24, 25 and 26 by grasping the U-shaped member 20 by the cross-bar and pulling the U-shaped member out. The U-shaped member 20 may be reused indefinitely by positioning it in other boxes in the same manner as heretofore described.

It will be understood that the size or depth of the box 10 is immaterial to the practice of the present invention, but that the holes 23, 24, 25 and 26 are placed in the box 10 according to the specific size of the box to insure that the U-shaped member 20 when fully inserted and anchored in the holes provided in the rear panels of the box, will accurately position and hold the sheets for rapid selection. The optimum angle has been found to be approximately 30°.

I claim:

1. A dispenser container for the selection of individual sheets of paper, in combination a box enclosing a stack of individual sheets of paper, said box being a conventional box of substantially the same linear dimensions as the sheets and having a dispensing opening at one end only, perforations in the top end of said box adjacent the end opposite to the end opening, said stack of individual sheets of paper being fanned for use so that the ends thereof are in stepped angular relation with the forward end extending angularly rearward, a U-shaped member temporarily positioned within said box, said U-shaped member having legs, said legs being removably insertable angularly through said perforations in the top into the interior of said box adjacent the end opposite to the dispensing opening engaging the inner end of said fanned stack to maintain the stepped relation of said sheets.

2. The dispenser container set forth in claim 1 in which the legs of said U-shaped member extend into the interior of said box at an inclination of approximately 30° relative to the plane of the top of said box with the ends of said legs engaging the interior juncture of the bottom and the end wall of said box opposite said dispensing opening.

3. A dispenser container for dispensing individual sheets of paper and the like, in combination a rectangular relatively flat box having a dispensing opening at one end only enclosing individual sheets of paper in stacked form, said box being a standard box having substantially the same lineal dimensions as said sheets, said dispensing opening being closed by a hinged closure, a pair of spaced perforations positioned in the top of said box adjacent the end opposite to the dispensing opening, a second pair of spaced perforations positioned in the interior juncture of the bottom and closed end wall thereof in registry with said first pair, a U-shaped member temporarily positioned in said box, said U-shaped member having legs, said legs being removably insertable angularly through the perforations in the top of said box into the interior thereof and engaging in the said second pair of perforations engaging the inner end of said stack to maintain the stepped relation of said sheets.

4. The dispenser container of claim 3 in which the individual sheets are contained in a pliable envelope, said envelope being substantially longer than said fanned sheets and having its open end at the dispensing end of said box.

(References on following page)

5

References Cited by the Examiner

UNITED STATES PATENTS

Re. 7,296	9/76	Osbourn	206—57	X
185,082	12/76	Dennison	206—57	
546,849	9/95	Hughes	206—57	
1,129,276	2/15	Cohn	206—57	
1,657,737	1/28	Bogren	206—57	
2,450,558	10/48	Ogren	206—57	
3,001,645	9/61	Hernberg	206—57	

6

FOREIGN PATENTS

4,435 1905 Great Britain.

OTHER REFERENCES

5 German application, printed Feb. 16, 1956, S28,157 (Kl. 33c, 12).

THERON E. CONDON, *Primary Examiner.*EARLE J. DRUMMOND, GEORGE O. RALSTON,
Examiners.