Oct. 24, 1939. M. W. GREISER 2,177,430

WEB DISPENSER

Filed Sept. 10, 1937

Fig. 1.

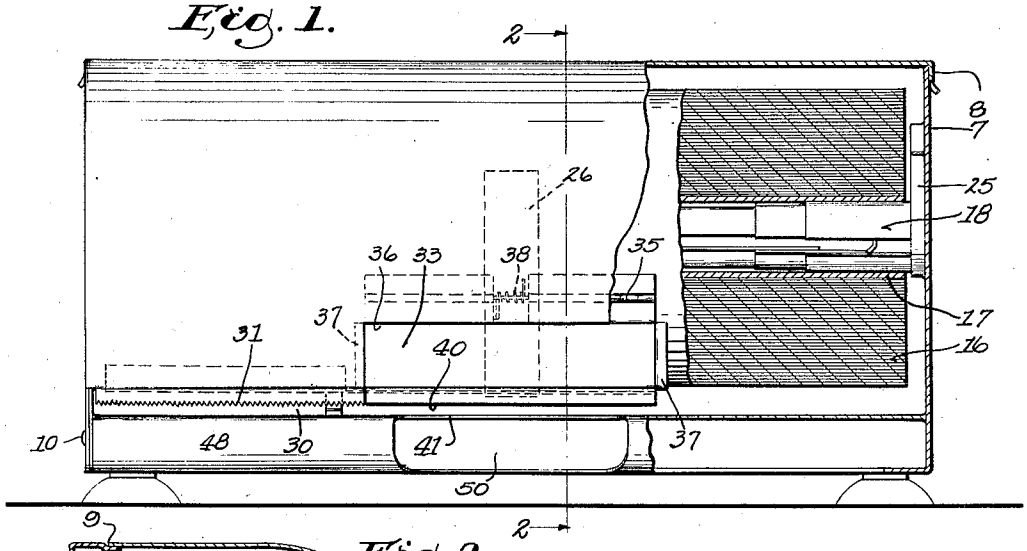
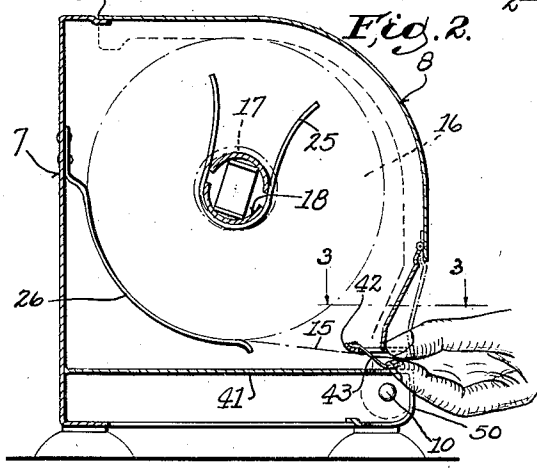


Fig. 2.



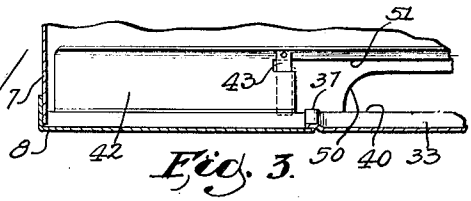


Fig. 3.

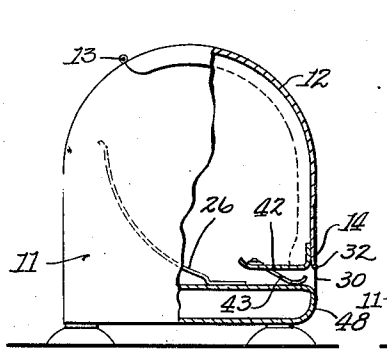


Fig. 5.

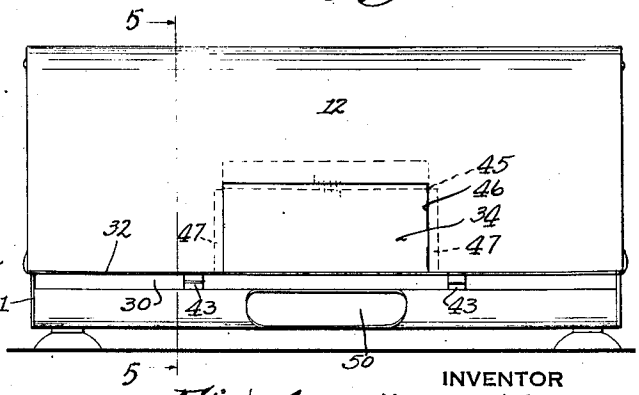


Fig. 4.

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WEB DISPENSER

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Application September 10, 1937, Serial No. 163,207

7 Claims. (Cl. 312—39)

This invention relates to improvements in web dispensers.

It is the primary object of the invention to provide improved means for dispensing a web of paper or the like to facilitate access to the remaining end of the web after a desired length thereof has been torn off.

More particularly it is my object to render a portion of the cut-off knife yieldable in a direction to enable the operator to grasp readily the end of the web which would otherwise be concealed by the tear-off knife after a given length has been removed.

In the drawing:

Figure 1 is a view partially in front elevation and partially broken away to an axial section showing an improved dispenser embodying this invention.

Figure 2 is a view in cross section taken on line 2—2 of Fig. 1.

Figure 3 is a fragmentary detail view taken in section on the line 3—3 of Fig. 2.

Figure 4 is a view in front elevation showing a slightly modified dispenser embodying the invention.

Figure 5 is a view of the modified embodiment of the invention partially in end elevation and partially in the section indicated at 5—5 in Fig. 4.

Like parts are identified by the same reference characters throughout the several views.

The design of the casing is broadly immaterial. I have shown in Figs. 1, 2 and 3, a casing 7 of which the cover 8 has its free end disposed at 9 and has a pivotal connection at 10 with the remainder of the casing. In Figs. 4 and 5 I have shown an arrangement in which the body of the casing 11 is of somewhat different form from that shown in Figs. 1 and 2, the cover 12 being pivoted to the body of the casing at 13 and having its free end portion at 14 next to the dispensing slot hereinafter to be described. The latter construction is somewhat preferred because of the greater facility with which the web may be threaded through the dispensing slot by simply lifting the free end portion 14 of the cover 12.

The web 15 to be dispensed is wound into a roll 16 which, in accordance with usual practice, is provided with a core at 17. To receive this core and other cores of conventional sizes I provide mandrel 18.

As a convenient support for the mandrel I provide the ends of the cabinet 7 or 11 with flanges of U-shaped form as shown at 25 in Figs. 1 and 2. The mandrel may be non-rotatable in the flange, if desired.

In order to serve as a friction brake to prevent the roll from unwinding by momentum after a portion of its web has been withdrawn, I may apply a strip of spring stock 26 to the back of the cabinet shown in Fig. 2, or to the bottom of the cabinet shown in Fig. 5, the spring in either case being biased to press against the roll to prevent it from excess rotation. Friction of the mandrel on the interior of the roll may assist in this function.

The front of the cabinet is provided with a dispensing slot at 30 immediately below the edge 31 of Fig. 1 and the edge 32 of Fig. 4. The edge 31 is serrated and the edge 32 is not. Serration is immaterial. In either case the edge above the dispensing slot 30 constitutes a cut-off knife over which the web of paper may be torn to sever any desired length therefrom.

In both constructions the tear-off knife extends across a door provided at 33 or 34 for the purposes of the present invention. The door 33 is pivoted at 35, well above the door opening 36, the door being preferably embossed outwardly to substantially fit flush with the front face of the cabinet when the door is in its closed position. The contact of the door immediately below the hinge with the inner face of the cabinet limits the outward movement of the door and defines its flush position as aforesaid. The ends of the door may likewise be extended at 37 to engage the interior face of the front wall of the cabinet to limit and define the normal position of the door. A spring 38 wound on the pintle is used to bias the door toward its normal forward position flush with the front wall of the cabinet.

The lower margin 40 of the door is in line with and constitutes a part of the tear-off knife. When a length of web projects from the dispensing slot 30 it can be severed from the rest of the web by simply pulling it upwardly across the tear-off knife 31, 40. The tension on the web under such circumstances is such as to maintain the door 33 firmly in its normal position flush with the front wall of the cabinet. Consequently only a very light spring is required at 38, and it is even possible to rely entirely on gravity for the necessary bias if desired.

One wall of the dispensing slot 30 is provided by the cabinet bottom 41. The other side of the dispenser slot may constitute the tear-off knife 31, 40, if desired, but I prefer to add a flange 42 which is carried by the front wall of cover portion 8 of the cabinet and projects rearwardly therefrom as clearly shown in Fig. 3. In order to prevent the web of paper from springing back after its extremity is torn off, I attach a leaf

spring 43 to the flange 42 at each side of the dispensing slot, which presses like a friction shoe upon the end of the web to engage it frictionally with the bottom 41 of the cabinet and thereby to hold the end of the web immediately in line with the tear-off knife.

The spring also assists in holding the end of the web flat so that it will not be caught and pushed rearwardly by the door as the door opens under pressure of the operator's fingers. If the paper curled upwardly the door might push the end back where the operator could not grasp it.

The construction shown in Figs. 4 and 5 is similar except that the hinge 45 is here located directly at the upper margin of the door opening 46, the terminal extensions 47 being relied upon to determine the forward position of the door. In this instance the flange 42 is located along the free margin of the cover, but otherwise it is identical with the flange 42 shown in Fig. 3. Similarly, the spring friction shoe 43 which appears in Fig. 5 is identical in structure and function with the corresponding shoe shown in Fig. 3 and Fig. 1.

In both of the constructions here illustrated I provide the front wall portion 48 of my cabinet, below the cover portion thereof, with a notch or recess at 50. The flange 42 which defines the top of the dispensing slot is provided with a corresponding and superposed notch at 51 as shown in Fig. 3, the opening 51 being sufficiently wide to permit the door to swing freely in a rearward direction to the limited extent necessary for the operator to grasp the end of the web 15 as held by the spring friction shoe 43. It will be recalled that after one length of the web has been torn off, the remaining end portion of the web will be held by these friction shoes immediately beneath the tear-off knife. Under the pressure of the operator's hand, inserted into the notch 50 as shown in Fig. 2, the door 33 (or 34) will yield inwardly so that the operator's thumb and forefinger can readily grasp the end of the web to draw it out for the carrying off of a new sheet of any desired length.

As soon as the operator grasps the end of the web and begins to pull thereon, the door will automatically reclose so that its cutting or tearing edge will be aligned with the rest of the tear-off knife. Thus when the tearing operation is performed the tear-off knife will, to all intents and purposes, be complete for the whole width of the dispensing cabinet. It is only under the rearward thrust of the operator's hand that a portion of the tear-off knife yields with the door to permit the fresh length of paper to be grasped and pulled forth.

While it is very desirable from the standpoint of operation of the device by an uninitiated operator, that only a portion of the tear-off knife be yieldable upon the door 33 or 34, it is obviously immaterial to the broad principle how much of the tear-off knife is permitted to yield. In other words, the door 33 might be extended for the full width of the cabinet within the broad contemplation of this invention. Such an arrangement, however, would leave no fixed anchorage such as is provided by the friction shoes 43 for the free end of the web.

It is to be understood that a variety of changes may be made in the devices herein disclosed without affecting the subject matter hereinafter claimed.

I claim:

1. A paper dispenser comprising the combination with means including a tear-off knife defining a dispensing opening, of means supporting only a portion of such knife for yielding movement to and from a predetermined position at said opening, other portions of said knife at each side of said yielding portion being relatively non-yieldable, and means immediately behind each such non-yieldable portion of the knife constituting a paper grasping detent adapted to hold the torn edge of a dispensed web from being pushed from the opening by the yielding movement of said first mentioned knife portion.

2. A device of the character described comprising the combination of a web dispensing cabinet having a web dispensing opening and wall portions providing a tear-off edge at one side of the path of web advance and a notch at the other side of such path adjacent said opening, means upon which at least one part of said first mentioned wall portion is yieldable rearwardly respecting the opposing notch, a spring biasing the yieldable part of said wall portion toward a predetermined position on said path, and stop mechanism operatively engageable between said yieldable part and said cabinet at said position to restrain said part against further movement forwardly from said position, and a detent adjacent said position engageable with the forward portion of a web from which a sheet has been torn to retain said forward portion for recapture when the operator's hand presses said yieldable part rearwardly.

3. A device of the character described comprising the combination with a cabinet having a dispensing slot and a notched wall at one side thereof, of relatively fixed and movable wall elements normally aligned with each other at the opposite side of said slot and providing a normally continuous tear-off edge, the relatively movable wall element being opposite the notch in said first mentioned wall and being provided with a mounting upon which it is yieldable rearwardly respecting said notch to give access to a web portion from which a sheet has been torn, and means inter-engageable between said wall elements for restraining the movable wall element from movement on its mounting beyond its position of normal alignment with the fixed wall elements.

4. A dispensing cabinet comprising the combination with a case, web supporting means therein and a lower wall portion across which such web is adapted to be dispensed, of a cover for said case mounted to give access to the interior thereof and provided with a tear-off edge normally having a predetermined position in spaced relation to said lower wall portion, at least a part of said edge having a mounting upon which it is rearwardly yieldable from said position, means biasing said part for forward movement toward said position, and means for restraining said part against forward movement beyond said position, another part of said edge being fixed at said position and being provided with detent means co-operating with said first mentioned wall portion for frictional engagement of the leading end of a web therebetween, whereby to restrain such leading end substantially adjacent the said position to facilitate the grasping thereof when the hand of the operator displaces said yieldable edge part rearwardly.

5. A dispensing cabinet comprising the combination with a container having a front bottom wall portion centrally notched and a cover providing a tear-off edge spaced above said notched portion and provided centrally with an aperture,

a cover element mounted in said aperture and provided with a support upon which said cover element is yieldable rearwardly, said cover element having a tear-off edge normally aligned with that of said cover, means biasing said element against rearward yielding movement respecting said cover, flanges carried by said cover element and engageable with said cover in the normally aligned position of said cover element with said cover to restrain said cover element against movement forwardly from such position, and detent spring elements positioned for engagement with leading end portions of a web adjacent said tear-off edge for the frictional retention of said web pending manipulation of said cover element by the hand of an operator to grasp the portion of the web so retained.

6. In a device of the character described, the combination with a web dispensing cabinet provided with a web dispensing slot and having adjacent said slot a wall with a relatively yieldable central portion and relatively fixed end portions normally aligned to provide a tear-off edge for a web dispensed through said slot, a mounting upon which the yieldable central portion of the wall is carried for rearward movement in opposition to the path of web advance toward said slot, said yieldable wall portion being biased against such movement, stop means limiting the forward movement of said yieldable wall portion beyond a position of alignment as aforesaid with the relatively non-yieldable wall portions, and web detents yieldably grasping the margin of said web on opposite sides of the yieldable central portion immediately at the rear of the relatively non-yielding wall portions of said cabinet, whereby to hold the web against curling when severed and to prevent the web from being pushed rearwardly upon the yielding of the yieldable wall portion, the whole of said tear-off edge being available for tearing successive sheets from the web and said yieldable portion facilitating the recapture of the end of the web from which a sheet has been torn.

7. A device of the character described, comprising the combination with a web support, of an adjacent knife wall providing an edge across which a sheet may be severed from such a web, a portion of said knife wall being fixed and another portion thereof being provided with a mounting upon which said last mentioned portion is yieldable in a direction opposite to that in which the web is dispensed across said edge, said yieldable portion being biased for movement toward a position of alignment with the relatively fixed portion of said knife wall, stop means limiting the movement of said yieldable portion beyond said position in the direction of web advance, and web detent means disposed immediately adjacent said knife wall behind the relatively fixed portion thereof in a position for engagement with marginal portions of a web from which a sheet has been torn, whereby to hold such web from retrogressive movement when said yieldable knife wall portion is made to move rearwardly.

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