Aug. 19, 1924. 1,505,688

C. ARELT

HOLDER FOR STACKS OF SHEETS

Filed Aug. 5, 1922 3 Sheets-Sheet 1

Fig. 1.

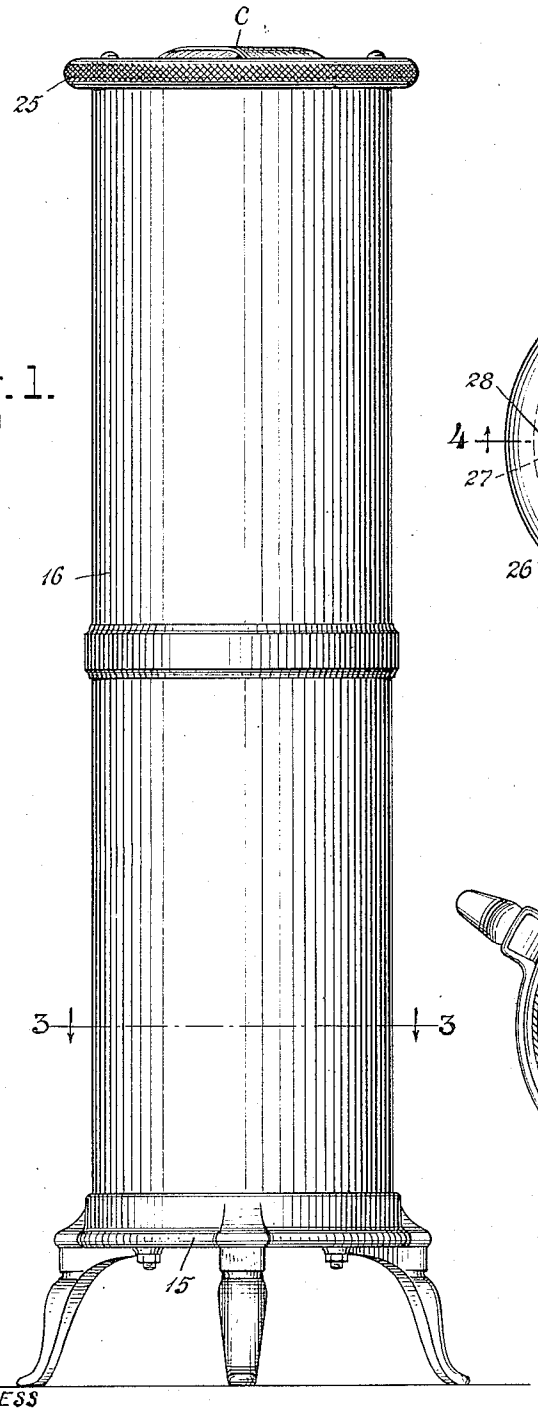


Fig. 2.

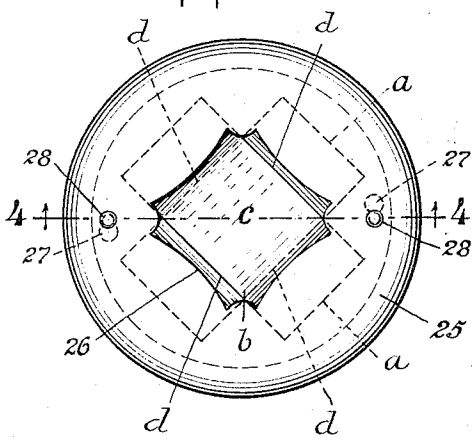
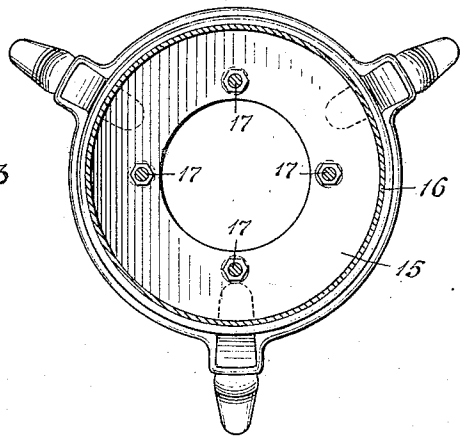


Fig. 3.



WITNESS

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Aug. 19, 1924. **1,505,688**

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HOLDER FOR STACKS OF SHEETS

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Fig. 4.

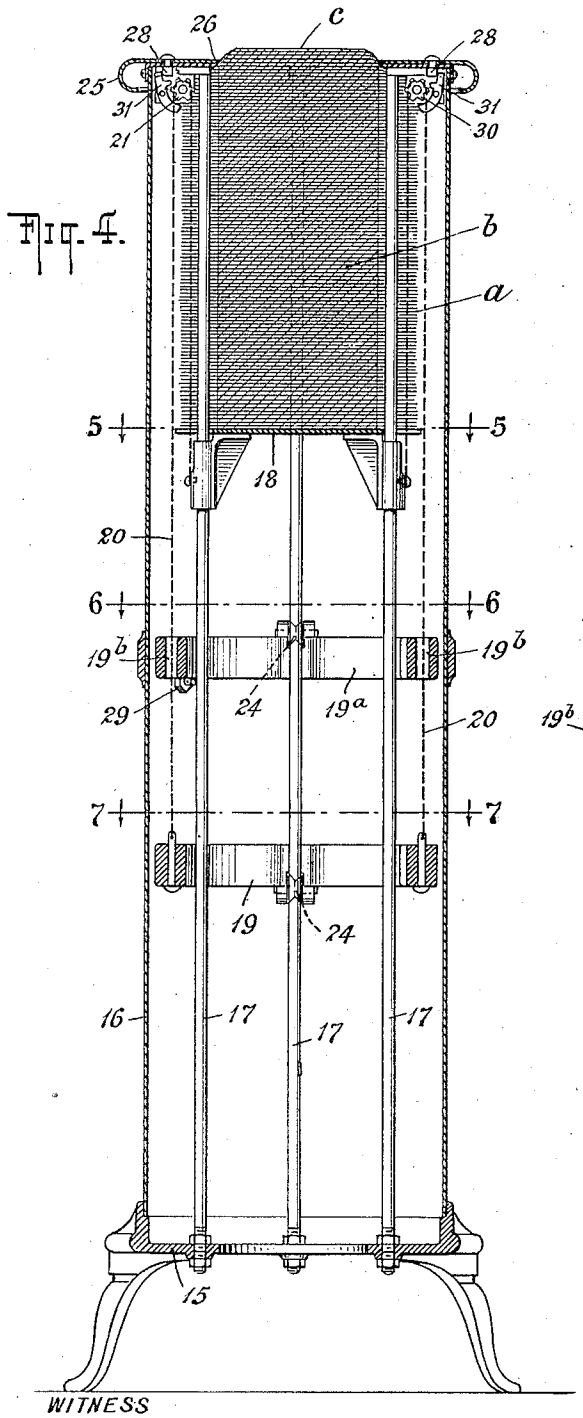


Fig. 5.

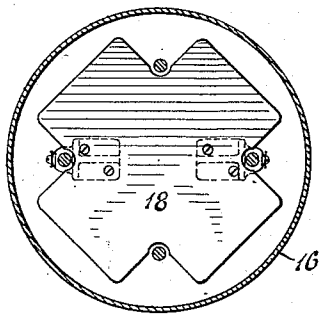


Fig. 6.

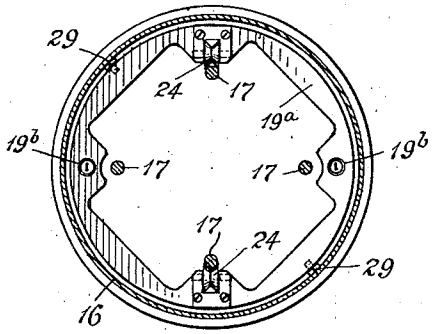
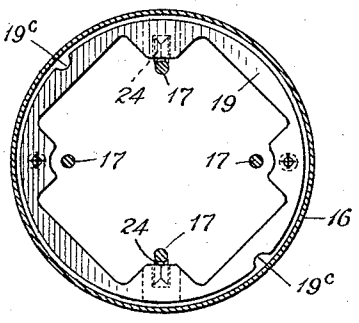


Fig. 7.



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HOLDER FOR STACKS OF SHEETS

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Fig. 8.

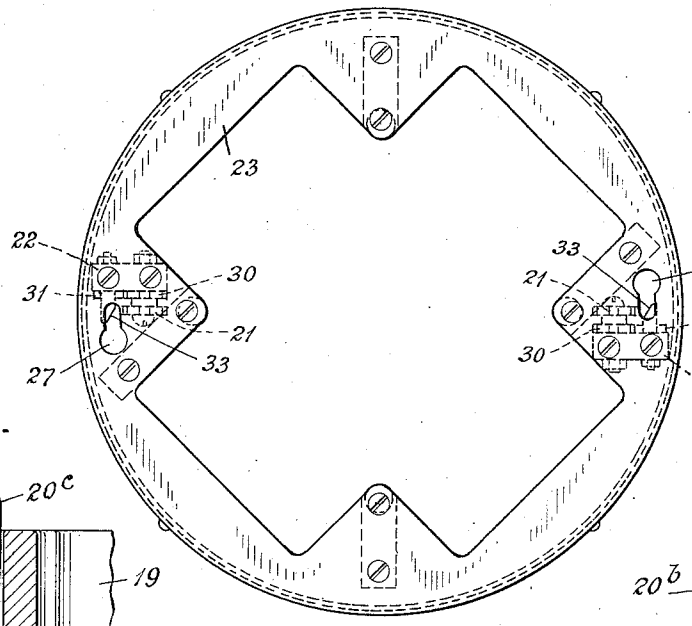


Fig. 11.

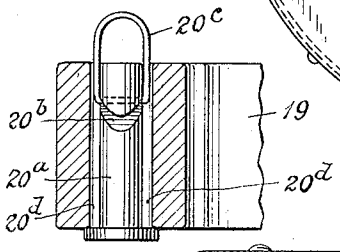


Fig. 12.

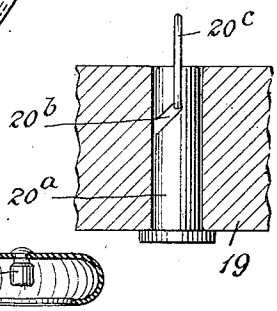


Fig. 9.

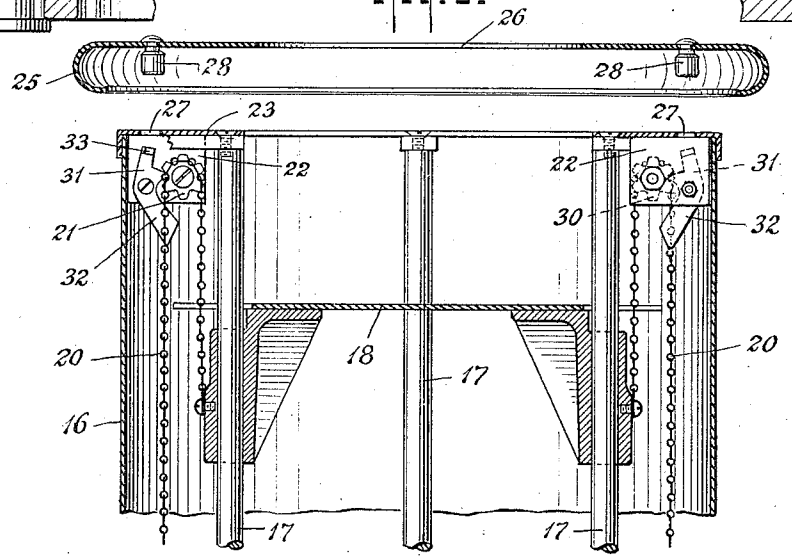
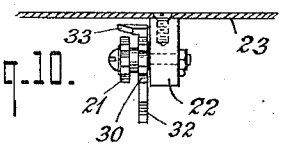


Fig. 10.



WITNESS

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Patented Aug. 19, 1924. 1,505,688

UNITED STATES PATENT OFFICE.

CHARLES ARELT, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO INDEPENDENT PAPER MILLS, INC., OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

HOLDER FOR STACKS OF SHEETS.

Application filed August 5, 1922. Serial No. 579,870.

To all whom it may concern:

Be it known that I, CHARLES ARELT, a citizen of the United States of America, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Holders for Stacks of Sheets, of which the following is a specification.

My invention relates to holders for sheets arranged in stacks, and more particularly to dispensing holders for paper napkins, paper towels, toilet paper and the like, and has for its object to provide a novel and improved arrangement whereby a stack of sheets such as napkins, towels, toilet paper or the like is supported in a manner to facilitate the removal of individual napkins, towels, sheets of toilet paper and the like from the top of the stack at will. Other more specific objects will appear from the description hereinafter and the features of novelty will be pointed out in the appended claims.

In the accompanying drawings, which illustrate an example of the invention without defining its limits, Figure 1 is an elevation of the holder; Fig. 2 is a plan view; Fig. 3 is a horizontal, sectional view on the line 3—3 of Fig. 1; Fig. 4 is a vertical section on the line 4—4 of Fig. 2; Figs. 5, 6 and 7 are horizontal sections taken, respectively, on the lines 5—5, 6—6 and 7—7 of Fig. 4; Fig. 8 is a plan view, on an enlarged scale, with the cover removed; Fig. 9 is a fragmentary section on an enlarged scale; Fig. 10 is a detail section illustrating a pawl and ratchet mechanism included in the device, and Figs. 11 and 12 are detail views showing a preferred method of connecting certain weights with cooperating chains.

In its essentials, the invention comprises an arrangement in which a pressure is exerted from below upon a stack of sheets such as paper napkins, paper towels, toilet paper and the like, which pressure is resisted at the upper end of the stack and causes the central portions of the terminal napkins or the like to bulge outwardly, whereby the removal of individual napkins or other folded sheets is facilitated. In the preferred arrangement the paper napkins or other sheets, folded into rectangular, oblong form, are stacked so that alternate napkins or other sheets cross and project beyond each other, with the result that at its centre the pile is composed of a plurality of thicknesses of sheets in excess of the thickness of the projecting portions of the stack, and the device is constructed so as to establish a resistance to the pressure from below only upon said projecting portions; in this way the central portions of the uppermost folded sheets are bulged upwardly and the folded edges are accentuated so as to be capable of being lifted by the fingers when a napkin or other sheet is desired.

In the illustrated example, the invention consists of a stand 15 upon which a tubular casing 16 is mounted, upright guide members or posts 17 projecting upwardly from said stand in a manner to define guideways or spaces for the projecting ends *a* of the stack of paper napkins or other sheets *b*. The latter, as shown in Fig. 2, may be folded into oblong, rectangular form and in any case are arranged crosswise or transversely of each other, so that the central portions *c* of the pile are located centrally between the posts 17. Because of the fact that the central portions of the napkins or other folded sheets are all superimposed directly upon each other while the projecting ends of alternate napkins or other folded sheets extend transversely to each other, the central portion *c* of the stack is relatively thicker than the projecting ends *a* thereof. Thus, if a pressure is exerted upon said projecting ends, the central portions *c* will be bulged upwardly, with the result that the edges *d* of the uppermost napkins or other folded sheets of the stack are separated and easily picked up by the fingers, so that individual napkins or other sheets *b* may readily be removed from the stack.

The means whereby the described bulging of the central portion *c* of the terminal napkins or the like of the stack is brought about comprises a support 18 shaped to correspond to the shape of the stack as shown in Fig. 5; this support 18 carries the stack *b* of napkins or the like and is slidably mounted upon the posts 17 so as to be movable in vertical directions. The progressive vertical movement of the support 18 resulting from the removal of sheets from the top of the stack is brought about by a suitable means which, in the illustrated example,

comprises a plurality of weights 19 and 19ª; the latter are suspended from chains 20 which pass over sprockets 21 journalled in suitable bearings at the upper end of the casing 16, as for instance, lugs 22 depending from an inwardly extending flange 23 located at the upper end of the casing 16 and have their other ends connected with the support 18, as shown in Figs. 4 and 9. In the preferred form, the chains 20 are connected with the terminal weight 19 in a manner so as to be readily detachable therefrom; for instance, as shown in Fig. 11, headed studs 20ª may be removably mounted in the terminal weight 19 and provided with upwardly inclined recesses 20ᵇ adapted to receive the terminal links or special loops 20ᶜ of the chains 20. The arrangement is such that when the terminal weight 19 is connected with the chains 20, the recesses 20ᵇ of the studs 20ª will be located within the confines of the weight and closed thereby, it being understood that the weight 19 may be provided with diametrically opposite slots 20ᵈ for the accommodation of the loop 20ᶜ if the dimensions of the latter make this necessary. To disconnect the weight from the chains, it is simply necessary to withdraw the studs 20ª from the terminal weight 19 until the recesses 20ᵇ are exposed to permit the loops 20ᶜ to be removed therefrom; to connect the chains with the weight 19 said chains are first passed therethrough and then the loops 20ᶜ are passed into the recesses 20ᵇ after which the studs 20ª are inserted in place in said weight. In the preferred arrangement the chains 20 pass loosely through suitable apertures 19ᵇ in the other weight or weights 19ª which rest normally upon said weight 19, the weights being all provided with guide pulleys 24 arranged to travel along the posts 17 to maintain said weights in their intended paths against undue vibration. As shown in Figs. 6 and 7, the weights are of such form and dimensions as to permit the support 18 to pass through the same to its lowermost position in the casing 16, it being understood that said weights may be subdivided or otherwise increased or diminished to still further adjust the pressure required for upholding the variable weight of the stack *b*.

At its upper end the casing 16 is provided with a cover 25 provided with a central aperture 26, preferably of the form shown in Fig. 2, said cover being preferably detachably connected with said casing in any conventional manner; for instance, the casing 16 may include slots 27 of keyhole form, located in the inwardly extending flange 23 thereof, said slots being arranged to receive headed studs 28 depending from the cover 25 at the proper points. With this arrangement, by passing the studs 28 through the enlarged ends of said slots 27 and then rotating the cover 25 to an extent permitted by said slots, it is firmly locked upon said casing.

In practice, a stack of napkins or its equivalent *b* is carried upon the support 18 and by the action of the weights 19 or their equivalent, is forced upwardly against the cover 25; the weights 19 develop a pressure upon the stack *b* from below which is resisted by the cover 25 and translated thereby into a downward pressure upon the projecting ends *a* of the uppermost napkins or the like of said stack. This causes the central portion *c* of the terminal napkins to be bulged upwardly through the aperture 26 of the cover 25, as indicated in Fig. 4, and thereby causes the edges thereof to prominently stand out, so that the terminal napkin is easily lifted from said stack and drawn through the aperture 26. The latter, because of its distinctive shape, not only facilitates the removal of the napkins or their equivalent in the described manner, but also reduces the possibility of tearing the same at the corners. As each terminal napkin is thus removed, the action of the weights 19 lifts the support 18 to an extent sufficient to always maintain the upper end of the stack *b* pressed upwardly against said cover 25.

As the support 18 gradually rises, the weights 19 correspondingly descend in the casing, and unless provision is made to avoid the same, will finally press the upper end of the stack *b* against the cover 25 with undesirable force. To prevent this, the casing 16 is provided at the proper intermediate point with inwardly extending projections 29 upon which one or more weights 19ª finally comes to rest, as indicated in Fig. 4; from this point on, the remaining weight or weights 19 drop away from the companion weight or weights, thus gradually diminishing the force which is effective upon the stack *b*, so that the effect of the lifting means upon the same is automatically adjusted to agree with the weight of the depleted stack. In this way progressive separation of the weights from the original group takes place and the ease of removal of the terminal napkins in the indicated manner is preserved throughout the entire range of operation of the device. In order that, in the operation of the device, the terminal weight or weights 19 may pass the projections 29 without interference, said weight or weights are provided with grooves 19ᵉ at points in registry with said projections 29.

For the purpose of facilitating the introduction of the stack *b* into the holder and to enable the supply therein to be readily replenished, it is desirable to render the weights 19 or their equivalent inactive to lift the support 18 during such introduc-

tion or replenishment. In the illustrated example this is accomplished by means of pawl and ratchet mechanism consisting of ratchets 30 fixed upon the shafts of the sprockets 21 to rotate therewith and co-operating pawls 31 pivotally mounted upon the lugs 22 which depend from the top flange 23 of the casing 16 and having weighted ends 32 which tend to at all times throw the pawls 31 into engagement with the ratchets 30. These pawls 31 are further provided with cam extensions 33 arranged to be engaged by the studs 28 when the cover 25 is in position on the casing 16 and thereby held in inoperative position to permit the weights 19, 19ª or their equivalent to function in the intended manner as long as the cover is in place. A rotation of said cover in a direction to shift said studs 28 to the enlarged ends of the slots 27 to permit the removal of said cover, automatically disengages the studs 28 from the cam extensions 33 and thereby permits the pawls 31 to engage the ratchets 30 and consequently lock the sprockets 21 against rotation in one direction; in this way the weights 19, 19ª or their equivalent are held against descending, and as a result are rendered inactive to lift the support 18. This adjustment of the mechanism is automatically accomplished before the cover 25 is actually removed from the casing and locks the support 18 against upward movement to permit the introduction of a new stack *b* or the replenishment of a depleted stack without interference and with a minimum of effort. As soon as the cover 25 is replaced in position upon the casing 16 and rotated thereon to lock it in place, the studs 28 will again engage the cam extensions 33 and shift the pawls 31 to inoperative positions and thus release the sprockets 21, whereby the activity of the weights 19 or their equivalent as a lifting agency for the support 18 and stack *b* carried thereby is restored.

The invention provides a holder of simple and inexpensive construction whereby the napkins or other sheets, and more particularly paper napkins, are displayed in a sanitary and attractive manner; the upward bulging of the uppermost sheets in the pile so accentuates the longitudinal edges thereof at the central portion that the average person will readily see how to remove an individual napkin or other sheets without difficulty. This, as previously stated, is accomplished by exerting a lift upon the terminal napkin or its equivalent sufficient to separate it from the pile and draw it through the aperture 26 of the cover 25, the adjacent napkins or other sheets being held against disturbance by the upward pressure exerted against said cover 25 by the stack *b* under the influence of the weights 19 or their equivalent. The stack of sheets is easily placed in position upon the support 18 between the posts 17 which not only fix the stack in place, but serve also as guides for the support 18, which gradually ascends as the napkins or their equivalent are successively removed from the upper end of the stack. The invention eliminates waste and yet makes it easy to procure as many napkins or other sheets as may be desired, and at the same time does away with indiscriminating handling, for instance, of napkins or towels and the like, so that the latter are protected against contamination and are maintained in a sanitary, wholesome condition.

If desired, instructions in the use of the holder may be produced upon any other convenient part of the holder.

Various modifications may be made within the scope of the claims without departing from the nature of my invention.

I claim:

1. The combination of a container, an aperture cover movably mounted thereon, a support within said container for a stack of sheets, mechanism whereby said support is lifted to exert a pressure on said stack from below to cause the topmost napkins to bulge through the aperture of said cover, controlling means arranged to engage said lifting mechanism and lock the same against a lifting movement when the cover is in one position on said container and means on said cover movable therewith to another position on said container to engage said controlling means and adjust the same to an inoperative position to release said lifting mechanism.

2. The combination of a support for a stack of sheets freely movable in vertical directions, means exerting a constant tendency to move said support in one direction and thereby creating a pressure upon said stack in the direction of its length, a device movable to and from an operative position adapted, in its operative position, to engage one end of said stack and resist the lengthwise pressure thereof and thereby position the terminal sheets at said end in a manner to facilitate removal of individual sheets thereat and locking means automatically operated by bringing said device to its inoperative position whereby said pressure exerting means is locked against pressure exerting movement and the support is fixed in position during replenishment of the stack, said locking means being automatically released by bringing said device to its operative position.

3. The combination of a container, an apertured cover rotatably mounted thereon, a support vertically movable within the container for carrying a stack of sheets, a weight connected with said support for lifting the same and thereby exerting a pres-

sure on said stack from below whereby the uppermost napkins are bulged through the aperture of said cover, a ratchet in said container operatively connected with said weight, a pawl in operative co-relation to said ratchet, means on said cover for maintaining said pawl inactive in one position of the cover and for releasing the same in another position of said cover to permit said pawl to engage said ratchet and thereby render the weight inactive to lift said support.

4. The combination of a stand, a tubular casing projecting upwardly therefrom, guiding means extending upwardly from said stand within said casing, a support vertically movable lengthwise of said guiding means and arranged to support a stack of napkins, an apertured member at the upper end of said casing movable to and from an operative position, a weight for lifting said support and for exerting a pressure upon said stack from below whereby the napkins at the top thereof are bulged through said apertured member, when in its operative position, to facilitate the removal of individual napkins and means whereby said weight is automatically locked against a lifting action when said apertured member is in its inoperative position to thereby hold the support against rising during the introduction of a stack of napkins.

5. The combination of a stand, a tubular casing extending upwardly therefrom, upright posts on said stand within said casing, a support vertically movable on said posts and arranged to carry a stack of napkins in which alternate napkins cross and project beyond each other, an apertured cover detachably connected with said casing, a weight for lifting said support and for exerting a pressure upon said stack from below whereby the napkins at the top thereof are bulged through the aperture of said cover to facilitate the removal of individual napkins, pawl and ratchet mechanism whereby said weight is rendered inactive when said cover is removed, and means on said cover whereby said pawls are disengaged from said ratchets when said cover is placed upon said casing to restore the activity of the weights.

6. The combination of a stand, a tubular upright casing carried thereby, a plurality of upright guide posts within said casing, a support for a stack of napkins vertically movable on said guide posts, an apertured cover detachably mounted on said casing, a plurality of weights whereby said support is lifted and a pressure is exerted on said stack from below to bulge the napkins at the top thereof through the aperture of said cover to facilitate the removal of individual napkins, means whereby a weight is automatically rendered inactive and disconnected from said support when said stack has been reduced to a predetermined point by removal of successive napkins therefrom, means whereby all of said weights are rendered inactive when said cover is removed for the introduction of a stack of napkins, and means whereby the activity of said weights is restored when the cover is connected with the casing.

7. The combination of a casing, an apertured cover located in its operative position upon the upper end thereof and movable relatively to said casing to expose the interior thereof, a support in said casing for a stack of napkins, lifting means including a plurality of weights connected with said support for lifting the same to press the upper end of said stack against said cover whereby the napkins at the top are bulged through the aperture thereof to facilitate the removal of individual napkins, pawls pivotally mounted within said casing and arranged to lock said lifting means against operation when the cover is not in its operative position and studs depending from said cover adapted, in the operative position of the cover, to engage said pawls and maintain them in inoperative positions to release the lifting means.

In testimony whereof I have hereunto set my hand.

CHARLES ARELT.