

Feb. 17, 1942.

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2,273,618

DISPENSING DEVICE

Filed April 25, 1940

2 Sheets-Sheet 1

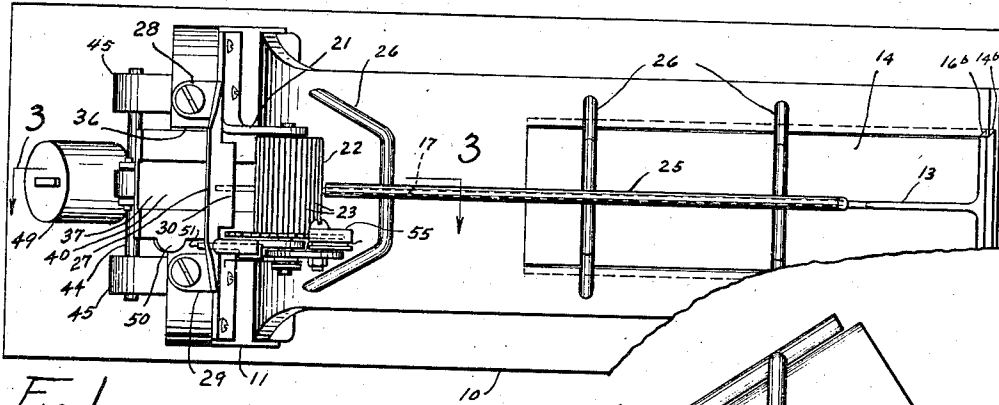


FIG. 1

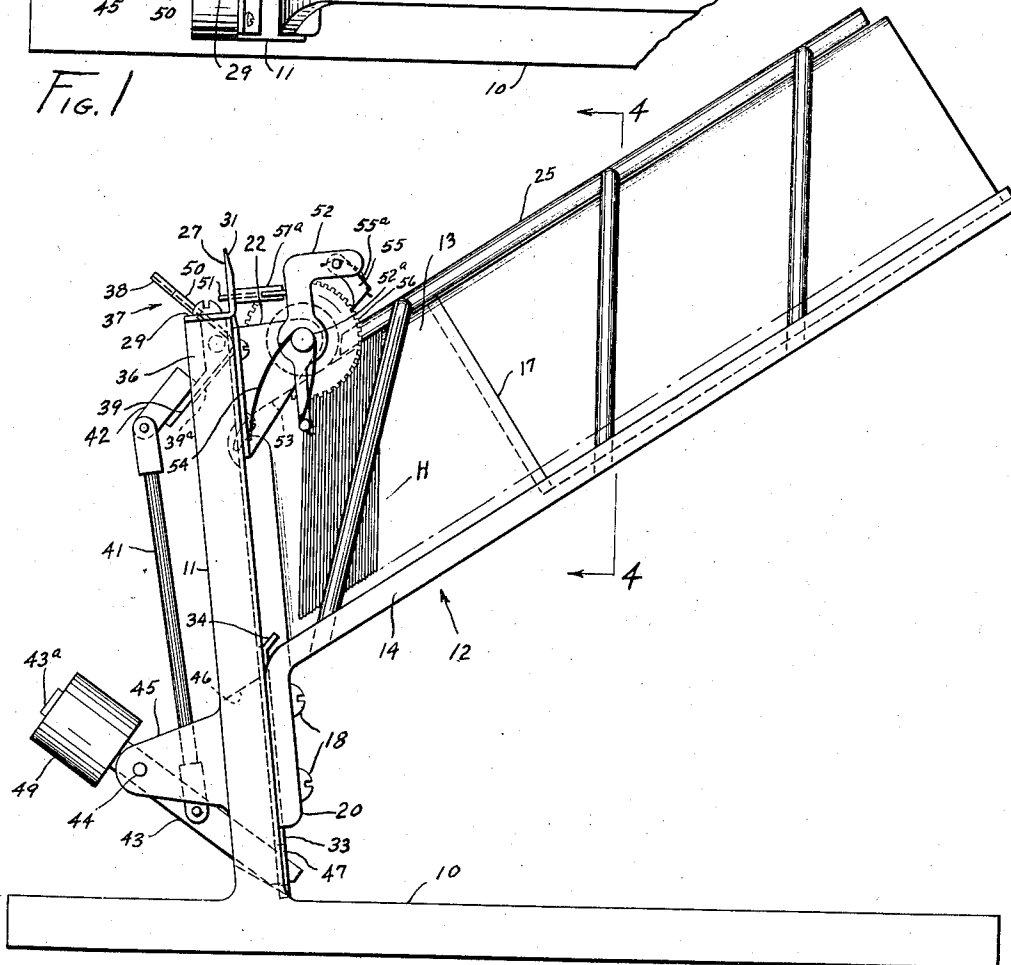


FIG. 2

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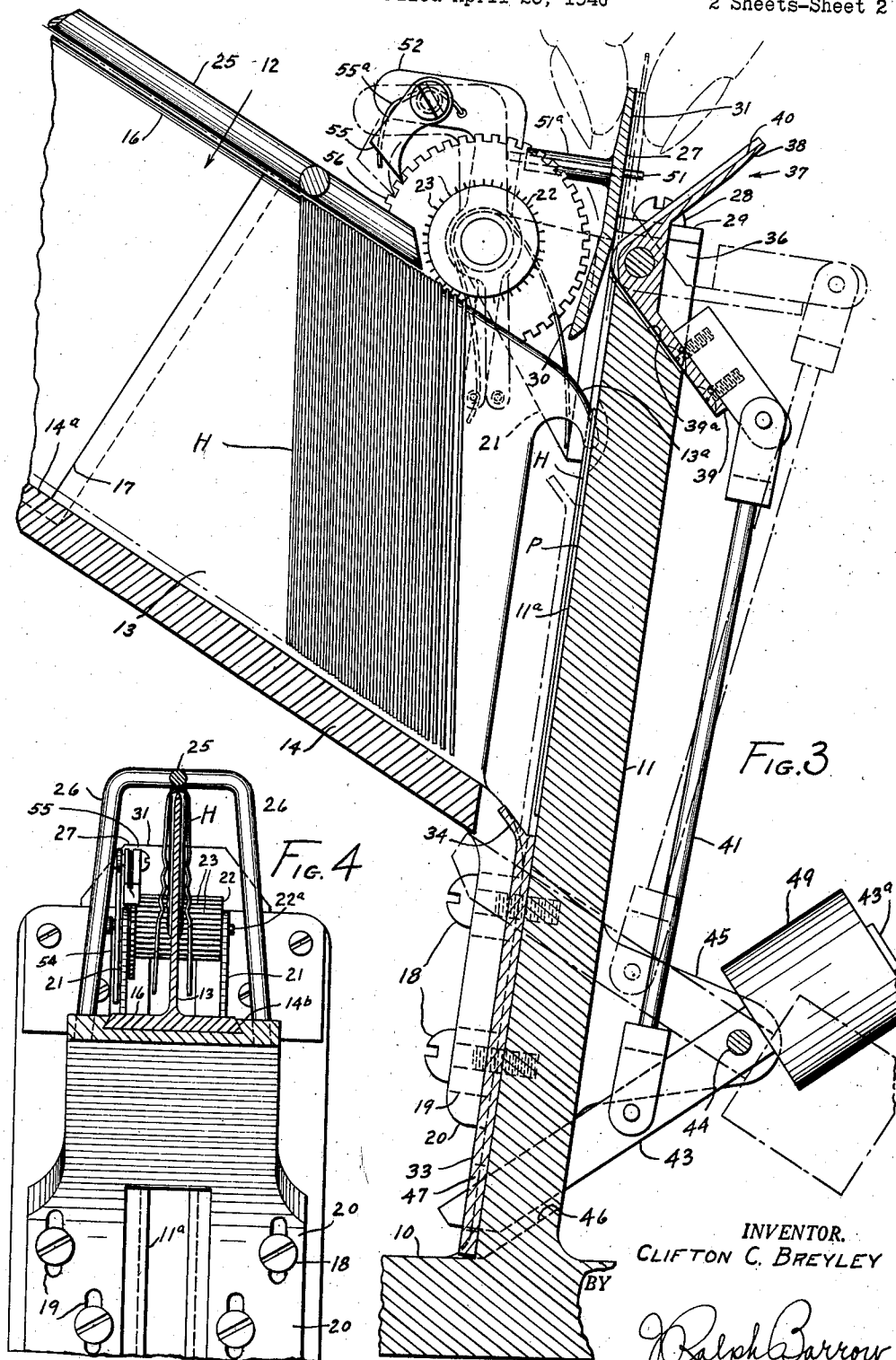
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DISPENSING DEVICE

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,273,618

## DISPENSING DEVICE

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fifty one-hundredths to Hugh L. Strickland,  
Rittman, Ohio

Application April 25, 1940, Serial No. 331,542

15 Claims. (Cl. 312—92)

This invention relates to an article dispensing device, and in particular relates to a device for dispensing hairpins or the like.

An object of the invention is to provide a dispensing device of the class described which is simple, efficient, and easy to operate.

Another object of the invention is to provide a dispensing device of the class described, which is quickly operable at will, as by squeezing pressure exerted by two fingers to urge an article between the fingers.

Still another object of the invention is to provide an improved hairpin or like dispensing device having an article supplying rack or support which is readily removable for reloading with hairpins or the like.

These and other objects of the invention will be manifest from the following brief description and the accompanying drawings.

Of the accompanying drawings:

Figure 1 is a top plan view, partly broken away, of a device for dispensing hairpins, as embodied in the invention.

Figure 2 is a side elevation of Figure 1.

Figure 3 is an enlarged fragmentary cross-section taken substantially on line 3—3 of Figure 1.

Figure 4 is a cross-section taken on line 4—4 of Figure 2.

Referring to the drawings, the numeral 10 designates a base plate for a supporting upright or plate 11, which may extend upwardly at a slight angle to the vertical for purposes to be described. Secured to upright 11 may be a hairpin supply rack 12 which is of inverted-T shaped cross-section and inclines downwardly toward plate 11. A vertical plate 13 of rack 12 is relatively thin with a smooth rounded top edge for slidably receiving a series of hairpins H in straddled relation, with the prongs thereof depending vertically. An outwardly extended portion 14<sup>a</sup> of a bottom plate 14 of rack 12 may have a dovetail groove 14<sup>b</sup> on the upper face thereof, for slidably receiving a cooperating tongue portion 16<sup>a</sup> of an extension 16 of rack 12. The extension 16 is substantially the same thickness and shape as plate 13, and the joining end portions at 17 preferably are V-shaped to aid smooth passage of the hairpins H downwardly over said joining ends (see Figure 1). Rack 12 may be vertically adjustably secured to upright 11, as by means of screws 18, 18 received through slots 19, 19 in a pair of spaced lugs 20, 20 integral with bottom plate 14 of the rack.

Rotatably mounted above rack 12, in spaced

brackets 21, 21, secured to upright 11, may be a feed roller 22 having circumferentially spaced, laterally extending ribs 23, 23, adapted to engage one or more of the lowermost hairpins H of the series retained on supply rack 12. The arrangement is such that roller 22 normally retains the hairpins in an upwardly extending series, but when the roller is rotated a small fraction of a revolution, in counter-clockwise direction as viewed in Figure 3, one hairpin is released from the series to slide downwardly by gravity along the rack 12, until it abuts the upright 11 at a point P, within a groove 11<sup>a</sup> which extends vertically the full length of the upright. The lower end of the top portion of rack-plate 13 may be curved or sloped abruptly downwardly, forming a depression 13<sup>a</sup> close to the face of upright 11, to insure that the hairpins released by feed roller 22 will snap downwardly on the rack to abutment with said upright.

By means of the screws 18 the rack 12, carrying removable extension 16, is vertically adjustable from and toward roller 22 to accommodate hairpins H of different gauges. Supported by means of legs 26, 26, fixed in bottom plate 14 and the extension thereof to straddle the plates 12 and 16, may be a rod 25 which extends in parallel spaced relation to the top edge of the rack to prevent the hairpins from crowding over each other.

At the top end of upright 11 may be a member 27, secured to the upright by means of screws 28, received through laterally spaced lugs 29, 29 of the member engaging the top face of the upright. Member 27 may be provided with a flat tongue portion 30 extending downwardly in spaced angular relation to the inner face of groove 11<sup>a</sup> to permit free endwise passage of hairpins urged upwardly along the groove from position P.

Member 27 may also be provided with an upwardly extending relatively flat portion 31 having the outer face thereof extending from the outer face of tongue 30, this flat portion 31 thereby providing a fixed finger grip for purposes to be described.

The edge portions of groove 11<sup>a</sup> may be dovetailed for slidably receiving a slide-plate 33. Slide-plate 33 is arranged to be shifted upwardly to engage the top edge thereof with the downwardly extending prong ends of a hairpin H at position P, released by a previous operation of feed roller 22. The slide-plate 33 preferably is provided at its top inner edge with an inwardly and upwardly curved flange 34, which in the

lower position of the slide-plate has its top edge out of the path of the hairpins as they slide down the rack 12 toward abutment with upright 11.

The upper end of upright 11 may have a cut-out portion 36 intermediate lugs 29 of member 27. Pivoted between the transverse edges of this cut-out portion may be an element 37 having flat portions 38 and 39 extending angularly of each other from the pivot, the member 37 being adapted to be pivoted for swinging the upper flat portion or grip 38 toward and from substantially abutting relation with the relatively fixed upwardly extending element 31. The element 38 may have a vertically extending groove 40 on its inner face, for permitting endwise passage of hairpins between the fixed element or grip 27 and said shiftable element 38.

For swinging member 37 on its pivot, a link 41 may be pivotally connected at its upper end to a lug 42, secured on the lower portion 39 of said member, and pivotally connected at its lower end to a lever 43, which is pivoted on a pin 44 fixed between laterally spaced lugs 45, 45 on the outer face of upright 11. The lever 43 may extend inwardly of pivot 44, through a vertical slot 46 in upright 11, the pivotal connection of link 41 to the lever being intermediate pivot pin 44 and the upright. The arrangement is such that by engaging fixed element 31 and pivoted element 37 between the thumb and forefinger, and squeezing or pressing said elements toward abutting relation, lever 43, through link 41, will be urged upwardly, so that the inner end portion of the lever, engaging through an opening 47 in slide-plate 33, will urge the latter upwardly. With this upward movement of the slide-plate, its top edge will engage the bottom ends of a hairpin H at P, to urge the same upwardly in groove 11<sup>a</sup> as guided by the tongue 30, and thence upwardly in the groove 40 of the shiftable grip 38, to project a portion of the loop end of the hairpin from between the gripping elements 31 and 38, which projecting portion will be received between the fingers pressing said elements together, whereby the hairpin may readily be removed. The forementioned upwardly and outwardly inclined relation of the inner face of upright 11 prevents the hairpins from tilting inwardly as the slide-plate 33 urges them upwardly.

This movement of the respective parts for ejecting a hairpin is best illustrated by means of full and chain-dotted lines in Figure 3. The downward swinging movement of member 37 may be limited by engagement of the bottom face of the lower portion 39 of said member engaging an angular face 39<sup>a</sup> provided at the bottom of cut-out portion 36.

As soon as the gripping elements 31 and 38 are released by the fingers the weight of slide-plate 33 will cause lever 43 to swing downwardly on its pivot, thereby moving member 37 back to the full-line position thereof, shown in Figure 2.

Fixed on an extension 43<sup>a</sup> of the lever 43, outwardly of the pivot 44, may be a weight 49 for counter-balancing the parts connected to the member 37, so as to permit the gripping elements to be easily pressed together, with a smooth action.

Each time a hairpin is removed from between the gripping elements 31 and 37, the feed roll 22 may be automatically rotated a fraction of a revolution to release another hairpin to slide down the rack 12 to position P. To this end, 75

the shiftable element 38 may be formed with a lug 50 for engagement with an element 51 slidably received through a projection 51<sup>a</sup> on the inner face of element 31. Inward movement of the lug 50 urges element 51 inwardly to swing an arm 52 against the yielding action of a suitable spring 54, said arm being pivoted at 52<sup>a</sup> on a bracket 53 secured to the inner face of upright 11. Arm 52 may have a pawl 55 pivoted thereon held yieldingly by means of a spring 55<sup>a</sup>, in engagement with a toothed wheel 56 secured on shaft 22<sup>a</sup> of the feed roller 22, the cooperating teeth of the wheel 56 being such that said inward movement of arm 52 will cause the pawl to rotate wheel 56 a fraction of a revolution, thereby rotating feed roller 22, in the direction indicated by arrows in Figures 2 and 3, an amount sufficient to release the lowermost hairpin held by the feed roller. This action is repeated each time the elements 31 and 38 are relatively urged together. When said elements are released as previously described, the spring 54 will move arm 52 back to normal position, thereby urging slide element 51 outwardly to its normal projecting position, as shown in Figure 2.

In the operation of the device the rack 12 may first be loaded with hairpins, this being readily accomplished by slidably removing the extension 16 and, after arranging a series of hairpins H thereon, replacing the extension 16 on the device. Whenever a hairpin H is required it is only necessary to compress or squeeze the elements 31 and 38 together between the thumb and forefinger. This causes the slide-plate 33 to be urged upwardly to engage a hairpin received in depression 13<sup>a</sup> at the bottom of rack 12, as indicated at P, the upward movement of the slide-plate thereby urging said hairpin upwardly in endwise relation in groove 11<sup>a</sup> of upright 11, and urging it up between the elements 31 and 38 to project upper loop portion of the hairpin between the fingers, as shown in chain-dotted lines in Figure 3. Each time a hairpin is removed in this manner the slidable element 51 is engaged by lug 50 on pivoted element 38, to rotate feed roller 22, as described, for releasing another hairpin held by the roller for the next successive hairpin removing operation, the released hairpins sliding downwardly by gravity into the depression 13<sup>a</sup> on rack 12.

It will readily be seen that hairpins may be removed from the device in rapid succession with a single stroking or squeezing action of two fingers of the hand. Thus the device shown and described is particularly desirable for use in hairdressing establishments, for example, because the device requires the use of only one hand of the operator for removing the hairpins, while the other hand is left free for other work, such as positioning the hairpins in the hair, as will be understood.

Modifications of the invention may be resorted to without departing from the spirit thereof or the scope of the appended claims. Obviously the invention is not limited to use for dispensing hairpins. With relatively slight changes in proportion and design, for example, the present construction may be utilized for dispensing many articles of varying sizes and shapes. The manner in which the article is received through the dispensing opening of the device depends, of course, on the shape of the article dispensed.

What is claimed is:

1. A device of the class described for dispensing articles comprising a pair of elements relatively

movable toward and from each other and adapted to receive an article therebetween, means for supporting a series of articles in association with said elements, and means operable by relatively pressing said elements together between the fingers to feed articles from said support between said elements and to project the article between the fingers, for removal of the article from the device.

2. A device of the class described for dispensing articles, comprising a guide member for guiding the articles toward a delivery end of the member, a support inclined downwardly toward said member for supporting a series of articles to be supplied toward the guide member by gravity, feed mechanism for normally withholding said series of articles and operable to release the articles toward said member in succession, a shiftable member in association with said guide member, operating means for shifting said shiftable member to urge a released article along said guide member to project the article from the delivery end thereof, and means operable by said operating means for actuating said feed mechanism to release successive articles toward the guide member.

3. A device of the class described for dispensing articles comprising a guide member for guiding the articles toward a delivery end of the member, a support inclined downwardly toward said member for supporting a series of articles to be supplied toward the guide member by gravity, feed mechanism for withholding said series of articles and for releasing said articles toward said member in succession, a shiftable member in association with said guide member, and operating means for shifting said shiftable member to urge a released article through said guide member to project the article from the delivery end thereof.

4. A device of the class described for dispensing articles comprising a guide member for passage of the articles, and having a delivery end, a support inclined downwardly toward said member for supporting a series of articles to be supplied toward the guide member by gravity, feed mechanism for releasing said articles toward said member in succession, a shiftable member in association with said guide member, operating means for shifting said shiftable member to urge a released article through said guide member to project the article from the delivery end thereof, and means operable by said operating means for actuating said feed mechanism.

5. A device for dispensing hairpins or like articles comprising a guide member for passage of the articles and having a delivery end, means for supporting a plurality of articles in association with said guide member, feed mechanism operable to release and supply articles from said support to said guide member in succession, a shiftable member in association with said guide member, a pair of elements at the delivery end of said guide member adapted to receive an article therebetween and one of the elements being relatively shiftable toward and from the other, means connecting said shiftable element with said shiftable member to shift the latter by pressing said shiftable element toward said other element, whereby said shiftable element is adapted to urge a released article through said guide member to project the article outwardly between said elements, and means operable by movement of said shiftable element to operate said feed mechanism.

6. A device for dispensing hairpins or like articles comprising a guide member for passage

of the articles and having a delivery end, means for supporting a plurality of articles in association with said guide member, feed mechanism operable to release and supply articles from said support to said guide member in succession, a shiftable member in association with said guide member, a pair of elements at the delivery end of said guide member adapted to receive an article therebetween and one of the elements being relatively shiftable toward and from the other, means connecting said shiftable element with said shiftable member to shift the latter by pressing said shiftable element toward said other element, whereby said shiftable element is adapted to urge a released article through said guide member to project the article outwardly between said elements, means operable by movement of said shiftable element to operate said feed mechanism, and counter-balancing means for relieving the pressure required to press said shiftable element toward said other element.

7. A device for dispensing hairpins or the like comprising a guide member for passage of hairpins, said member having a delivery end, a support for a series of hairpins in association with said guide member, a member shiftable relatively of said guide member, feed mechanism operable to feed said hairpins in succession from said support into association with said guide member, and means for shifting said shiftable member to urge a released hairpin through said guide member to project the hairpin outwardly of said delivery end.

8. A device for dispensing hairpins or the like comprising a guide member for passage of hairpins, said member having a delivery end, a support for a series of hairpins in association with said guide member, a member shiftable relatively of said guide member, feed mechanism operable to feed said hairpins in succession from said support into association with said guide member, means for shifting said shiftable member to urge a released hairpin through said guide member to project the hairpin outwardly of said delivery end, and means actuated by said shifting means to operate said feed mechanism.

9. A device for dispensing hairpins or the like comprising a guide member for passage of hairpins, said member having a delivery end, a support for a series of hairpins in association with said guide member, a member shiftable relatively of said guide member, feed mechanism operable to feed said hairpins in succession from said support into association with said guide member, means for shifting said shiftable member to urge a released hairpin through said guide member to project the hairpin outwardly of said delivery end, and means actuated by said shifting means to operate said feed mechanism, said shifting means comprising a pair of elements yieldingly compressible toward each other and adapted to receive a hairpin therebetween, said pair of elements being compressible to shift said shiftable member.

10. A device for dispensing hairpins or the like, comprising guide means for passage of hairpins, said guide means having a delivery end, a rack inclined downwardly toward said guide means and adapted to have a series of hairpins depending thereon with the prongs extending downwardly, means for holding said series of hairpins on said rack and operable to release the hairpins in succession to move downwardly on the rack by gravity toward said guide means in said

depending relation, shiftable means in associa-

tion with said guide means, means for shifting said shiftable means to engage the lower end of a released hairpin through said guide means to project the hairpin from said delivery end of the guide means.

11. A device for dispensing hairpins or the like, comprising guide means for passage of hairpins, said guide means having a delivery end, a rack inclined downwardly toward said guide means and adapted to have a series of hairpins depending thereon with the prongs extending downwardly, means for removably mounting said rack, means for holding said series of hairpins on said rack and operable to release the hairpins in succession to move downwardly on the rack by gravity toward said guide means in said depending relation, shiftable means in association with said guide means, means for shifting said shiftable means to engage the lower end of a released hairpin through said guide means and to projecting position from said delivery end of the guide means.

12. A device for dispensing hairpins, comprising a rack for supporting a series of hairpins suspended with the prongs thereof extending downwardly, guide means having a delivery opening, a member shiftable from and toward said delivery opening, feed mechanism operable to feed said hairpins in succession toward said guide means, and means for shifting said member to engage the free ends of a released hairpin to shift the same in said guide means toward projecting relation of the loop of the hairpin through said opening, said shifting means being operatively connected to said feed mechanism to release the hairpins therefrom in succession.

13. A device for dispensing hairpins or the like, comprising guide means for passage of hairpins, said guide means having a delivery end, a rack inclined downwardly toward said guide means and adapted to have a series of hairpins depend-

ing thereon with the prongs extending downwardly, means for holding said series of hairpins on said rack and operable to release the hairpins in succession to move downwardly on the rack by gravity toward said guide means in said depending relation, said rack having a recessed portion in the top edge thereof adjacent said guide means for receiving the released hairpins, shiftable means in association with said guide means, means for shifting said shiftable means to engage the lower end of a released hairpin received in said recess through said guide means to project the hairpin from said delivery end of the guide means.

14. A device of the class described for dispensing articles comprising a guide member for guiding the articles toward a delivery end of the member, means for supporting and progressively urging a series of articles toward said guide member, feed mechanism for withholding said series of articles and for releasing said articles toward said member in succession, a shiftable member in association with said guide member, and operating means for shifting said shiftable member to urge a released article through said guide member to project the article from the delivery end thereof.

15. A device of the class described for dispensing articles comprising a guide member for passage of the articles, and having a delivery end, means for supporting and progressively urging a series of articles toward said guide member, feed mechanism for releasing said articles toward said member in succession, a shiftable member in association with said guide member, operating means for shifting said shiftable member to urge a released article through said guide member to project the article from the delivery end thereof, and means operable by said operating means for actuating said feed mechanism.

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