

W. L. WRIGHT.
CLOSING DISK.
APPLICATION FILED AUG. 2, 1911.

1,036,769.

Patented Aug. 27, 1912.

Fig. 1.

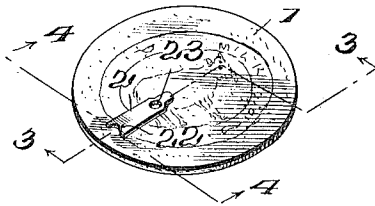


Fig. 2.

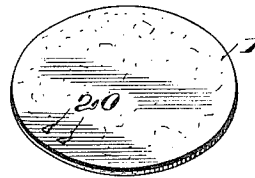


Fig. 3.

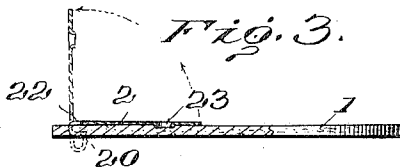


Fig. 4.

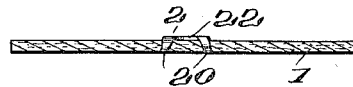


Fig. 5.

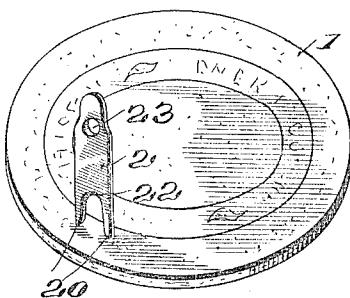


Fig. 6.

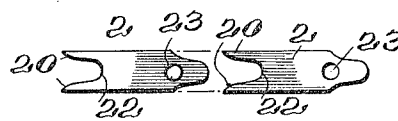


Fig. 7.

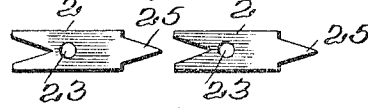


Fig. 8.



Witnesses
W. A. Williams
E. R. Vech

Inventor
Wilbur E. Wright
By *Hubert E. Beck*
Attorney

UNITED STATES PATENT OFFICE.

WILBUR L. WRIGHT, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO AJAX MANUFACTURING COMPANY, OF BALTIMORE, MARYLAND, A CORPORATION OF MARYLAND.

CLOSING-DISK.

1,036,769.

Specification of Letters Patent.

Patented Aug. 27, 1912.

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To all whom it may concern:

Be it known that I, WILBUR L. WRIGHT, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Closing-Disks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in closing disks and the like; and the objects and nature of my invention will be readily understood by those skilled in the art in the light of the following explanation of the accompanying drawings illustrating what I now consider to be the preferred embodiment from among other formations and arrangements within the spirit and scope of my invention.

The invention consists in certain novel features in construction and in combination and arrangement as more fully and particularly set forth hereinafter.

Referring to the accompanying drawings:—Figure 1, is a top perspective of a receptacle closing cap or disk embodying my invention. Fig. 2, is a bottom perspective thereof. Fig. 3, is an edge view thereof partially in section. Fig. 4, is a section on an enlarged scale. Fig. 5, is a perspective view showing the handle severed and in position to be driven through the disk into engagement with an anvil that will turn up the pointed ends of the spurs into hook form so that when the cap making machinery then swings the handle down to lie flat on the stock said turned up ends will also move to a position flat against the under face of said stock. Fig. 6, shows a length of flat wire and illustrates how the handles are cut therefrom. Figs. 7 and 8, are detail views of modifications.

In the drawings, I show a flat comparatively stiff resilient disk 1, usually cut from pulp board, stiff paper material, or the like, or other suitable material, and usually known commercially as a cap for milk or other bottles or jars. These caps are usually employed to close receptacles having an internal annular sealing seat onto which the cap is snapped or sprung under an annular contraction. As the caps are firmly held to such seats, it is awkward and difficult to remove the caps without the aid of a suitable

implement, and even then portions of the contents of the receptacles are often spattered and spilled in the operation of removing the caps. Experience has demonstrated the necessity of providing such caps with handles or pull tabs for the easy and sanitary removal thereof, and various means have been proposed for providing such handles, but all such means are subject to various objections and disadvantages.

My invention has for its object to provide an exceedingly simple, durable and efficient handle or pull tab for such devices to overcome the defects of prior devices, and more particularly to provide certain improvements in the cap of my Patent No. 959,095 issued to me on May 24, 1910.

According to my present invention, the pull tab or handle 2, is composed of a single comparatively short strand or length of what is known on the market as flat wire. For instance, I usually employ tinned or coated flat wire of commerce about three sixteenths of an inch wide and about nine one thousandths of an inch in thickness and of a suitable temper, although I do not wish to so limit my invention. This wire is usually supplied to the trade in suitable lengths wound on reels.

By the provision of suitable cap making and handle forming and applying machinery, the wire is fed from such reels and severed into peculiarly formed suitable lengths to form handles, and such lengths are driven through the cap or disk stock and properly applied thereto with the free ends of the wire lengths flattened out to form handles or pull tabs resting on and parallel with the top faces of the disks or disk stock. I have found it to be convenient to sever the wire into lengths of about three quarters of an inch so formed as to readily puncture the disk stock.

In the preferred form of my invention, the wire is severed to form the handles, without waste of material. I accomplish this result by transversely severing the wire by a V or U-shaped cut, each cut thus forming the rounded free or inner end of one handle and the bifurcated or puncturing end of the next handle. Each handle blank is thus formed rounded and slightly tapering at one end and correspondingly bifurcated at the opposite end, the legs of the bifurcation forming the two longitudinal separated

parallel sharp puncturing ends 20, 20, having their inner longitudinal edges diverging toward the sharp or pointed extremities of the ends. The puncturing ends 20, are driven completely through the disk stock so that a substantial length thereof extends through the stock and said extended ends are doubled or turned up so that when the handle is swung to horizontal position, said ends will rest against and be parallel with the under side of the stock to leave the under surface of the stock approximately smooth and without projections.

The transverse edge 22, of the blank or wire length between the ends 20, can serve to limit the movement of the wire through the disk stock during the puncturing operation, and the inclined or diverging inner longitudinal edges of said ends 20, cause the pointed extremities to diverge or spread apart in passing through the stock and when flattened out beneath the portion of the stock under the handle on the top face of the disk. In the completed disk, the handle is fastened at its outer end in the edge portion of the disk, and the handle is radially arranged on the top face of the disk with its free end extending toward the center thereof.

In view of the exceedingly thin, smooth and slippery nature of the flat wire handle it is desirable to so form the same as to enable the fingers to grasp and hold the handle while exerting the necessary pull thereon to release the cap from the receptacle mouth. It is also advisable to reduce to the minimum, the projection of the handle above the cap when resting thereon. To accomplish these desirable results, I form a vertical perforation, such as 23, through the inner or free end portion of the cap, and usually locate this perforation midway between the side edges of the handle and adjacent to the tapered rounded extremity thereof. The perforation is usually punched downwardly through the handle so that the slight bur formed by the punching operation will be at the under face of the handle. This perforation in the very thin material of the handle enables the fingers to maintain a most firm and efficient grip on the handle in exerting the necessary pull to release the cap and the bur is an aid in preventing the fingers from slipping from the handle although not essential.

The handles are composed of stiff metal preferably flat tempered wire for the purpose of enabling the cap making machinery to drive the two end spurs of each wire length through the cap stock, and yet this wire is of such nature as to permit said machinery to turn up or double back the ends of the spurs without causing the spurs to break off. By employing handles made of this stiff wire and by causing the spurs to

merely lie flat against the under surface of the cap stock, instead of clenching them upwardly into such stock (see Figs. 2, 3, and 4) I am enabled to produce handles that will bodily rock or swing to vertical position without flexing or bending at the angle where the handle turns down in passing through the stock and without causing the spurs to press upwardly through the cap. When one of my handles is thus bodily swung to vertical position the spurs to a slight extent slip down through the cap and the bent ends of the spurs move down from the under face of the cap and assume a vertical position with their points bearing up against the under surface of the cap, as shown by dotted lines in Fig. 3. As the handle swings to upright position, the points of the spurs bear or fulcrum against the under face of the cap and virtually form the fulcrum on which the handle bodily swings or rocks as a whole. The upward extracting pull of the handle on the cap is then exerted on the under surface of the cap through the medium of the spur points. When the handle is bodily swung to upright position, the spur points move to a slightly different position on the under surface of the cap from that occupied by them when originally flattened out so that the upward extracting pull of the handle on the cap is applied through the spur points engaging a fresh or unbroken portion of the under surface of the cap. During the operation of swinging the handle bodily to upright or extracting position, the handle might drop or slide down through the cap, as the spur points fulcrum on the under edge thereof, if means were not provided to limit such longitudinal movement of the handle. For instance, the arch or transverse portion 22, between the two spurs forms a shoulder or stop to engage the unbroken portion of the top surface of the cap between the two incisions formed by the spurs, and limit longitudinal movement of the handle through the cap. The diverging points of the spurs of the handle engaging the under surface of the cap in connection with the shoulder or abutment 22, of the handle at the top surface of the cap, maintain the handle against such objectionable rocking movement or looseness as would render the device inefficient, and furthermore this bifurcated end formation of the handle tends to guide and maintain the handle in proper position and against lateral deflection when being swung down to assume the desired radial position on the cap stock, in the process of manufacturing the caps.

As the caps are smooth and without projections on their under faces and the handles are so thin and flat as not to form objectionable projections on the top faces of the caps, these disks or caps of my inven-

tion can be successfully used in capping machines wherein the caps are fed laterally from piles of caps in magazines or tubes, and inserted in bottles or the like by plungers. For the same reasons, these disks can also be readily paraffined or otherwise water-proofed without interference by the handles. The cap or disk is attractive and neat in appearance and is sanitary by reason of the non-absorbent material of the handle.

The disk can be economically and rapidly manufactured in large quantities by suitable machinery without handle stock waste. If so desired, the handle blank can be formed with a single puncturing point 25, as shown by Fig. 7, or if so desired can be formed with more than two puncturing points 26, as shown by Fig. 8, and as appears in said Figs. 7 and 8, the free end of the handle can be formed otherwise than appears in my preferred embodiment.

The stiff or tempered wire length handle formation of Fig. 7, is formed with shoulders or abutments at the base of the point or spur 25, to bear against the top face of the cap and perform the functions of the arch or transverse portion 22, of the preferred form.

What I claim is:—

1. A closure having a bodily-swingable pull handle free at one end and secured at the other end and composed of a length of flat wire resting on and parallel with the top face of the closure, one end of the wire length having a spur extending through the closure and resting flat on the under face of the closure, said wire length having an edge portion forming a stop at the top face of the closure limiting movement of the wire length down through the closure, said wire length being free to bodily rock with its spur to upright position, and exert upward extracting strain on the closure through the

upwardly directed point of the spur engaging the under face of the closure, the flat faces of the free end of the handle forming a finger hold, the end edges of the secured and the free ends of the wire length being of substantially the same transverse conformation, whereby said handles can be economically cut from a continuous length of flat wire having parallel faces and edges.

2. A closure having a pull handle secured at one end and free at the other end to swing to upright extracting position, said handle consisting of a length of flat wire flattened out on and parallel with the top face of the closure and at one end having tapered spaced spurs and an intervening stop-forming edge, said spurs being driven through the closure, spread laterally, and resting approximately parallel with and against the under face of the closure, substantially as described.

3. A closure having a pull handle confined at one end and free at the other end to bodily swing to upright extracting position, said handle consisting of a length of stiff flat wire resting on and parallel with the top face of the closure and at its confined end having spurs passed through the closure and extending back at the under side thereof to rock vertically with said handle when swung bodily to extracting position, the intervening edge of the wire length between said spurs being arranged at the top face of the closure to limit downward movement of said handle through the closure.

In testimony whereof I affix my signature, in presence of two witnesses.

WILBUR L. WRIGHT.

Witnesses:

F. F. STEVENS,
N. M. BELL.