July 23, 1929. A. J. LEHMANN 1,721,823

CAP REMOVER

Filed June 1, 1925

Fig. 1.

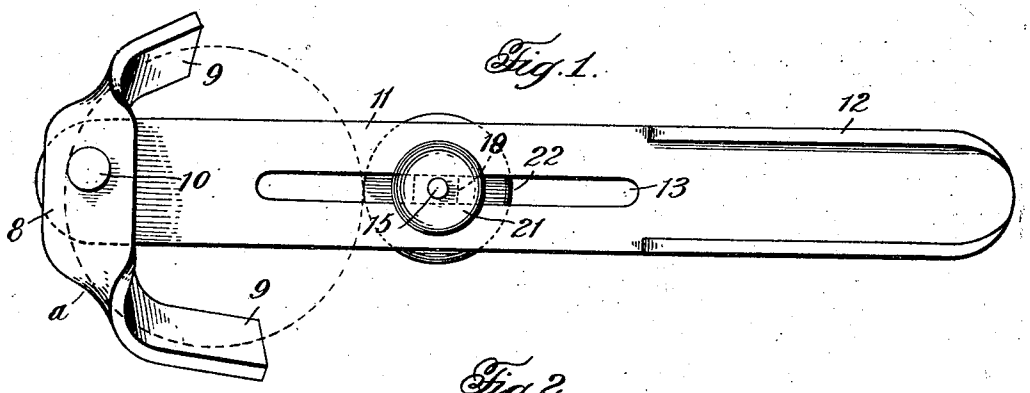


Fig. 2.

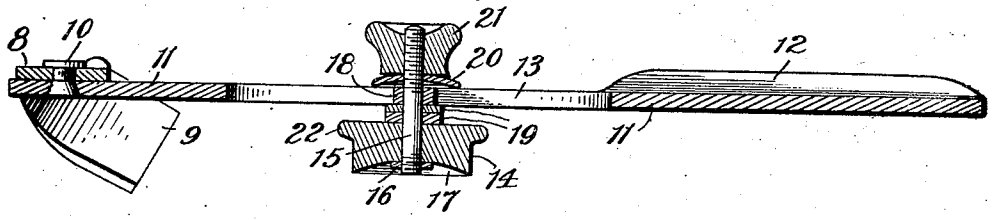


Fig. 3.

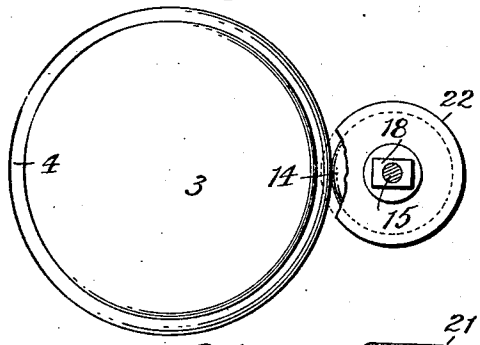


Fig. 4.

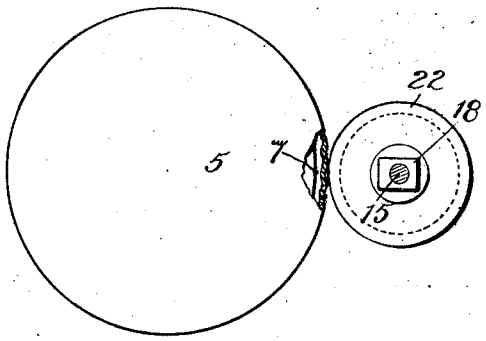


Fig. 5.

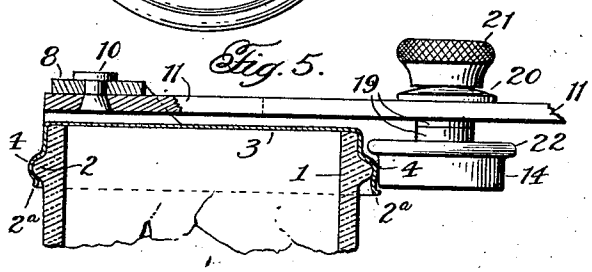
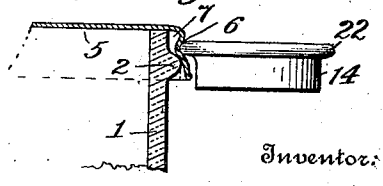


Fig. 6.



Inventor:

August J. Lehmann,

Witness:

Jas. E. Hutchinson.

By

Milans & Milans

Attorneys

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UNITED STATES PATENT OFFICE.

AUGUST JULIUS LEHMANN, OF PHILADELPHIA, PENNSYLVANIA.

CAP REMOVER.

Application filed June 1, 1925. Serial No. 34,219.

My invention relates to new and useful improvements in a cap remover and more particularly to such a device adapted for removing crimped, knurled and plain caps from receptacles such as jelly glasses, fruit jars, bottles and the like, the principal object of the invention residing in the provision of a lever adapted to be swung relative to the receptacle, said lever carrying a roller or similar member adapted to engage the edge of the cap for freeing it from the receptacle.

A further object consists in so connecting the roller to the lever that it may be adjusted for operation on caps of different diameters and providing the roller with a flange on one edge, the flange being adapted to engage the edge of certain forms of caps for removing the same whereas the flat portion of the roller engages the edge of other forms of caps for removing the same.

Another object resides in providing a yoke member adapted to be engaged with the edge of the cap, the lever being pivotally connected to said yoke member with the pivot point off center, the yoke having a relatively flat portion to which the lever is connected and downwardly extending curved ends adapted to encircle a portion of the cap.

With the above and other objects in view, which will appear as the description proceeds, my invention consists in the novel details of construction, and arrangement of parts, described in the following specification and illustrated in the accompanying drawings and while I have illustrated and described the preferred embodiments of the invention, as they now appear to me, it will be understood that such changes may be made as will fall within the scope of the appended claim.

In the drawings:

Fig. 1 is a top plan.

Fig. 2 is a longitudinal vertical section with parts shown in elevation.

Fig. 3 is a detail plan showing the roller of the cap remover engaged with a beaded edge cap.

Fig. 4 is a view similar to Fig. 3 showing the flange of the roller of the cap remover engaged with the edge of a knurled cap.

Fig. 5 is a transverse vertical section through a portion of a cap or jar and the cap thereon, showing the cap remover partly in side elevation and partly in section showing the roller engaged with the edge of a beaded cap, and

Fig. 6 is a fragmental transverse vertical section through a portion of the glass or jar and the cap thereon with the roller of the cap remover in engagement with the edge of a knurled cap.

In the drawings 1 indicates the mouth of a glass or jar having formed on its outer face, adjacent the upper end, the circumferentially extending bead 2. With a glass or jar of the character indicated slightly different forms of caps are adapted to be used and in Figs. 3 and 5 I have indicated at 3 what may be known as a beaded cap having the bead 4 formed on its downwardly extending edge, the bead 2 of the glass or jar being adapted for reception within the bead 4 of the cap as is more particularly illustrated in Fig. 5 of the drawings. In Figs. 4 and 6 of the drawings I have indicated at 5 what may be termed a knurled edge cap, said cap having the downwardly extending knurled edge which engaged the bead 2 in such a manner as to leave the space 7 above the bead as more particularly illustrated in Fig. 6 of the drawings.

In the past some difficulty has been experienced in removing caps of the character illustrated and for this reason I have provided my novel form of cap remover which is adapted for removing either one of the types of caps illustrated or in fact other forms of caps which are at present upon the market. My cap remover comprises the yoke indicated generally at *a*, said yoke having the relatively flat central portion 8 and the end portions 9, said end portions being bent downwardly and inwardly so as to engage the downwardly extending edges of the caps as more particularly illustrated in Fig. 1 and longitudinal curved to conform to the circumferential curvature of the cap to extend around a portion of said cap as quite clearly illustrated in Fig. 1. Pivotally connected to the relatively flat portion 8 by means of the pin or rivet 10 is the lever 11, the pivot point 10 being slightly off center for a purpose which will presently be described. Formed around the outer end of the lever to form a hand-hold is the upwardly extending flange 12 which will form a ready grip for the hand, prevent injury of the hand as would possibly be the case if there was no such flange and the hand merely engaged the relatively narrow edges of the lever. Formed in the lever, intermediate the ends thereof, is the elongated opening 13 and carried by the lever is

the roller 14 which is adapted to be engaged with the cap in a manner to be presently described. The roller is rotatably mounted upon the threaded rod 15 and is held in position upon said threaded rod by the nut 16 threaded on the lower end of the rod and received in the concaved or tapered portion 17 of the roller. Formed on or secured to the threaded rod 15, adjacent the center thereof, is the enlargement or shoulder 18 of the shape more particularly shown in Figs. 3 and 4, said enlargement or shoulder operating in the elongated opening 13 of the lever and preventing rotation of the threaded rod relative to the lever. Received between the upper face of the roller 14 and the enlargement or abutment 18 are the washers 19 which allow for ready rotation of the roller but at the same time hold the same against vertical movement upon the rod. These washers also span the elongated opening 13 and engage the under side of the lever on opposite sides of said opening. Received upon the rod 15, and engaged with the upper face of the lever 11, is the concavo-convex spring washer 20 which is adapted to be forced into tight engagement with the lever 11 by means of the thumb nut 21. When said thumb nut 21 is tightened it draws the upper washer 19 into tight engagement with the under face of the lever and forces the spring washer 20 into engagement with the upper face of the lever to hold the roller in its different adjusted positions in the opening 13. Formed around the upper edge of the roller 14 is the flange 22.

When it is desired to remove a cap from a glass or jar the remover is positioned as shown more particularly in Figs. 1 and 5 of the drawings with the yoke member *a* engaging around one side of the cap with the end portions 9 over-lying and engaged with the downwardly extending edge of the cap. When it is desired to remove what is known as a beaded cap such as illustrated in Figs. 3 and 5 the thumb nut 21 is released so that the roller 14 may be positioned with the straight edge thereof, or that portion below the flange, in engagement with the bead 4 of the edge of the cap. When thus adjusted the thumb nut 21 is again tightened to hold the roller in its adjusted position. Preferably the roller is adjusted with the lever 11 thrown towards the top in Fig. 1 and as the pivot point 10 is somewhat off center when the lever is moved downwardly a tight engagement of the roller with the edge of the cap will be secured. By swinging the lever backwards and forwards the roller will roll over the beaded edge 4 and will straighten the same out as shown more clearly at the right of Fig. 5 of the drawings. With the edge thus rolled straight the cap may very easily be removed. When it is desired to remove a knurled edge form of cap the flange 22 of the roller will be engaged with the edge of the cap, above the bead 2, as more particularly illustrated in Figs. 4 and 6 of the drawings. Then by swinging the lever, as previously described, the flanged edge of the roller will press the edge of the cap inwardly, above the bead 2, as more particularly illustrated in Fig. 6 of the drawings, and release the edge from the bead of the glass or jar and allow the removal of the cap. As previously stated by forming the flange 12 around the edge of the outer end of the lever a good hand-hold is provided and the edge of the lever is of such a thickness and curvature as to prevent injury to the hand of the user. I wish to lay particular stress upon the fact that I have provided a cap remover of relatively simple construction in which the engaging roller is horizontally adjustable with respect to the lever and by such adjustment the cap remover is adapted for use with caps of different diameters.

Having fully described my invention what I claim as new and desire to secure by Letters Patent is:—

A device of the character described adapted for removing caps having a depending flange from receptacles having an outwardly extending circumferential bead which is engaged by the cap flange, comprising a member adapted to engage the cap and extend partially around the circumference thereof, a horizontally extending lever pivotally connected to the member with the pivot point off center, a vertically extending axis carried by the lever and longitudinally adjustable thereof, and a freely rotatable member mounted on the axis, said rotatable member having two engaging portions, one extending vertically and the other projecting beyond the vertical portion, the vertical portion being adapted to engage the depending flange of the cap at the bead of the receptacle and the projecting portion adapted to engage the depending flange above the bead.

In testimony whereof I hereunto affix my signature.

AUGUST JULIUS LEHMANN.