

Dec. 31, 1957

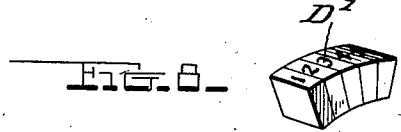
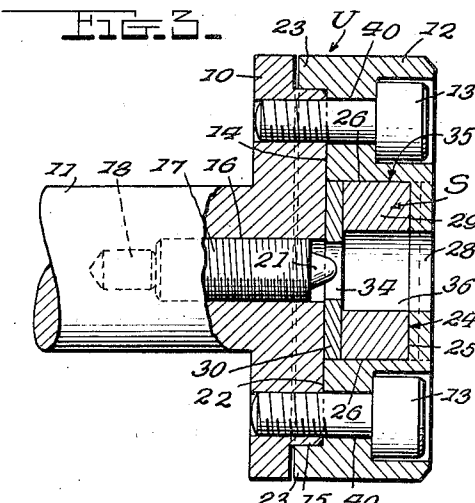
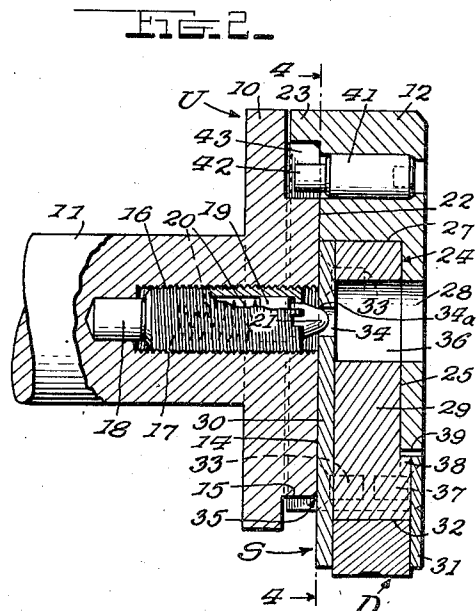
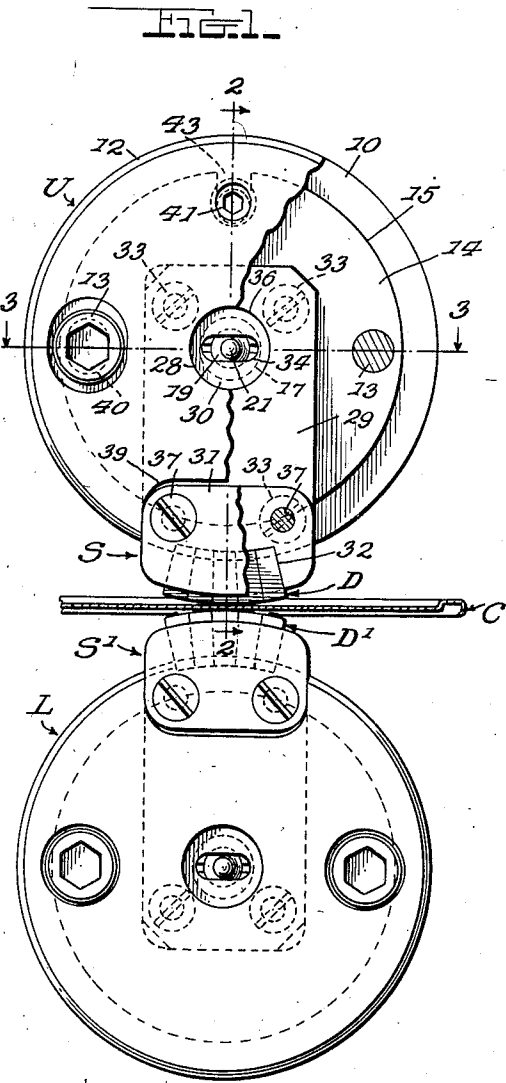
E. J. FIALA

2,818,015

CAN END MARKING MEANS

Filed May 1, 1956

2 Sheets-Sheet 1



INVENTOR

Edward J. Fiala

BY
Mason, Porter, Miller & Stewart
ATTORNEYS

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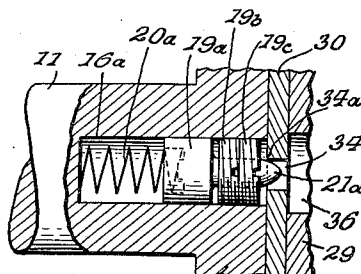
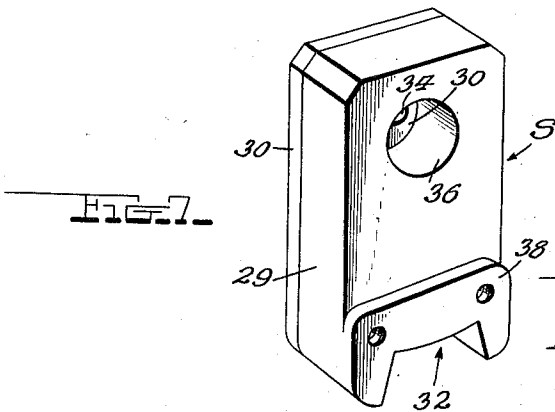
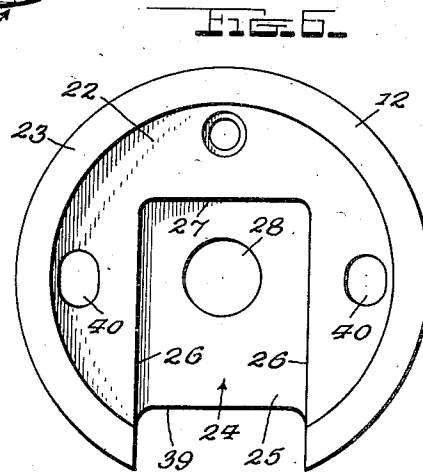
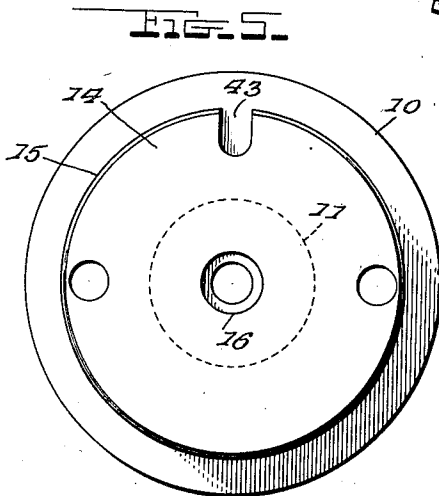
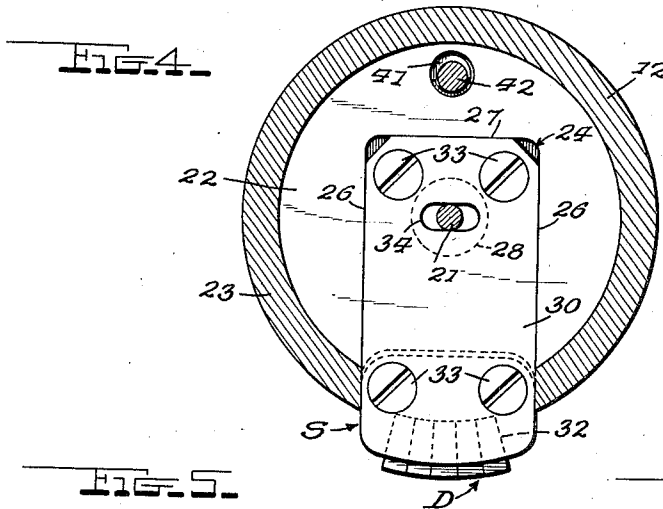
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2 Sheets-Sheet 2



INVENTOR
Edward J. Fiala

BY
Mason, Porter, Miller & Stewart
ATTORNEYS

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2,818,015

CAN END MARKING MEANS

Edward J. Fiala, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N. Y., a corporation of New York

Application May 1, 1956, Serial No. 581,933

8 Claims. (Cl. 101—5)

This invention relates to a novel device for marking the end closures of cans, to identify the can contents. Marking devices are customarily employed on can closing machines in such association with the cover feeding means as to mark the can covers as they are fed to the closing machines for seaming onto the filled cans. The marking is accomplished either by printing in ink upon the can end closures or by deforming the metal, such as embossing. In either case, the closures are fed between upper and lower driven heads. If embossing is to be done, these heads have coacting embossing dies as in U. S. Patent 2,406,151, issued August 20, 1946, to A. L. Kronquest. If printing in ink is to be accomplished, the upper head carries printing type and the lower head carries a platen. The present invention is intended primarily for embossing but could well be adapted for printing by simply substituting printing type for the embossing dies of the upper head and substituting a platen for the coacting dies of the lower head. With this explanation in view, it is to be understood that references to "dies" appearing hereinafter are to be considered as illustrative rather than necessarily limiting to actual dies.

One object of the invention is to provide a new and improved construction which permits quick and easy die changing as required, according to the contents being sealed in the cans.

Another object is to provide a novel construction including a die-carrying slide, said slide being receivable in a substantially radial pocket of the rotary head and being held against inadvertent removal by a yielding detent.

A further object is to provide a novel construction for giving access to the slide-holding detent with a releasing tool whenever the slide is to be removed.

A still further object is to provide a novel head construction in which two head sections are secured together and one of said head sections is recessed to provide the slide-receiving pocket.

Another object is to provide for rotatively adjusting the slide-carrying head section upon the shaft-carried head section to accurately position the dies.

Yet another object is to provide a novel slide construction in which one end portion of a plate forms a side wall of a die-receiving socket, and in which another portion of said plate coacts with the aforesaid detent to hold the slide in the head.

A still further object is to provide a comparatively simple and inexpensive construction, yet one which will be durable and efficient.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawings.

In the drawings:

Figure 1 of the accompanying drawings is an outer end view of the upper and lower heads, showing a can cover in contact with the dies of said heads, portions being broken away.

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Figures 2 and 3 are diametrical sectional views on lines 2—2 and 3—3 of Figure 1, partly in elevation.

Figure 4 is a vertical sectional view on line 4—4 of Figure 2.

Figure 5 is an outer end view of the inner head section.

Figure 6 is an inner end view of the outer head section.

Figure 7 is a perspective view of the slide with the die-clamping plate removed.

Figure 8 is a perspective view of the dies of the lower head.

Figure 9 is a fragmentary detail sectional view showing another form of slide-holding detent.

A preferred construction has been shown in the drawings and will be rather specifically described but attention is invited to the possibility of making variations.

An upper shaft-carried head U and a lower shaft-carried head L are shown. The upper head U carries a slide S having recessed dies D to contact with the can end closures C, and the lower head L carries a slide S' having coacting type dies D'. The upper and lower heads U and L are identical in most respects and a description of one plus an explanation of the differences, will suffice. Also, the upper and lower slides S and S' are practically identical and a description of one will be sufficient. The upper head U and associated elements have been selected for detailed illustration and description.

The head U embodies an inner section 10 on one end of a shaft 11, and an outer section 12 carrying the slide S, said sections 10 and 12 being secured together by screws 13. Both sections 10 and 12 are preferably of circular outline.

The inner head section 10 has a flat outer end surface 14 facing away from the shaft 11, and said section 10 is formed with a peripheral step 15 at the perimeter of said outer end surface 14. At its center, the head section 10 has a cavity in the form of an axial threaded bore 16 (Figures 2 and 3) which opens through the end surface 14 and is shown as extending into the shaft 11. An exteriorly threaded tubular casing 17 is disposed in the threaded bore 16 and is located in a definite axial position by a plug 18. A detent 19 and a detent-projecting spring 20 are disposed in the casing 17, said detent having a rounded nose 21 which normally projects beyond the outer end surface 14 of the head section 10 and engages the slide S to hold the latter against sliding from the head. In Figure 9, a different form of detent 19a is held in a bore 16a by a threaded ring 19b and a lock ring 19c, said detent being outwardly pressed by a spring 20a and having a rounded nose 21a to engage the slide S.

The outer head section 12 has a flat inner end surface 22 lying against the outer end surface 14 of the inner head section 10, and said outer section 12 has a circumferential rib 23 snugly surrounding the step 15 of the inner head section 10. A substantially radial recess 24 is formed in the outer head section 12 and extends to the periphery thereof, said recess 24 opening through the inner end surface 22 and being spanned by the end surface 14 of the inner head section 10. The recess 24 has a flat side wall 25 parallel with the end surface 14, two parallel edge walls 26, and an inner end wall 27 at right angles to said walls 25 and 26. A central opening 28 extends to the recess 24 from the outer end surface of the outer head section 12, for a purpose to appear.

The slide S embodies a substantially rectangular block 29 and two plates 30, 31. The outer end of the block 29 has a type-receiving notch 32. This notch is co-operable with the plate 31 and with the outer end of the plate 30 in forming a receiving and holding socket for the dies D.

The plate 30 extends from end to end of the block 29, at the inner side of the latter, and is secured to said block by countersunk screws 33. A portion of the plate 30 is formed with a slot 34 which receives the nose 21 of the detent 19 to hold the slide S against sliding from the pocket 35 of the head U. This pocket is formed by the recess 24 and the spanning portion of the end surface 14 of the head section 10. An opening 36 is formed in the block 29 and communicates at its inner end with the slot 34. The outer end of the opening 36 registers with the opening 28 of the outer head section 12. The opening 36 and slot 34 thus provide the slide S with a tool-receiving recess extending from the opening 28 of the head U to the open end of the bore 16. Thus, when the slide S is to be removed from the pocket 35, a screw driver or other tool may be inserted through the openings 28 and 36 and used to push the detent nose 21 from the slot 34, permitting withdrawal of said slide S. The detent nose 21 or 21a engages the inner edge 34a of the slot 34 in the plate 30 and thereby urges the slide S to its seated position and retains it therein.

The plate 31 is removably secured to the block 29 by screws 37 and serves normally to clamp the dies D in the socket 32. This plate 31 may be easily removed when the dies are to be changed. A boss 38 is preferably formed on the block 29 for contact with the plate 31, and the outer head section 12 is notched at 39 to receive said boss and plate.

The screws 13 which secure the head sections 10 and 12 together pass through slots 40 in the outer section 12. When these screws are loosened, the head section 12 may be rotatively adjusted on the section 10 to accurately position the dies D, and re-tightening of said screws will clamp said section 12 in adjusted position. It is preferable to mount an eccentric-type adjusting device 41 in the head section 12 and to engage its eccentric 42 with a notch 43 in the head section 10. The adjusting device 41 is accessible for turning with a tool, and turning of said device adjusts the head section 12 on the section 10.

Structural details above described in connection with the upper head U, apply equally well to the lower head L, except that the adjusting device 41, notch 43 and slots 40 are not required for said lower head.

From the foregoing, it will be seen that novel and advantageous construction has been provided for attaining the desired ends. However, attention is again invited to the possibility of making variations within the scope of the invention.

I claim:

1. In a can end closure marking means, a shaft having an inner head section at one end, said inner head section having a flat outer end surface facing away from said shaft and disposed in a plane at a right angle to the shaft axis, said inner head section also having an axial bore which opens through said flat end surface, an outer head section having a flat inner end surface lying against said flat outer end surface of said inner head section, said outer head section having a substantially radial recess which opens through the periphery of said outer head section and through said flat inner end surface of said outer head section, said outer head section also having a substantially central opening from its outer end surface to said recess, a slide inserted into said recess and contacting with the recess-spanning portion of said outer end surface of said inner head section, said slide having a die-receiving socket in its outer end, a spring-pressed detent mounted in the aforesaid axial bore of said inner head section and engaging said slide to hold the slide in the aforesaid recess, said slide having an opening extending from the aforesaid opening of said outer head section to said detent to provide access to said detent for release, and means for securing said outer head section to said inner head section.

2. A structure as specified in claim 1; said inner head

section having a circumferential step, said outer head section having a circumferential rib snugly surrounding said step.

3. A structure as specified in claim 1, in which said securing means permits rotative adjustment of said outer head section on said inner head section, and an eccentric adjusting device mounted in one of said head sections and engaging the other of said head sections for effecting said rotative adjustment of said outer head section.

4. In a can end closure marking means, a slide block having parallel flat sides, said block having a notch in one of its ends and opening through both of said flat sides, a flat plate secured against one of said flat sides and extending substantially from end to end of said slide block, said plate having one end portion spanning said one side of said notch, and a relatively small flat plate secured to the other of said flat sides and spanning the opposite side of said notch, said notch and said plates coacting in forming a die-receiving socket, the first mentioned plate having a detent-engaging opening, said slide block having a recess which extends to said opening from said other of said flat sides.

5. In a can end marking means a shaft having a head at one end, said head having an open-ended pocket elongated radially of said head, the open end of said pocket being disposed at the periphery of said head, said head also having a cavity which opens through the side of said pocket toward said shaft, said head also having an opening opposite said cavity and extending from said pocket to the outer end of said head, a slide removably received in said pocket and having can end marking means, said slide having a recess therethrough, the ends of said recess being disposed respectively at said cavity and said opening, and a spring-pressed detent mounted in said cavity for movement toward and from said opening, said detent having a nose normally received in the adjacent end of said recess; whereby said detent normally holds said slide in said pocket but may be released by inserting a tool through said opening into said recess and utilizing said tool to push said nose from said adjacent end of said recess.

6. A structure as specified in claim 5, in which said slide includes a block through which the major portion of said recess extends, and a plate through which the inner end portion of said recess extends, the outer end of said block having a notch receiving said can end marking means, one side of said notch being closed by the outer end portion of said plate, and a relatively small plate secured to said block and closing the opposite side of said notch.

7. A structure as specified in claim 5; said head comprising an inner end section joined to said shaft, an outer end section abutting said inner end section, said outer end section having a recess cooperable with said inner end section in forming said pocket, and means securing said end sections together.

8. A structure as specified in claim 5; said head comprising an inner end section joined to said shaft, an outer end section abutting said inner end section, said outer end section having a recess cooperable with said inner end section in forming said pocket, and means connecting said outer end section with said inner end section for rotative adjustment with respect thereto about an axis coaxial with said shaft.

References Cited in the file of this patent

UNITED STATES PATENTS

1,840,680	Schubach	Jan. 12, 1932
1,910,278	Browning	May 23, 1933
2,362,206	Kronquest	Nov. 7, 1944
2,447,015	Jacobs	Aug. 17, 1948
2,447,030	Rosenlof	Aug. 17, 1948
2,585,410	Schott	Feb. 12, 1952