J. E. ABRAMS.

FLANGING HEAD.

APPLICATION FILED JULY 23, 1910.

1,196,632.

Patented Aug. 29, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

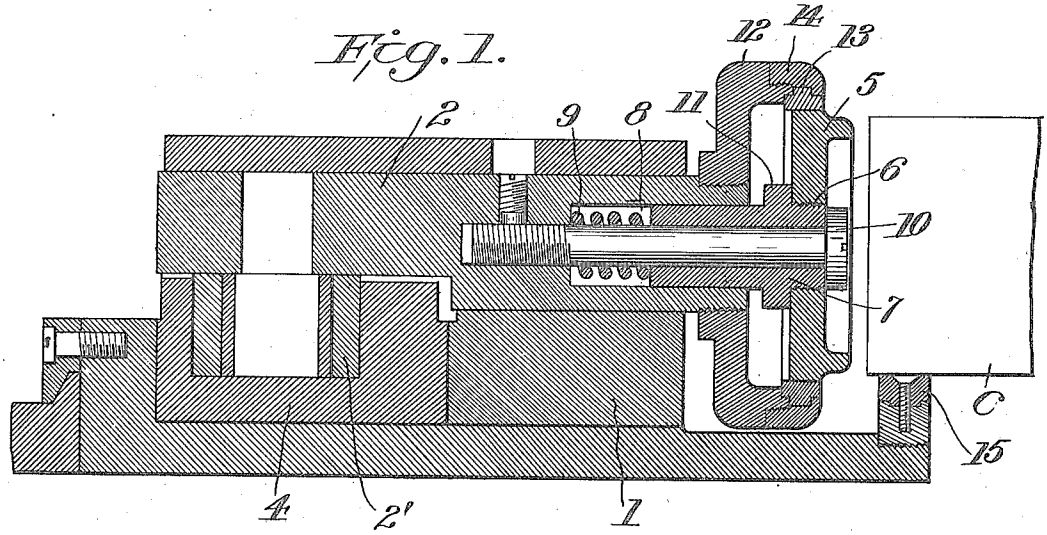
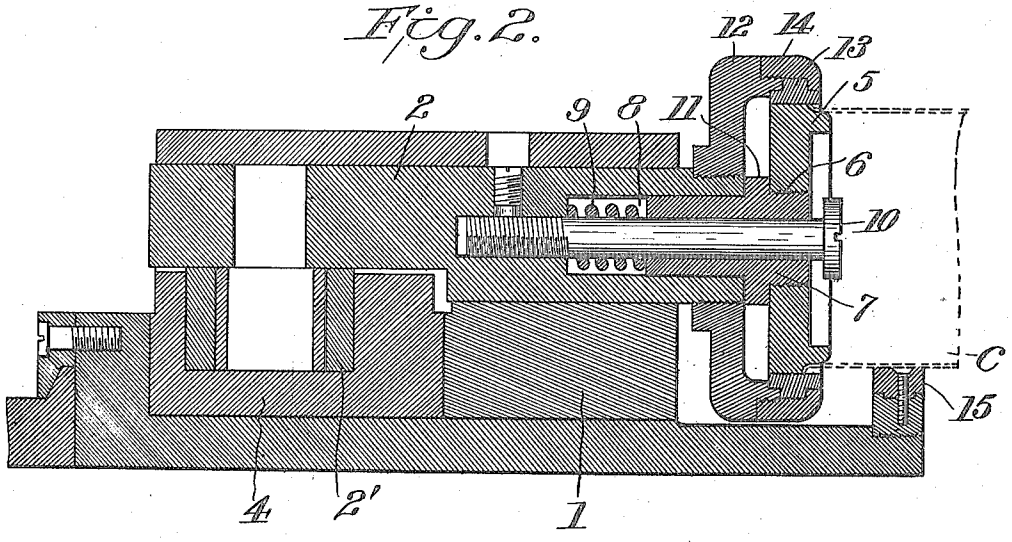


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

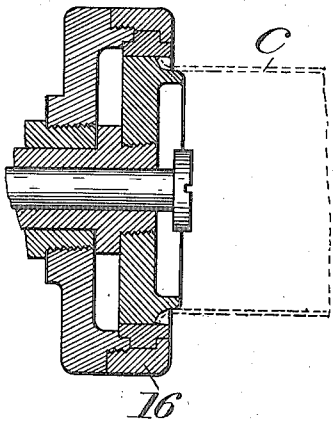


Fig. 4.

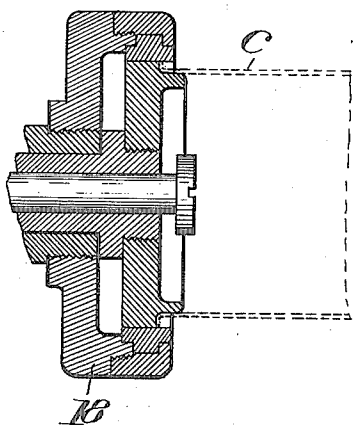


Fig. 5.

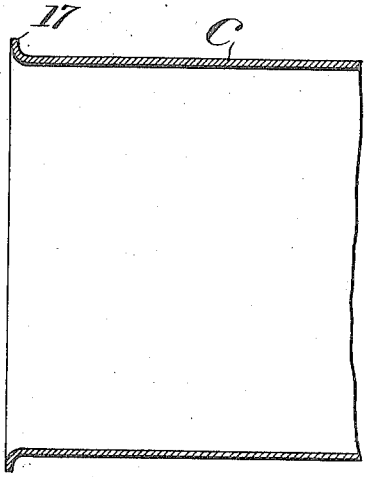
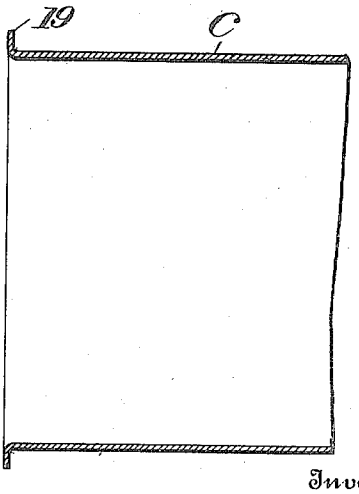


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

JESSE E. ABRAMS, OF BALTIMORE, MARYLAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CONTINENTAL CAN COMPANY, INC., A CORPORATION OF NEW YORK.

FLANGING-HEAD.

1,196,632. Specification of Letters Patent. Patented Aug. 29, 1916.

Application filed July 23, 1910. Serial No. 573,428.

To all whom it may concern:

Be it known that I, JESSE E. ABRAMS, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Flanging-Heads, of which the following is a description, reference being had to the accompanying drawing and to the letters and figures of reference marked thereon.

The invention relates to new and useful improvements in flanging heads, and more especially a flanging head which includes a die that is adapted to operate upon a can body for turning a flange at the outer end thereof.

An object of the invention is to provide a flanging head with a die which is yieldingly supported, and which operates to strip the can body from the flanging head.

A further object of the invention is to provide a limiting ring in connection with a flanging die, which ring may be readily detached and a new one substituted therefor.

These and other objects will in part be obvious, and will in part be hereinafter more fully disclosed.

In the drawings which show by way of illustration one embodiment of the invention,—Figure 1 is a section of a flanging head embodying my improvements; Fig. 2 is a similar view, showing the die in position for the completing of the flanging operation; Fig. 3 is a view of a head such as shown in Figs. 1 and 2, and showing the first operation upon the can body; Fig. 4 is a view of a slightly different form of die for performing the second operation upon a can body; Fig. 5 shows a can body having a preliminary flange or curl formed thereon; and Fig. 6 shows a can body having a finished flange formed thereon.

My improved flanging head is adapted to be used in connection with any desired operating means, and, therefore, I have merely shown herein a support 1 in which the head may be reciprocated. The flanging head is attached to a stem 2, which slides in the support 1, and a roller 2′ carried by the stem engages a cam 4, which will reciprocate the flanging head into and out of the can body or other article being flanged.

The flanging head consists of a die 5, which is threaded at 6 on to a sleeve 7 that fits within a recess 8 formed in the stem 2. A spring 9 is interposed between the end of the sleeve and the end of the recess, and normally presses the sleeve 7 and the die 5 carried thereby outwardly. A limiting screw 10 extends through the sleeve 7, and is threaded into the stem 2. Said screw has an enlarged head for limiting the outward movement of the sleeve 7, under the influence of the spring 9. Said sleeve is also provided with a shoulder 11, which engages the end of the stem when the die is forced inwardly, and thus limits the inward movement of the die.

A cap 12 is threaded on to the end of the stem 2, and has a seat formed in its outer face to receive a limiting ring 13, which cooperates with the die 5. A collar 14 is threaded on to the cap 12, and has an inwardly extending flange which engages a rib on the outer face of the ring 13 and locks the same on its seat on the cap 12. The ring 13 is preferably formed of hardened steel, and is shaped so that the die 5 slides back and forth in the ring.

In the operation of my device, the can body C is placed on a rest or support 15, and the flanging head is moved into the can body. The die first engages the can body. The spring 9 will yield, allowing the die to move inwardly, and the edge of the can body is gradually expanded or turned outwardly into a flange. The shoulder 11 on the sleeve 7 engages the end of the stem, and the die is now positively forced into the can body. The edge of the can as it is turned will come into contact with the limiting ring 13, which assists in forming the flange. The raw edge of the metal is brought into wearing contact with the ring 13, which is of hardened steel. If this ring wears, it may be readily removed and quickly reversed and again attached to the flanging head, which will bring a different wearing surface into contact with the edge of the can. Then again, the ring may be quickly replaced by another one, when desired.

It will be seen, therefore, that I have provided a flanging head in which the first action of the die is yielding, and the later action is positive. I have also provided a flanging head wherein the wearing surface may be made of hardened steel which cannot only be quickly reversed so as to bring a different surface into contact with the can body, but which can be readily replaced

without destroying the entire flanging head. Then again by making the die yielding as soon as the flange is turned and the flanging head is moved away from the can body, the die will temporarily remain in the can body through the force of the spring acting on the die, and thus cause the can body to be stripped from the flanging head.

In order to turn a flange which is substantially at right angles to the can body, I preferably perform two operations upon the can body. In Fig. 3 I have shown a flanging head 16, which will operate to turn a preliminary flange 17 on the can body, as clearly shown in Fig. 5. In Fig. 4 I have shown a flanging head 18, in which the die is cut away so as to receive the can body with a preliminary flange, and turn the same into a finished flange 19, as clearly shown in Fig. 6.

I preferably use these flanging heads in different machines and feed the can bodies first to one machine and then to the other. This gradual turning of the flange allows the metal to flow, and prevents the opening of the side seam or the splitting of the metal.

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

1. A flanging head including in combination, a stem, a cap carried thereby, a limiting ring of hardened steel seated on said cap, a collar for engaging said ring for holding the same on its seat, a die located within said limiting ring, and movable relative thereto, a spring for moving the same in one direction, and a shoulder for limiting the movement of the die in the other direction.

2. A flanging head including in combination a stem, a cap carried thereby, a limiting ring of hardened steel seated on said cap, a collar for holding said ring on its seat, a die located within said ring and movable relative thereto, a sleeve connected to said die and engaging a recess formed in said stem, a limiting bolt passing through said sleeve for limiting the outward movement of said die, a spring encircling said bolt for forcing the die outwardly, and a shoulder formed on said sleeve for limiting the inward movement of said die.

3. A flanging head including in combination, a stem, a cap carried thereby, a limiting ring mounted on said cap, means for detachably holding said ring on said cap, a die located centrally of said limiting ring, and means for yieldingly supporting said die, whereby the same may be moved relative to said limiting ring.

4. A flanging head including in combination, a stem, a cap carried thereby, a limiting ring seated on said cap, a collar for detachably securing said ring to said cap, a die mounted to reciprocate within said ring, means for yieldingly supporting said die, means for limiting the outward movement of said die, and means for limiting the inward movement of said die.

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

JESSE E. ABRAMS.

Witnesses:
T. L. TALIAFERRO,
GEO. H. HALLAS.