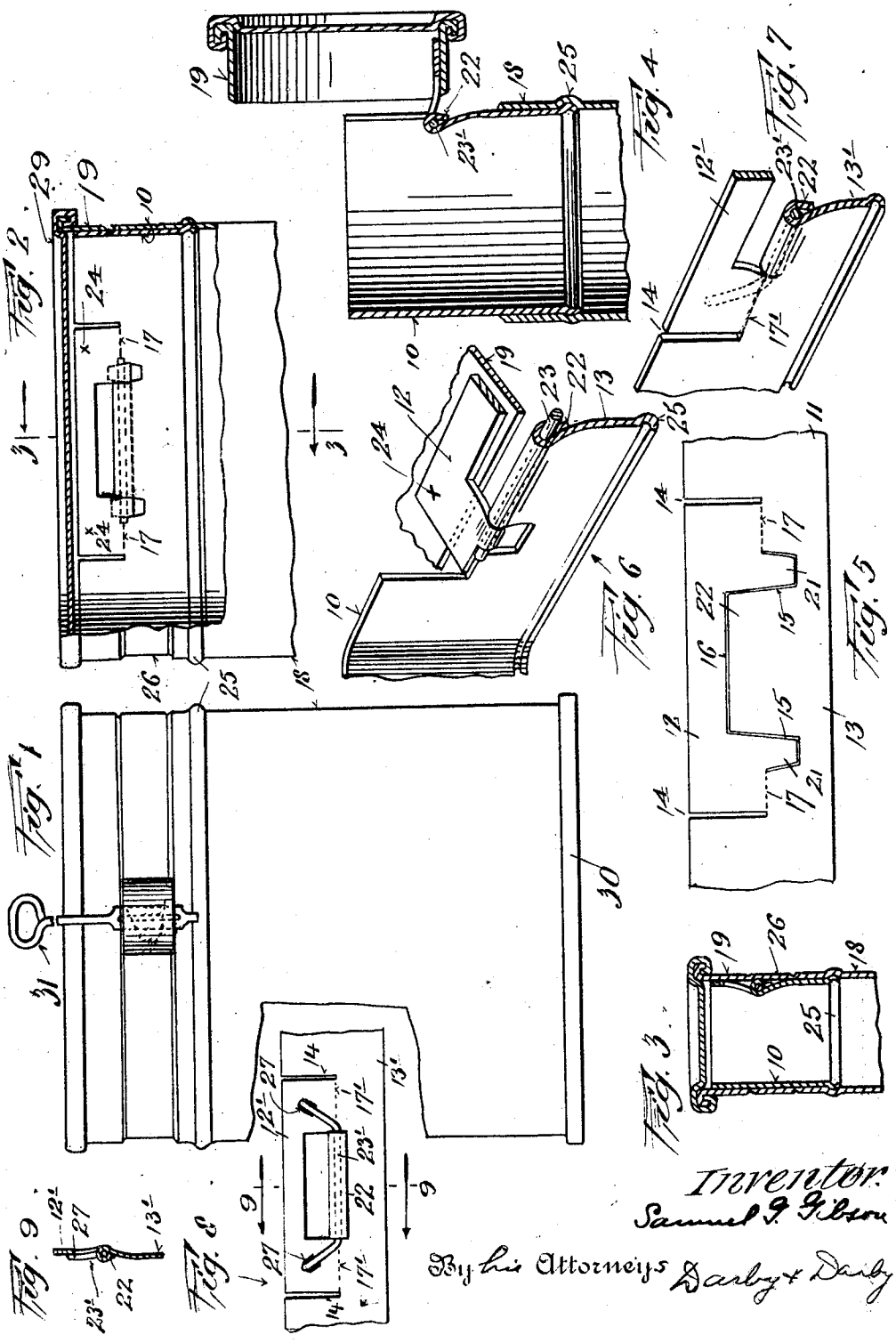
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HINGE FOR CANS AND METHOD OF FORMING SAID HINGES

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## HINGE FOR CANS AND METHOD OF FORMING SAID HINGES.

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This invention relates generally to hinge elements which form a part of a sealed container and are capable of being converted into hinges for swingingly uniting the cover to the container body when the container is opened.

More specifically the invention relates to a mode of providing hinge elements to vacuum cans and so constructing said hinge elements as to be capable of being assembled as a unitary structure in forming the can and thereafter by opening the sealed can causing said hinge elements to be severed and become the swinging wings of a hinge which unites the can cover to the can body.

A further object includes the provision of a simple and inexpensive hinge element which is shaped, cut or stamped so as to be assembled as a unit in the can body for the purpose above stated. I provide this hinge-forming element with the pivot rod and score or weaken the axial hinge line sufficiently to break and form the hinge wings when the sealed can is opened.

Other objects will appear hereinafter, and I attain these objects by the construction illustrated in the accompanying drawing in which

Figure 1 is an elevation of a can supplied with a hinge element embodying the principles of my invention and showing a preferred mode of opening the can.

Fig. 2 is a view similar to Fig. 1 showing the hinge element exposed to show its condition before being converted into a hinge proper.

Fig. 3 is a view taken on the line 3—3 of Fig. 2.

Fig. 4 is a sectional view on line 3—3 of Fig. 2 with the cover opened and the hinge element formed into its hinge wings.

Fig. 5 is a plan view of a portion of the hinge-forming collar showing the hinge blank cut and scored for the later process steps in forming the unitary hinge element into the potential hinge-forming construction as the same is inserted into the can body when the can is formed.

Fig. 6 is a view in perspective of a portion of the hinge collar showing the hinge complete and as it appears after the final step has been performed by severing the hinge element along the scored area in opening the cover.

Fig. 7 is a view in perspective of a part of the hinge collar showing a slightly different construction, and with the scored or weakened area still unsevered.

Fig. 8 is a plan view of the form shown in Fig. 7.

Fig. 9 is a sectional view taken on the line 9—9 of Fig. 8.

Similar numerals refer to like parts throughout the several views.

It is among the prime purposes of my invention to simplify the construction and assembly of containers that are provided with hinge elements for thereby uniting the cover and can body after the seal is broken and the can opened. The invention is specifically applied herein to vacuum sealed containers, but obviously is not thereby limited.

In making my unitary and simple hinge construction I form the hinge collar 10 from a suitable blank 11 which I stamp or cut to provide the upper or cover hinge wing 12, and the lower or can body hinge wing 13. The cover hinge wing is limited by the lateral incisions 14, 14, the U-shaped incisions 15, 15 and 16 and the scored or weakened line 17, 17. A hinge collar blank thus provided is of proper length to fit into the can body 18 when assembled and may be of any suitable width to provide anchorage for the can cover 19 and the can body 18 as will be stated more fully below.

The next step in preparing the hinge blank includes forming the hinge pivot members and supplying the hinge pivot. This may be accomplished in any one of numerous ways, as by bending the flaps 21, 21, of the cover hinge wing up along a line uniting the score lines 17, 17, and at the same time also bending down the body hinge wing flap 22 along the same line which unites 17, 17, and then folding these members over the hinge pivot 23. The collar blank is then ready to be assembled within the can body, and when so assembled the cover hinge flap is spot welded to the cover

at one or more places as at 24, 24, and the lower edge of the collar is either spot welded or provided with a holding bead 25, or both. The collar will then assume the position and appearance illustrated by Figs. 2 and 3 with the scored line 17, 17, unbroken and the scored can area 26 intact.

From an inspection of Figs. 7 and 8 it is apparent that the same mode of procedure just described is followed, excepting that no U-shaped incisions 15, 15, below the line uniting score lines 17 are made, and scorings 17, 17, are extended to the can body hinge wing 13. These scorings are designated as 17′, 17′, in Figs. 7 and 8. The first hinge wire 23′, instead of being straight as in the form of Figs. 2 and 6, for example, is bent rather sharply immediately outside of the lower wing flap 22 of can body hinge wing 13′. The bent ends of 23′ are fastened or attached to the cover wing flap 12′ in any suitable manner at 27, 27, as indicated in Fig. 8.

The hinge collar of either form described above as illustrative of my mode of procedure in forming the unitary hinge structure, is now ready for being assembled and properly fastened in the can body. This may be accomplished in any desired manner as by spot welding or otherwise, as stated above. The cover end 29 of the can is applied and the can is usually filled from the opposite or bottom end 30. The can is now sealed in vacuuo in the usual manner.

When it is desired to open the can the seal is broken by removing the scored area 26 by a suitable key 31, or otherwise. The cover 19 is thereby formed. This is now bent backwards to break the weakened hinge region along the score lines 17, 17, or 17′, 17′, depending upon the type of hinge collar adopted. The scored lines will break readily by bending, and the last step of forming the hinge is then completed and the can is thus supplied with a hinge cover formed thereto.

While I have described specific steps of operation as applied to specific structures for producing a defined and highly desired result, it is evident to those versed in the art that these steps may be carried out in other ways and that varied forms of unitary hinge structure falling wholly within the spirit and scope of my invention, as defined by the appended claims, will present themselves. What I claim, therefore, as new and useful, of my own invention, and desire to secure by Letters Patent is:

1. The method of forming unitary hinge structures for sealed cans, which comprises forming a hinge member with unsevered flaps and inserting the same in the can body, then uniting said hinge member to the can body adjacent a score line whereby, when the can body is severed along said score line the hinged member will unite the severed parts.

2. The method of forming hinge structures for vacuum sealing cans which comprises providing a blank with hinge members to form the hinge wings held in contact by a weakened portion between said wings, then fastening the hinge wings to separable structures, separating said structures and breaking the weakened portion of the hinge wings to form a hinge for uniting the separated structures.

3. The method of forming unitary hinge structures for containers, which comprises forming hinge wings united by a breakable region, then supplying said hinge wings with a pivot member and uniting the wings to the inner walls of a container supplied with a scored area to form a can body and a can cap, then fastening one hinge wing to the can cap and the other to the can body ready for being formed into a complete hinge when the can is opened by removal of the scored area.

4. As an article of manufacture, for uniting separable parts of a vacuum can to form a hinged cover, a unitary hinge structure comprising hinge wings rigidly united in blank form for quick assembly, said structure being provided with means whereby the united hinge wings are severed and a hinge formed when the structure is placed in use.

5. In a container, a cap area and a body area provided with a scored area therebetween, a hinge member uniting said cap area to said body area by rigidly united hinge wing members, said wing members becoming severed to function as a hinge for said cap when the scored area is removed and the cap member is opened.

6. A hinge member for attaching to the walls of a container for vacuum sealing and comprising a hinge forming blank provided with cuts spaced apart and joined by score lines to form separate wing flaps when the container is opened.

7. A can having a body provided with score lines, setting off an encircling tearing strip, a collar arranged within the body and extending up to and above the lower score line, said collar having a portion cut to weaken its connection thereto, a pintle member engaged in the body of said collar and embraced by a part integral with said portion, means fastening said portion of the collar to the can body above said score line, whereby to permit opening and closing movements of the top of the container after the removal of the strip, to sever the connection between said portion of the collar and the body of the collar, to form a hinged connection.

8. A container having a body area and a cap area and provided with a tearing strip area therebetween set off by score lines, and a hinge member connecting said cap area to

said body area and extending across said scored area, said member being easily broken into two wing members to hingedly connect the cap and body area after the scored area has been removed, and a bridging flange permanently inserted in one of said areas of the can and extending across said scored area and separably engaged by the other of said can areas when the tearing strip has been removed and the cover is manipulated.

In testimony whereof I have hereunto set my hand on this 2nd day of April A. D. 1924.

SAMUEL G. GIBSON.