Sept. 24, 1963 R. L. STOCKER 3,104,415

CONTINUOUS HINGE

Filed Aug. 23, 1961

FIG. 1

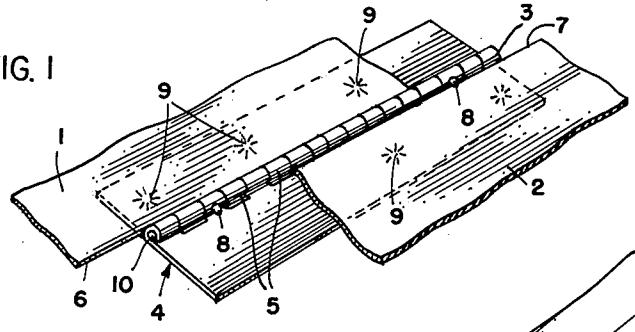


FIG. 2

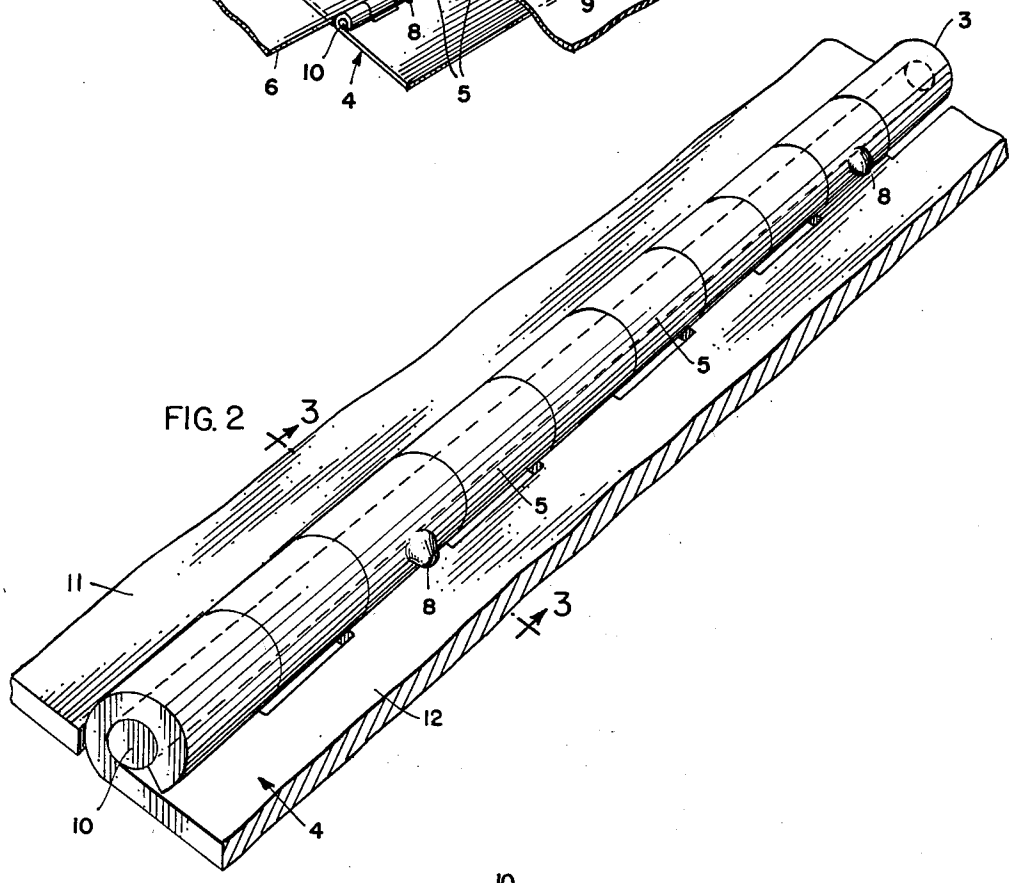
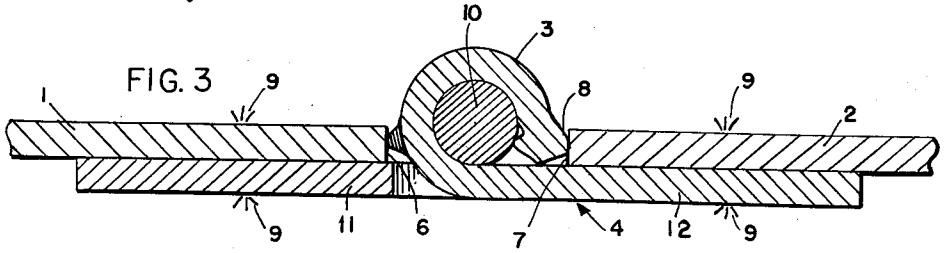


FIG. 3



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United States Patent Office 3,104,415 Patented Sept. 24, 1963

3,104,415

CONTINUOUS HINGE

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Filed Aug. 23, 1961, Ser. No. 133,373
1 Claim. (Cl. 16—137)

The present invention relates to an improved continuous hinge. More particularly, the subject invention is directed to an improvement in the construction of the barrel of a continuous hinge.

In the manufacture of hinged metal boxes or the like, it is customary to place the wings of the hinge on the inner side of the top and body or door and body of the container. The barrel of the hinge is between the two sections of the container and is visible when the hinged top or door is closed. Under such circumstances it is important to protect the appearance of the barrel.

In one method of producing continuous hinges, the prongs of the hinge are curled to provide a barrel that is substantially cylindrical. This type of hinge construction is superior to other methods in which the barrel is formed around the pin. In the latter case, the barrel is slightly "flattened" and the prongs extend beyond the adjacent curved joints or knuckles of the barrel.

Although the curled type hinge has several advantages over hinges having flattened barrels, its cylindrical barrel causes several annoying problems. In securing the hinge to the metal container it is customary to use the joints or knuckles of the barrel as guide means for the spot welding operation. This system worked out particularly well in connection with the formed barrel where the extended prongs were used as a guide means. Where the barrel of the hinge is curled and substantially cylindrical, however, it was found that paint which is applied to the moving knuckles of the hinge is scraped off due to friction caused by contact between the knuckles and the butted edges of the container and body. After the hinged product has been used for a short period of time, the appearance of the barrel is marred due to the paint loss on the joints. Also, the friction causes binding and prevents free hinging action.

The principal object of the present invention is to provide an improved continuous hinge having a substantially cylindrical barrel.

Another object of the invention is to provide a hinge which includes means for rapidly aligning the hinge and container parts for welding purposes.

Still another object of the invention is to provide a means for preventing paint loss from the joints of continuous hinges having substantially cylindrical barrels.

Other objects of the invention will become apparent to those skilled in the art from the following detailed description.

In general, the present invention comprises the discovery that it is possible to overcome the problems outlined above by stamping raised projections in the barrel of the hinge at given intervals. More particularly, it has been found that a curled hinge barrel of substantially cylindrical construction which includes rounded projections can be used in conjunction with rapid welding techniques

without incurring the disadvantage of unsightly paint removal and friction binding.

The invention can best be understood by referring to the attached drawing in which:

FIGURE 1 is a perspective view showing a continuous hinge and portions of the top and body of a box or other metal product which have been abutted against the hinge for welding purposes;

FIGURE 2 is an enlarged perspective view of a continuous hinge of the subject invention; and

FIGURE 3 is a sectional view taken along line 3—3 of FIGURE 2.

In FIG. 1, fragments of a top or cover **1** and body **2** of a metal box are shown abutted against barrel **3** of a continuous hinge **4**. The joints or knuckles **5** of barrel **3** are tucked in to provide a substantially cylindrical curled barrel. The edges **6** and **7** of the top and body of the box are placed in contact with raised projections **8** which are formed on certain joints of the barrel. After the components of the box and the hinge have been aligned in this manner they are welded together at points **9**. As is evident from FIG. 1 as well as FIG. 2, the raised projections prevent joints or knuckles **5** of the hinge from rubbing against the edges of the top and body as the hinge is rotated about pin **10**.

FIG. 2 is an enlarged perspective view of a continuous hinge of the subject invention. In this type of hinge the wings **11** and **12** rotate about pin **10**. Raised projections **8** are embossed in the barrel at suitable intervals. The number of projections can vary according to the product involved. These projections make it possible to align the top and body of a container by means of the hinge while at the same time preventing contact from being established between adjacent knuckles or joints and the edges of the container.

FIG. 3 is a sectional view taken along line 3—3 of FIG. 2. In this view projections **8** are shown on either side of joint or knuckle **5**. It is convenient to place the oppositely disposed projections on adjacent joints or knuckles. If desired, however, they can be embossed or stamped into joints which are several inches apart. The edges of top **1** and body **2** are shown abutted against projections **8**. The barrel **3** of the hinge is substantially cylindrical and rotates about pin **10**. The wings **11** and **12** of the hinge are welded to the top and body of the container at weld points **9**. As can be seen from this view, raised projections **8** lie immediately above the inner surface or barrel surface of the wings of the hinge and are adjacent to or in contact with said surface of said wings.

Incorporating the raised projections in the hinge barrel makes it possible to align the hinge and container parts rapidly even though the barrel is substantially cylindrical. The modified hinge can be formed inexpensively by making slight adjustments in available dies. By following this invention one can overcome the problem of paint loss and binding without slowing down the assembling operation or incurring any other substantial increase in costs.

The size of the projections and the frequency in which they appear in the barrel can vary widely according to individual preferences. In general, it is sufficient to have one projection every one-half to 6 inches on a given side of the hinge barrel. In the preferred embodiment, the projections are placed from 1 to 2 inches apart in the

barrel. The lateral height of the projections can also vary widely, for example, from 0.001 of an inch up to .062 of an inch, and preferably from 0.01 to 0.031 of an inch. Correspondingly, the width of the projections can be chosen according to individual preference. Under most circumstances the width will vary from about .001 to .125 of an inch or more if desired.

Obviously many modifications and variations of the invention as hereinbefore set forth may be made without departing from the spirit and scope thereof, and therefore only such limitations should be imposed as are indicated in the appended claim.

I claim:

An improved continuous hinge which comprises in combination paired wings terminating in prongs, said prongs being curled and the ends of said prongs being tucked to form substantially cylindrical joints, said joints being in meshed relationship to each other, said meshed joints forming a substantially cylindrical barrel, a pin extending through said barrel, and raised projections extending laterally from certain of said joints, said projections being located on said joints near the terminal ends of said prongs, said projections being adjacent to the inner surfaces of the wings of said hinge.

References Cited in the file of this patent

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