Dec. 7, 1937. J. BRENZINGER 2,101,530

SHEET MATERIAL CONTAINER AND ART OF MAKING SAME

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Fig. 1

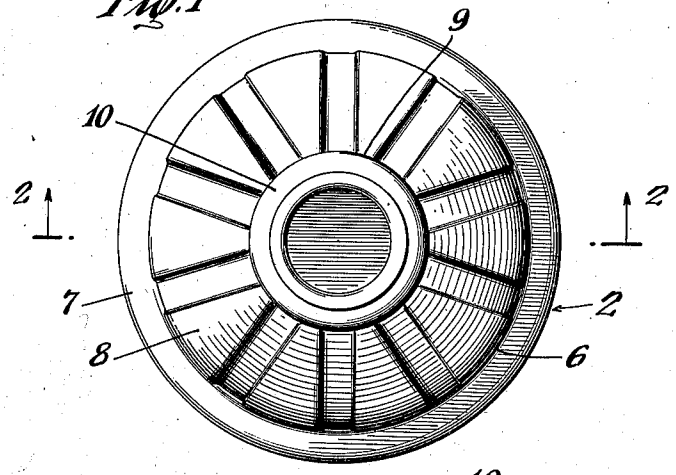


Fig. 3

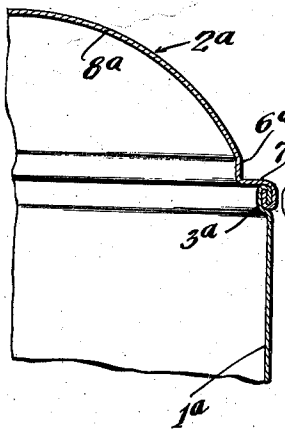
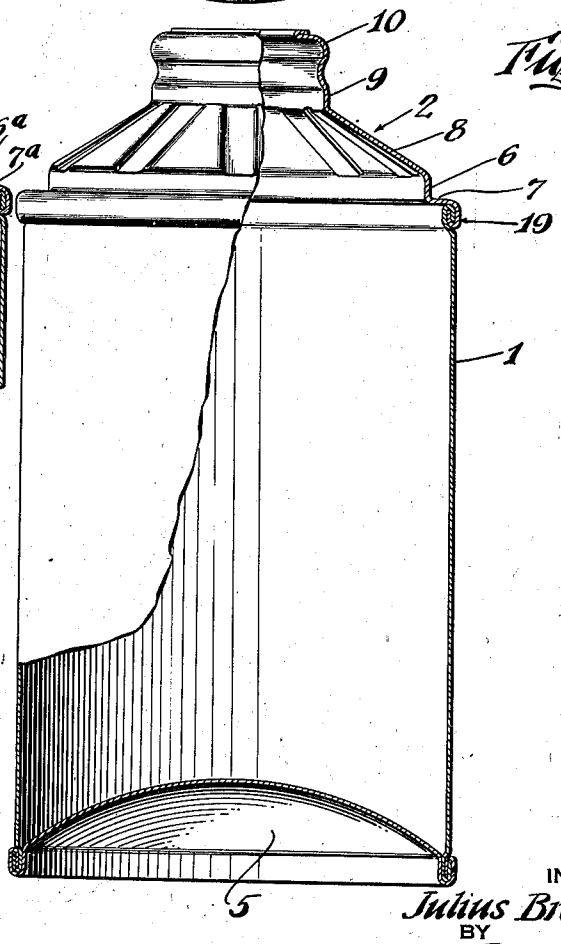


Fig. 2



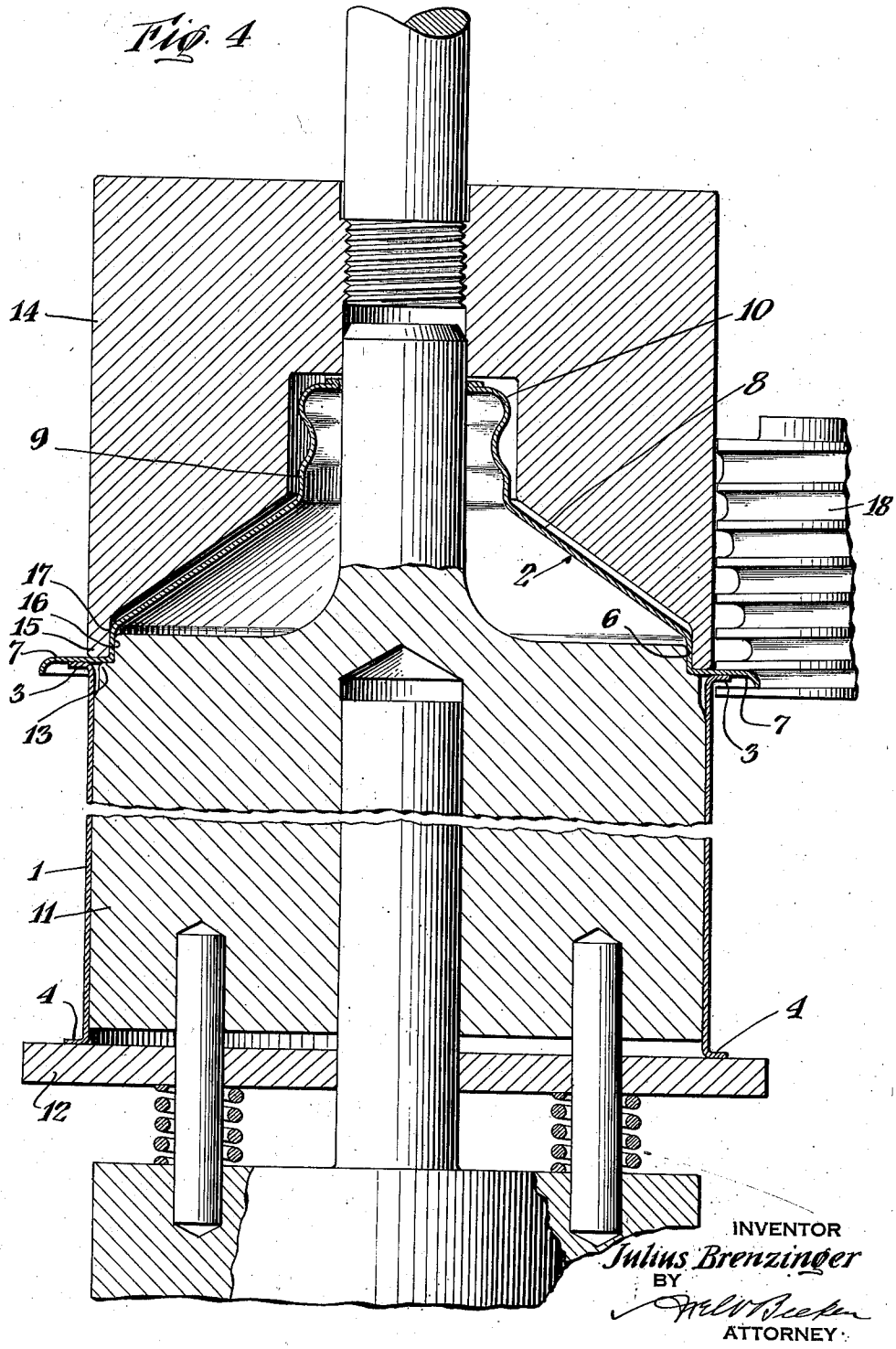
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Fig. 4



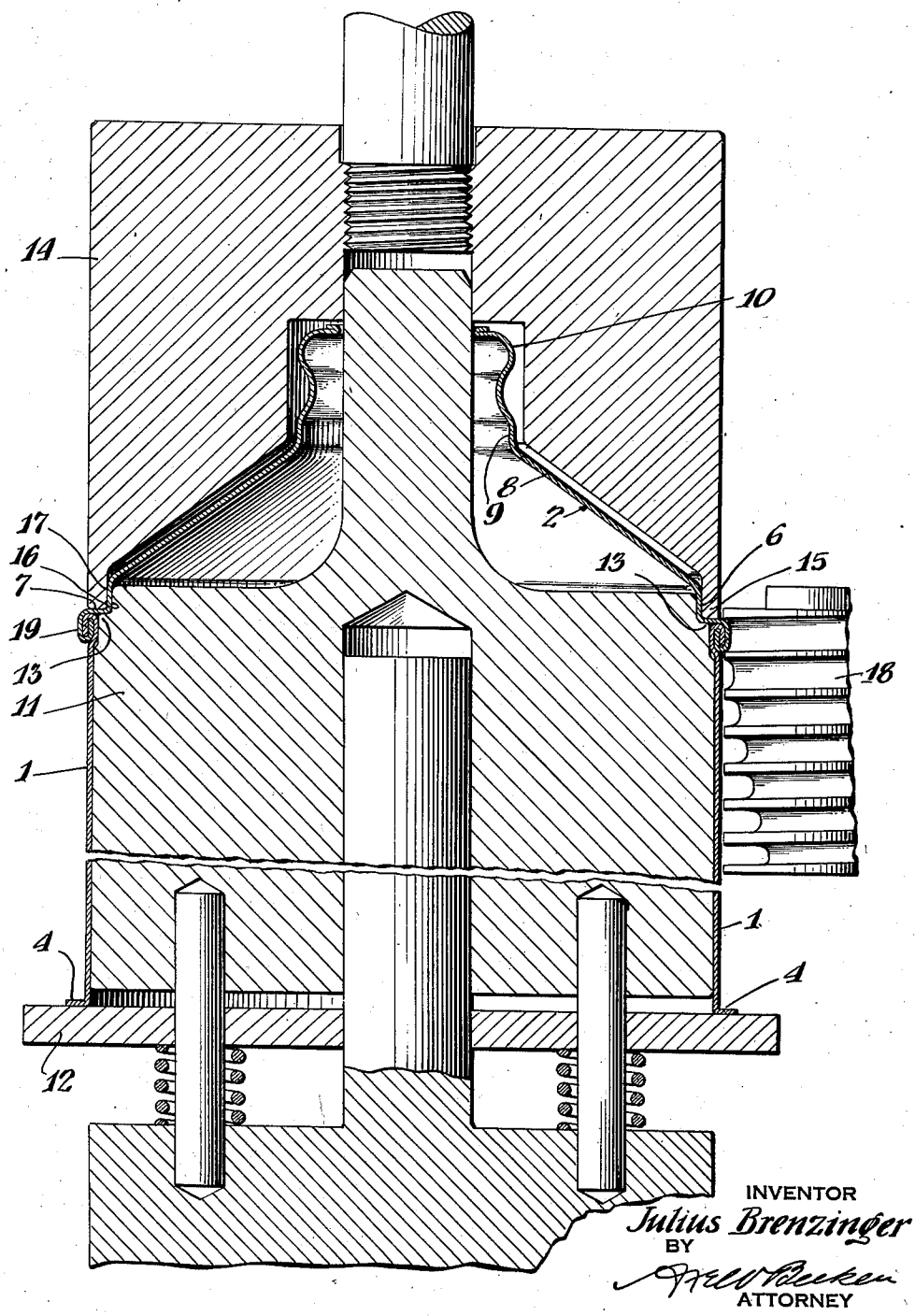
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Fig. 5



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Patented Dec. 7, 1937 2,101,530

UNITED STATES PATENT OFFICE

2,101,530

SHEET-MATERIAL CONTAINER AND ART OF MAKING SAME

Julius Brenzinger, Fairfield, Conn.

Application May 5, 1936, Serial No. 77,938

3 Claims. (Cl. 113—121)

This invention relates to a sheet-material container, and to the art of making the same.

It has now become the custom to sell beer in tin cans instead of in bottles as heretofore, and this has created a new set of problems. It is, of course, possible to fill the ordinary tin can with beer and to open such can with the ordinary can opener, but such procedure does not add to the esthetic enjoyment of a meal as the appearance of the open tin can is not attractive and the can opener does not harmonize with the flat silver with which the table is set. It would obviously be desirable to have a tin can that is provided with the usual crown-cork so extensively used heretofore in connection with bottles containing beverages or other liquids. Also, bottle openers for use in connection with crown-corks are obtainable in silver mountings that may be placed upon the table without marring the appearance of the latter. It would appear to be easy enough to provide a tin can with a dome-shaped top having a neck designed to receive a crown-cork, but there are practical difficulties in the way which will be understood from the following: After the can is filled with beer it is subjected to a pasteurizing process that raises the pressure within the can to about one hundred pounds to the square inch. The joint that unites the top and the can body must therefore be exceedingly strong to withstand such pressure, and for this reason it is not feasible to merely solder the top to the can body. Furthermore, the soldering action heats a portion of the can body and top that extends considerably beyond the point where the soldering occurs and thus renders it impossible to decorate or print the can body over a considerable area adjacent the soldered portion. It is necessary, therefore, to seam the top and body together not only for practical considerations but also from the descriptive point of view. But this is only one of the difficulties because, in order to force the crown-cork over the lip of the neck of the top, a pressure of five or six hundred pounds is necessary and this has a tendency to collapse the top or to open the seam between the top and body.

The main object and feature of the invention is to provide a method and means whereby the difficulties above recited will be overcome, to the end that a joint may be made between the top and body, sufficiently strong to withstand the stresses to which it is incident, which shall at the same time be presentable from a decorative point of view, and in the manufacture of which an excessive amount of tin-plate need not be used. It will be understood, however, that while the problems recited are in connection with beer it is not intended to limit the use of such container to that beverage as the invention is susceptible of being employed in connection with containers used for a wide variety of purposes.

In the accompanying drawings the invention is disclosed in a now preferred form, in which

Fig. 1 is a top plan view of a container embodying the invention;

Fig. 2 is a view, partly in side elevation and partly in section of the container shown in Fig. 1;

Fig. 3 is a fragmentary view similar to Fig. 2 showing a modified form of the invention;

Fig. 4 is a sectional view of a workholder for clamping the work at the beginning of the seaming operation, and showing also a preferred form of seaming tool associated therewith; and

Fig. 5 is a view similar to Fig 4 but with the parts shown at the end of the seaming operation.

1 is a can body of sheet material and 2 indicates the top. The body is provided at one end with an outwardly extending flange 3. The other end of the body has a similar flange 4 but it is unnecessary for present purposes to describe the subsequent seaming operation that unites bottom 5 to the body. The top is provided at its lower end with an upright or dependent stabilizing rim 6 of smaller diameter than that of the inside of the body, and from this stabilizing rim extends an outwardly projecting substantially horizontal flange 7. The top further has a dome-shaped upper portion 8 that slopes upwardly and inwardly from said stabilizing rim and terminates in a neck portion 9 for the reception of a cap. In this instance the neck is provided with a lip 10 for the reception of a crown-cork.

11 indicates the mandrel of a workholder for supporting body 1, lower flange 4 resting on a spring-seated plate 12 of said mandrel to limit endwise movement of the body. Said mandrel is provided with a ledge 13 to engage, within the boundary of the body and substantially at the level of the flange of the body, one surface of flange 7 of the top. 14 indicates a chuck to cooperate with the mandrel and having a clamping portion 15 that engages the other surface of flange 7 of the top. In addition, the mandrel and chuck are provided with complementary walls 16 and 17 that snugly engage and sustain stabilizing rim 6 of the top. The mandrel and chuck are movable lengthwise one with respect to the other and, while apart, body 1 is slipped over the mandrel and top 2 is placed in position on the mandrel and on flange 3 of the body. The mandrel

and the chuck are then brought together thereby firmly clamping the body and top. One or more seaming tools are now brought into play and by preference a rotating and lengthwise movable helical seaming tool 18 is utilized to perform the seaming operation that unites flanges 3 and 7 into a seam 19. It is unnecessary to describe the seaming tool in detail except to say that the construction shown in United States Letters Patent Nos. 1,390,490 and 1,612,564 may be utilized. The resulting container is characterized by a top having at its lower end a substantially vertical stabilizing rim 6 of a diameter smaller than the inside diameter of the body and located in a plane above the body, a horizontally extending flange 7 extending from said rim and being seamed to the corresponding flange 3 of the body. It will be noted that flange 7 does not form a gutter as it is not depressed below the upper end of the body. If it were, such gutter would also bring flange 6 of the top below the upper end of the body, and any downward pressure exerted in applying the crown-cork to the neck of the top would have a tendency to open seam 19. This objectionable feature is avoided by having stabilizing rim 6 above the upper end of the body. Also surface 7, instead of being a gutter that would retain liquids and dust, is a flat surface that tends to shed liquids and particles of matter.

In Fig. 3 is shown a modification in which body 1*a* is provided with a flange 3*a* similar to that described above. Top 2*a* is likewise provided with a stabilizing rim 6*a* and a flange 7*a* as before, but the dome-shaped portion 8*a* is curved instead of being straight.

The workholder disclosed in this application is not claimed herein but forms the subject matter of a separate application, Ser. No. 143,901, filed May 21, 1937.

I claim:

1. The method of uniting the body and top of a container which consists in: providing the body at one of its ends with an outwardly extending flange; providing the top at one end with a dependent rim of smaller diameter than that of said body and with an outwardly extending flange that projects from the lower part of said rim and is of a diameter greater than that of the outwardly extending flange of the body; supporting the body and limiting its endwise movement; positioning the top on the end of the body with the outwardly extending flanges of the body and top in contact; clamping the inner and outer surfaces of the flange of the top in a plane within the outer circumference of the body; and seaming the flanges of the body and top together.

2. The method of uniting the body and top of a container which consists in: providing the body at one of its ends with an outwardly extending flange; providing the top at one end with a dependent rim of smaller diameter than that of said body and with an outwardly extending flange that projects from the lower part of said rim and is of a diameter greater than that of the outwardly extending flange of the body; supporting the body and limiting its endwise movement; positioning the top on the end of the body with the outwardly extending flanges of the body and top in contact; clamping the inner and outer surfaces of the flange of the top in a plane within the outer circumference of the body and simultaneously sustaining the inner and outer faces of the rim; and seaming the flanges of the body and top together.

3. In a container, a body having a flange, a top having at its lower end a substantially vertical stabilizing rim of a diameter smaller than the inside diameter of the body and located in a plane entirely above the body, said top having also a dome-shaped upper portion sloping inwardly and upwardly from said rim and an outwardly extending substantially horizontal flange above the body projecting from the lower part of the rim and outwardly beyond the outer diameter of the body and having its outer peripheral portion seamed to the flange of the body.

JULIUS BRENZINGER.