

(No Model.)

G. A. WAEBER.
CONSTRUCTING AND OPENING HERMETICALLY SEALING SHEET
METAL VESSELS.

No. 496,175.

Patented Apr. 25, 1893.

FIG. 1

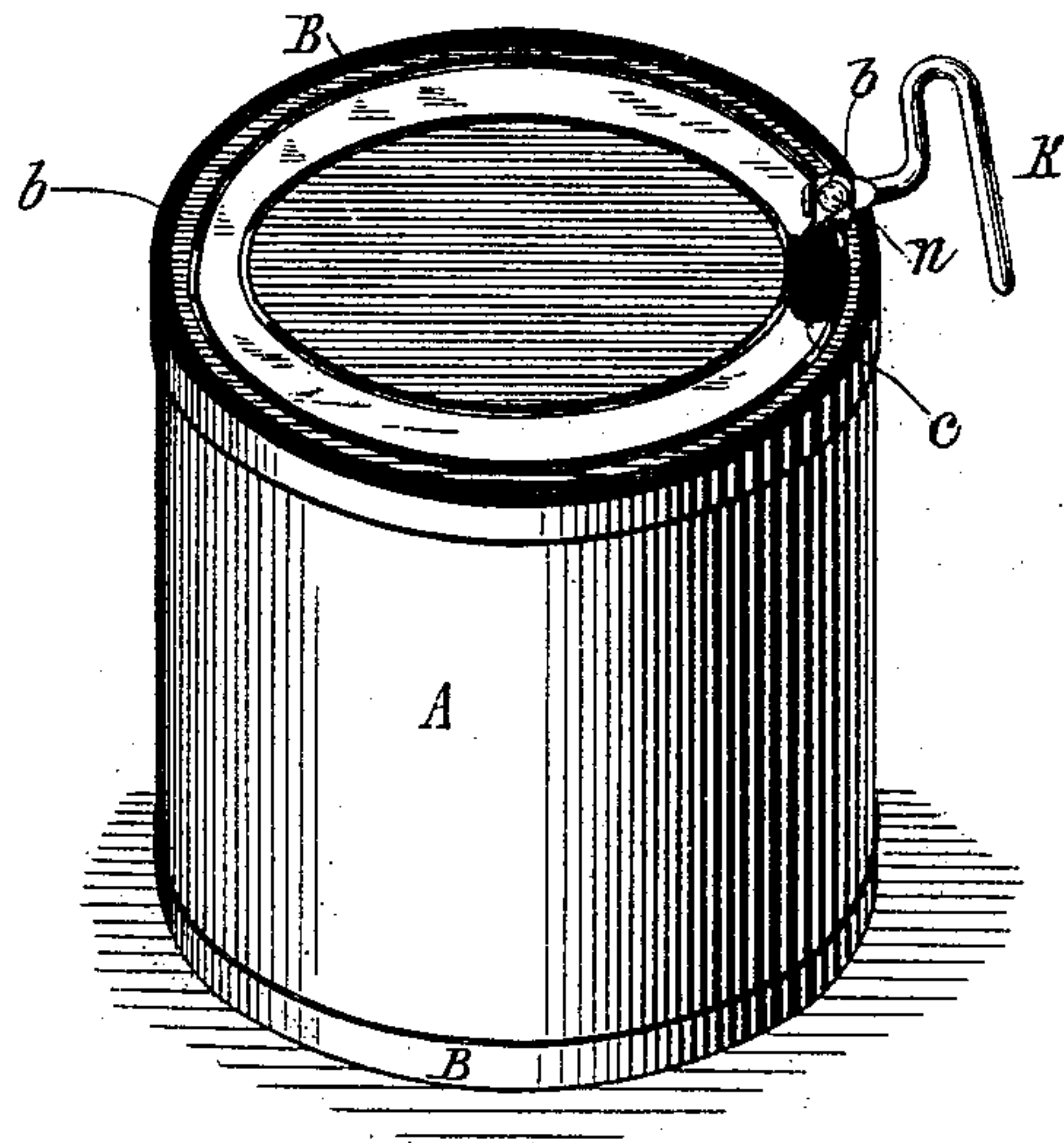
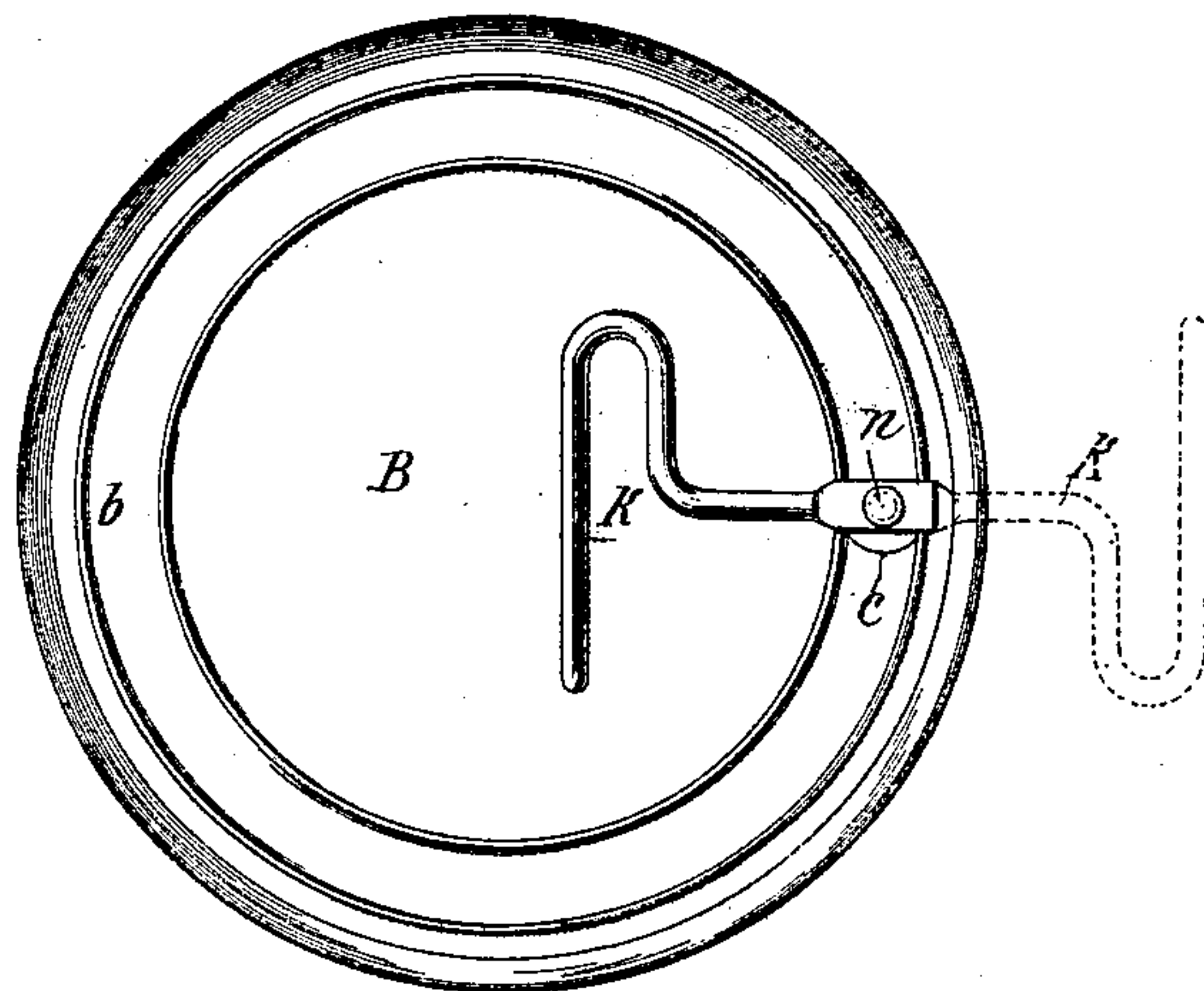


FIG. 2



WITNESSES:

G. M. Copenhagen.
J. B. W. Naylor

INVENTOR

Gustavus A. Waeber,

BY

J. D. Briggs,
ATTORNEY.

UNITED STATES PATENT OFFICE.

GUSTAVUS A. WAEBER, OF NEW YORK, N. Y.

CONSTRUCTING AND OPENING HERMETICALLY SEALING SHEET-METAL VESSELS.

SPECIFICATION forming part of Letters Patent No. 496,175, dated April 25, 1893.

Application filed April 9, 1892. Serial No. 428,478. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVUS A. WAEBER, a citizen of the United States, residing in the city of New York, in the county and State of New York, have invented an Improvement in Modes of Constructing and Opening Hermetically Sealing Sheet-Metal Vessels; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the drawings which accompany and form a part of this specification.

This invention consists of a new and simple method of forming the strip-section of that class of sheet metal vessels which are opened by tearing out a narrow band or zone of their material, and in so combining with such strip-section the "key" or other device which is used to effect the tearing operation that the "tongue" which has heretofore been in all cases absolutely necessary in receptacles of this class may be entirely dispensed with, thus doing away with a very large part of the cost of manufacturing such vessels, while at the same time the opening can be performed in an easy and effectual manner.

To enable others to put my invention into use I will proceed to describe it in detail.

In the drawings, Figure 1 is an elevation in perspective of a sheet metal can containing my improvement; and Fig. 2 is a detail view showing one head of the can and representing the strip-section and key on a somewhat enlarged scale.

The improvement is here shown and described as applied to the head or cover of the can, and in practice this will usually be found most convenient. But it may also be placed upon the wall of the body, if desired, and in that position will be found to operate satisfactorily.

A, Fig. 1, is the body of a cylindrical can made of sheet tin in the ordinary manner.

B, B, are the covers or heads, and these may either be secured in place by being caused to encircle the periphery of the can body, as represented in the drawings, or they may be soldered inside of the ends of such body, in the manner in which sardine boxes and many other metallic vessels are frequently constructed, or they may be fastened in any other desired manner.

b b is the strip-section, and as here shown I have preferred to form it as represented in the drawings by a double bead and double incision in accordance with the Letters Patent No. 401,913, granted to me April 23, 1889, or by a single bead having an incision partly through the metal in, upon, or close to such bead, in accordance with my application for Letters Patent for improvement in sheet metal cans filed March 19, 1891. It is not essential, however, that these particular systems should be employed, as any other suitable method may be adopted, if desired. But by my improvement, whatever mode of making the strip-section is selected, I am enabled to do away entirely with every form of tongue, whether such tongue be made by prolonging the strip-section beyond the line of the vertical joint of the can-body walls or by soldering a supplemental piece to the section, or in any other manner. I provide a new method of operation, and as a substitute for using a tongue and key together, as has been customary, I rivet or by any suitable means firmly secure the inner end of a key, *k*, to the strip-section *b b* at any desired point in the length of the latter. The key may be constructed as shown in the drawings, or it may be made in any other appropriate manner, but the end of its shank which is fastened to the strip-section must of course be adapted to enable a firm attachment to be made to the section, and I prefer that this attachment shall be of such a nature as to admit of the key being turned so as to lie entirely or partially over the top of the can when the latter is unopened, and of being turned outward, as represented by the dotted lines in Fig. 2, so as to afford a firm hold or grip of it when it is desired to open the can. This, however, is not essential, but will always be found most convenient.

In order to enable the key to start the operation of tearing out the strip-section, I generally prefer to employ a transverse incision made partly through the metal adjacent to the point at which the key is attached to the section. This incision is shown at *c* in the figures. I prefer that its form should be the arc of a circle extending across the section, as shown, as I have found that when so made it best facilitates the starting of the tearing,

but any other suitable form may be given to it. The can being thus constructed, in order to open it nothing more is necessary than to turn the key *k* horizontally on its rivet *n* and outwardly in the direction of the dotted lines in Fig. 2 until its handle or outer end projects sufficiently over the edge of the can-head to afford a firm grip by the hand or other instrument used for the opening. The key is then twisted on its own axis in the usual manner, and as soon as this is done the strip-section will break transversely at the incision *c*, thus starting the tearing, and the residue of the section is then stripped out in the ordinary way.

It is not essential that the transverse incision *c* should be used in all cases. In its place, a sufficiently sharp bead may be provided extending across the strip-section in the same manner as the incision. Or, the metal of the strip-section around or near to the point where the key is secured to it may be weakened or made brittle in any suitable way so that it can be readily torn through by the initial action of the key. It is also not always necessary that when an incision is employed at *c*, it should be made only partly through the strip-section. In cans or vessels designed for holding paints, white lead, baking powder, tobacco, and many other articles which do not require to be kept absolutely air-tight, it will answer all purposes if the incision is cut entirely through the metal.

In the process of manufacture it is sometimes easier to make the incision extend entirely through the metal, even in vessels which are intended to be air-tight, for the reason that the cutters do not then require so nice an adjustment as when they are to cut only partly through the sheet material. But it is to be understood that if this course be adopted, the cut-through incision must afterward be touched lightly with solder on one or other of the sides of the strip-section so as to close it and prevent the entrance of air on that side. It is also proper to state that when the contents of the vessel require to be preserved from the entrance of air, it will generally be found best to solder lightly around the point of attachment of the key *k* to the strip-section. This need not interfere with the turning of the key, especially if the latter is secured by a rivet as shown in the drawings, be-

cause although the solder may prevent the rivet itself from rotating with the key, the latter will readily turn on the rivet, as already above described.

In the manufacture of sheet metal cans, the use of tongues which are cut out of the can-blanks very largely increases the cost of production, because the material which is cut away to form the tongues is of no value and must be thrown aside as waste. And although it has been proposed to cut the tongues from waste pieces and then solder them to one end of the strip-section, this method has not been found satisfactory in practice. But my present invention by enabling the tongues to be dispensed with, does away with the additional cost of the first mode of manufacture referred to, and at the same time obviates the disadvantages of making tongues of separate pieces. Moreover, my method as here described is applicable to the tops of glass jars for containing milk, canned fruit and other articles, and also to many other purposes which ordinary systems of strip-opening could not be desirably employed.

Having thus made known my improvements, what I claim, and desire to secure by Letters Patent, is—

1. A sheet metal or other vessel provided with a strip-section which at any desired point is weakened more or less transversely of its length, in combination with a suitable opening instrument firmly secured to it close to its weakened point, whereby the strip-section can readily be torn out and the employment of a tongue can be dispensed with, substantially as set forth.

2. In a sheet metal or other vessel, a strip-section formed of a narrow band of the material located between two parallel beads or between one bead and the edge of one end or head of the vessel and having a longitudinal incision partly through the metal in, upon, or close to such beads or bead, in combination with a suitable opening instrument firmly secured to the strip-section adjacent to a suitable weakened portion of the latter, substantially as and for the purposes described.

GUSTAVUS A. WAEBER.

Witnesses:

J. BAIER,

F. J. BIGLEY.