(No Model.) 2 Sheets—Sheet 1.

F. C. BUSCH.

MEANS FOR OPENING METAL RECEPTACLES.

No. 526,435. Patented Sept. 25, 1894.

FIG. 1.

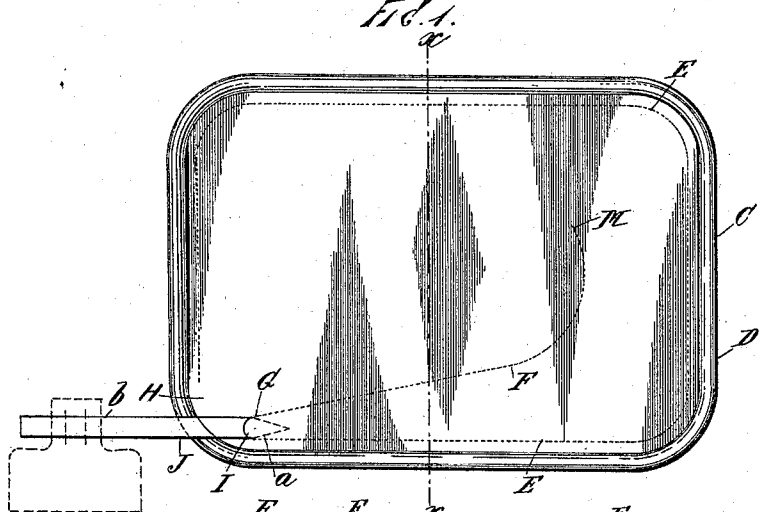


FIG. 2.

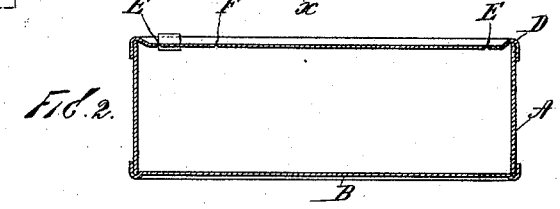


FIG. 3.

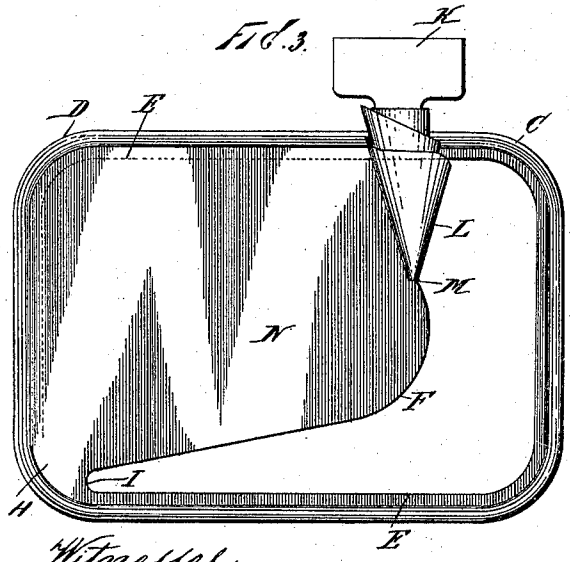
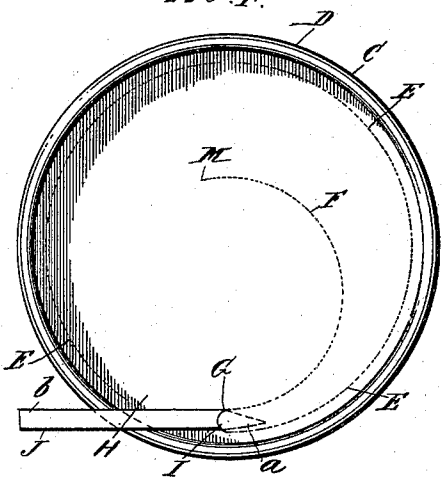


FIG. 4.



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(No Model.) 2 Sheets—Sheet 2.

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MEANS FOR OPENING METAL RECEPTACLES.

No. 526,435. Patented Sept. 25, 1894.

FIG. 5.

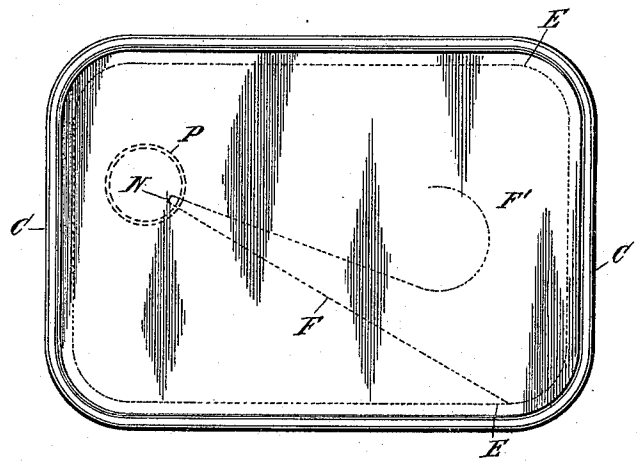
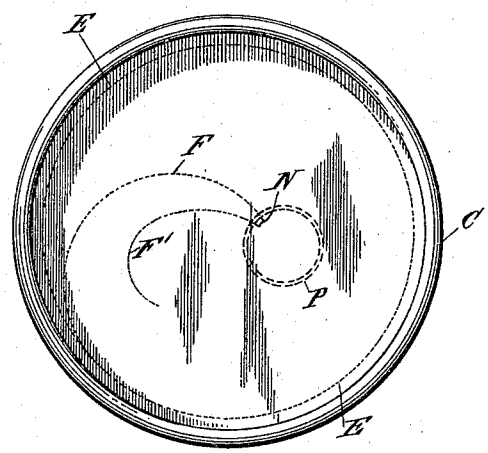


FIG. 6.



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UNITED STATES PATENT OFFICE.

FREDERIC C. BUSCH, OF NEW YORK, N. Y., ASSIGNOR TO GUSTAVUS A. WAEBER, OF SAME PLACE, AND FREDERIC REISET, OF KATONAH, NEW YORK.

MEANS FOR OPENING METAL RECEPTACLES.

SPECIFICATION forming part of Letters Patent No. 526,435, dated September 25, 1894.

Application filed June 8, 1894. Serial No. 513,859. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC C. BUSCH, a citizen of the United States, residing in New York city, in the county and State of New York, have invented certain new and useful Improvements in Means for Opening Metal Receptacles, of which the following is a specification.

My invention relates to a novel means or method of opening metal receptacles such as cans, boxes, and the like, usually constructed of tin, and designed to contain edibles of various kinds, as small fish, fruits, vegetables, &c., the cans being hermetically sealed in order to effectually preserve the contents, whatever they may be. There have been many and various contrivances and methods devised for the purpose of providing ready and effectual means or methods of opening such hermetically sealed receptacles, and in particular instances some of such methods and means are effectual in their way. I have, however, invented or discovered a method by which any such receptacle of whatever shape, whether rectangular, circular or other shape, may be readily, conveniently, easily and effectually opened, and too according to a predetermined plan; that is to say, the opening will be in predetermined lines, and in the accompanying drawings I have illustrated embodiments of my invention, in which—

Figure 1 is a top or plan view of a rectangular-shaped box with rounded corners, (or the cover thereof) as shown, such as are used for packing sardines. Fig. 2 is a sectional view of the box shown in Fig. 1 taken through line *x*—*x* of that figure. Fig. 3 is a view of the box or cover shown in Figs. 1 and 2 partially opened, according to my invention. Fig. 4 is a view of a round box or receptacle or the cover therefor. Fig. 5 is a view of a box or cover like that shown in Figs. 1, 2 and 3 illustrating a modification of my invention; and Fig. 6 is a view of a box or cover like that shown in Fig. 4 illustrating a modification of my invention as applied to round boxes or covers.

Referring first to Figs. 1 to 4 inclusive, it will be seen that the receptacle is made up of a body piece A and a bottom piece B secured to the body or side piece A, in the manner shown, (see Fig. 2) the edges of the bottom piece B being turned up against the side or body piece A, and secured thereto by solder or other cement. In like manner the cover C is secured to the top of the box or receptacle, its edges being turned down upon the side or body piece A and fastened thereto by solder or other suitable cement. The cover is constructed with the bead or raised portion D, as is usual in such boxes.

In order to open the receptacle, or in other words, to provide a way by which the receptacle may be opened, an opening line E is marked or cut on the cover C extending entirely around or substantially or nearly entirely around, and preferably close to the edge of the sides or outside edge or edges of the box, and in Figs. 1 to 4 inclusive, another opening line F is marked upon the surface of the cover commencing at any suitable or convenient point thereof, connecting therewith or close to the other opening line as shown at G in Figs. 1 and 3, and this opening line F may continue parallel with the opening line E for a slight distance or preferably gradually diverging from that point and running a desired distance as shown in Figs. 1 and 3, in which figures the opening line F diverges from the point G to a point past the middle of the box or receptacle and terminates at a point between the middle and the opposite side. These opening lines are marked upon the one side or the other of the cover by a cutting tool, creaser or punch, and in the process of opening the box in the manner hereinafter explained the opening will be in or follow the lines of the cut or creased portions, as shown in Fig. 3.

It is preferred to leave a portion as H of the cover unmarked or uncut, so that when the other portion of the cover is torn away, this portion H will remain and act as a hinge upon which the cover can be lifted or turned up and down in covering and uncovering the contents again, if desired.

The space between the opening lines F and E at their starting points is wholly cut through at I, and a tongue or key J is passed

through that opening fitting accurately therein, and in the drawings this tongue or key or opening device consists of a piece or strip of tin or similar sheet metal, one end of which *a* being on the under side of the cover and the other end *b* extending over the cover, solder being used to securely fasten this strip to the cover on both the outside and the inside and at the same time effectually close the slit in the cover to prevent access of air to the inside of the box. As will be understood the tongue J may be made continuous with the body of the box instead of a separate piece or strip. In the drawings I have also shown a device or key K which is intended to be attached, if desired, to the free end of the strip or tongue J, around which key the strip J will be first wound in the commencement of the operation to open the box. As of course will be understood other constructions or character of keys or devices may be attached or applied to the free end of the strip J than the construction of key or device K, whatever device being used, the strip will be wound thereon in the first commencement of opening this box. Again instead of fitting into the slit I a strip J, a key or other opening device may be fastened directly to the portion of the cover between the opening lines E and F, by riveting, soldering or other fastening means at the point I, so as to securely close and seal that point, and the operation of opening the box will be the same.

Heretofore in opening sheet metal receptacles a strip has been cut out of the surface of the cover near the outside edge or sides, and the interior portion of the cover will thus be separated from this strip, but by my invention the whole surface of the cover is torn or cut away in the one operation, and becomes wound upon the opening device, as partially shown in Fig. 3.

The operation of opening the box according to my invention is as follows: The key K being in the position as shown in Fig. 1 is taken by the hand and turned in the direction from right to left, looking at the drawings, when the strip J will first become wound upon the shank of the key and as the operation is continued and the key further turned, the solder or seal at I will be ruptured and then will begin the process of tearing off the cover, and the cut-off portion, as L, will become wound upon the end of the key, and when the tearing has reached a point in the opening line E near the edge of the box, nearly opposite the point M, which is the ending of the opening line F, the portion L will be wound upon the end of the key as shown in Fig. 3 and become a continuation of that key, and then as the operation of turning is continued, the as yet unsevered portion N of the cover will then be wound upon itself from side to side, or from the opening line F to the opening line E at the other side of the box, and thus the entire cover will be wrapped or rolled up and torn from the body of the box except the portion H which has not at all been marked, and as before stated will then operate as a hinge to enable the cover to be unrolled and laid over again in place upon the box to partially cover the contents or the interior. This operation as described with reference to Fig. 3 will be substantially the same if employed to open the round box shown in Fig. 4, and will be the same no matter what kind of a key is used attached to the narrow portion intervening between the opening lines F and E at the point I, as will be readily understood. It is a great advantage that the portion first to be severed is narrow, as shown in the drawings, because the narrower the portion between the opening lines, the greater will be the ease by which the tearing can be started, and where the entire body of a cover is wound or wrapped up, forming really a part of the opening device greater leverage is obtained in tearing off the portion of the cover intended to be torn off.

Besides in my invention a short key or opening device is only required because the material as stated becomes wound upon itself and upon the shank of the key, and after the tearing has reached a point in the opening line E nearly opposite the point M, and the tearing is continued, the cover will only have to be severed from this point on, along the remaining portion of the opening line E, which is very easily accomplished, especially as there will be a great bulk of metal wrapped on the key which will give great leverage, as before referred to.

The foregoing description has related more particularly to the constructions shown in Figs. 1 to 4 inclusive, but the same advantages heretofore stated as ensuing from the use of the means or method shown in those figures for opening metal receptacles, are attained in the use of the analogous means or methods employed now to be described in connection with Figs. 5 and 6, in which the opening line E runs around or substantially arouud the box in proximity with the edge as before described in connection with Figs. 1 to 4, and there is another opening line F which commences at any convenient point close to or connected with the opening line E, and which gradually diverges inwardly therefrom, and runs in such gradual divergence to a point as N slightly past the middle of the cover, thence there is another opening line F′ which commencing at such point gradually diverges from the opening line F to a point between the opening line F and the opening line E; or to state it differently the two opening lines F and F′ may commence at any suitable point, as N, on the surface of the cover and gradually diverging from each other, one of said opening lines F runs from its starting point N to or so as to connect with the opening line E, and the other of said opening lines F′ runs in gradual divergence any desired distance and in any desired di-

rection to a point past the middle of the cover, terminating at a point between the middle and the edge or side of the receptacle.

As will be seen in Figs. 5 and 6 the two opening lines F and F′ do not meet at the point N but there is a slight space between them, which space is weakened, and at this point N is secured by solder or other means an opening ring or other opening device P, the ring P being secured to the space between the opening lines F and F′, and to open the receptacle it is only necessary to lift the ring from the surface of the cover, place the finger or other device through the ring, and pull the ring upward, whereby the weakened portion between the opening lines F and F′ will be severed and the cover drawn or lifted out along the opening lines marked upon the face of the cover, as will be fully understood from Fig. 3.

As just stated, other opening devices than the ring P may be attached to the cover at the point N, within the spirit of this invention, and the whole or any predetermined portion of the cover may be easily and effectually removed on the lines marked upon the cover as hereinabove described in connection with Figs. 1 to 4.

Of course the invention herein described and claimed may be applied to the sides of the can or receptacle instead of to the cover and the sides torn out just as readily and effectually as when the cover is operated upon.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A metal receptacle having an opening line running around the receptacle in proximity with the edge or sides of the receptacle, and another opening line commencing at any convenient point close to or connected with the other opening line, and gradually diverging therefrom for a suitable distance, substantially as and for the purpose set forth.

2. A metal receptacle provided with a cover having an opening line running around the receptacle in proximity with the edge or sides of the receptacle, and another opening line commencing at any convenient point close to or connected with the other opening line and gradually diverging therefrom and running in such gradual divergence to a point past the middle of the cover and terminating at a point between the middle and the edge of the receptacle or cover, substantially as and for the purpose set forth.

3. A metal receptacle provided with a cover having an opening line extending around the cover in proximity to its edge, and another opening line, commencing at any convenient point close to or connected with the other line and gradually diverging therefrom so that a gradually widening strip is included between such lines, said strip being of such length that its edges may be separated from the remainder of the cover and may be wound around a suitable key or opening device adapted to be attached to said strip at its narrow point or portion for a distance approximating one-half of the periphery of the cover, substantially as set forth.

4. A metal receptacle provided with a cover having an opening line running around the receptacle in proximity with the edge or sides of the receptacle, and another opening line commencing at any convenient point close to or connected with the other opening line and gradually diverging inwardly therefrom for a suitable distance, substantially as and for the purpose set forth.

5. A metal receptacle having an opening line running around the receptacle in proximity with the edge or sides of the receptacle and another opening line commencing at any convenient point close to or connected with the other opening line and gradually diverging therefrom for a suitable distance, and a key or opening device connected with said receptacle at the point where said opening lines converge, substantially as set forth.

6. A metal receptacle provided with a cover having an opening line running around the receptacle in proximity with the edge or sides of the receptacle, of another opening line commencing at any convenient point close to or connected with the opening line that runs in proximity with the edge or sides of the receptacle and gradually diverging therefrom and running in such gradual divergence to a point past the middle of the cover, and another opening line commencing at such point and gradually diverging from the last mentioned opening line to a point between said last mentioned opening line and the line which runs in proximity with the edge, substantially as set forth.

7. A metal receptacle provided with a cover having an opening line running around the receptacle in proximity to the edge or sides of the receptacle and two other opening lines commencing at any suitable point on the surface of said cover and gradually diverging from each other, one of said lines running from its starting point close to or so as to connect with the opening line that runs around the surface of the cover in proximity to the edge, to any convenient point thereof, and the other of said opening lines running in such gradual divergence any desired distance to a point past the middle of the cover and terminating at a point between the middle and the edge or side of the receptacle, substantially as set forth.

8. A metal receptacle provided with a cover having an opening line running around the receptacle in proximity to the edge or sides of the receptacle and two other opening lines commencing at any suitable point on the surface of said cover and gradually diverging from each other, one of said lines running from its starting point close to or so as to connect with the opening line that runs around the surface of the cover in proximity to the edge, to any convenient point thereof, and the other of said opening lines running in

such gradual divergence any desired distance to a point past the middle of the cover and terminating at a point between the middle and the edge or side of the receptacle, and a key or opening device connected with said cover at the meeting point of the said two opening lines, substantially as set forth.

This specification signed and witnessed this 16th day of April, 1894.

FREDERIC C. BUSCH.

Witnesses:
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