2 Sheets—Sheet 1.

D. M. SOMERS.

Sheet-Metal Box.

No. 218,076. Patented July 29, 1879.

Fig. 1.

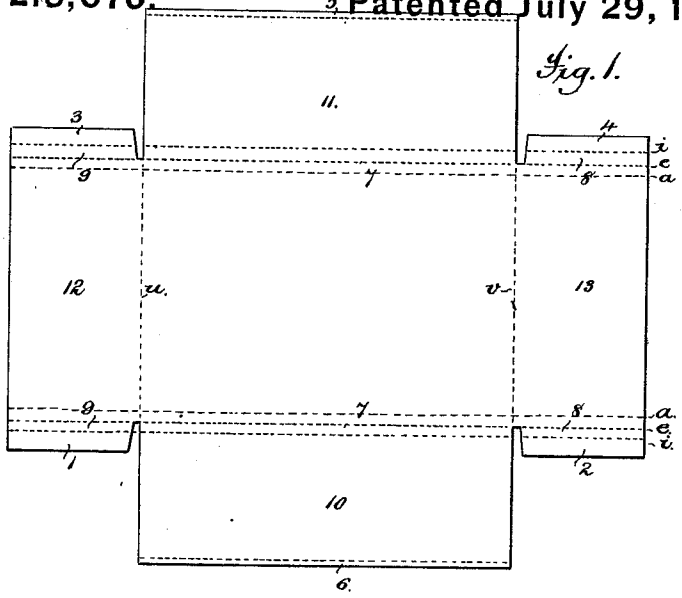


Fig. 2.

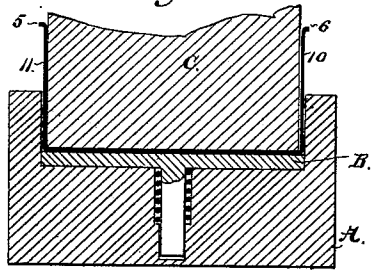


Fig. 3.

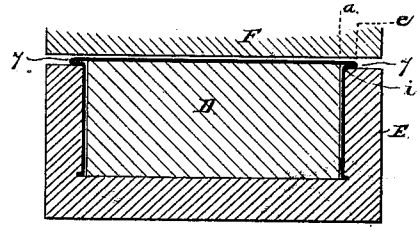


Fig. 4.

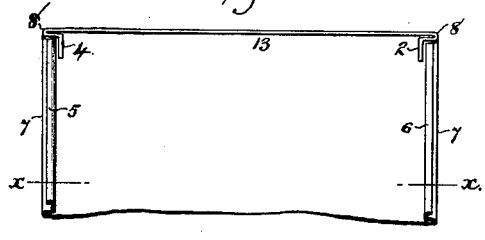
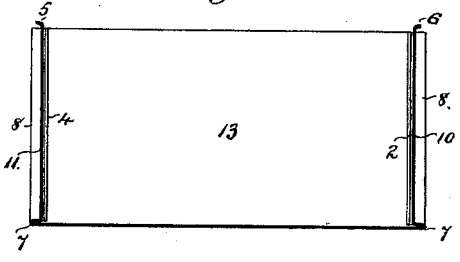


Fig. 5.



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2 Sheets—Sheet 2.

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Sheet-Metal Box.

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Fig. 6.

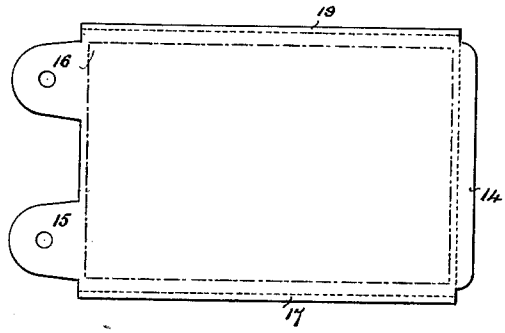


Fig. 7.

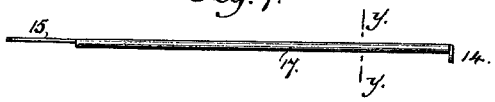


Fig. 8.

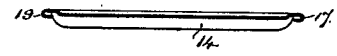


Fig. 9.

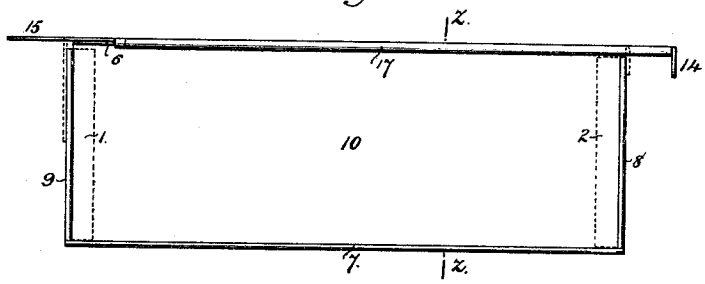


Fig. 10.

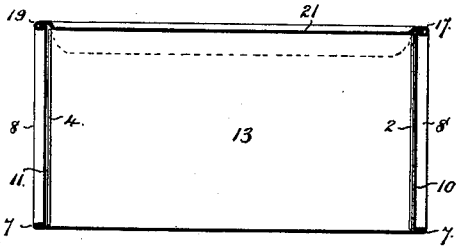
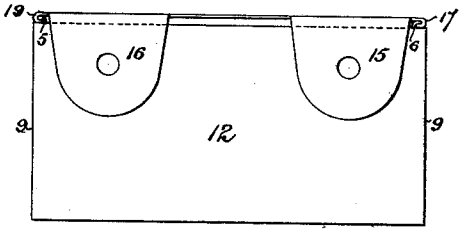


Fig. 11.



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UNITED STATES PATENT OFFICE.

DANIEL M. SOMERS, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN SHEET-METAL BOXES.

Specification forming part of Letters Patent No. **218,076**, dated July 29, 1879; application filed February 5, 1879.

To all whom it may concern:

Be it known that I, DANIEL M. SOMERS, of the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Sheet-Metal Boxes, of which the following is a full, clear, and exact description, reference being had to the drawings which accompany this specification.

The object of my invention is the production of a box adapted for the transportation of small quantities of merchandise, which may be readily opened to enable one to inspect or remove the contents thereof, which said box shall be capable of being fastened in its closed condition, so as to properly protect said contents during transportation.

The invention consists in a sheet-metal box the parts whereof are so constructed as to provide a sliding cover having a means for locking it in a closed position, all of which is too particularly hereinafter described to need further preliminary explanation.

In order to a perfect understanding of said invention, the precise embodiment of it illustrated by the accompanying drawings will first be explained, and then its mode of use and many advantages will be set forth.

In said drawings, Figure 1 represents a plan view of the blank from which the body is fashioned. Fig. 2 represents the dies for and the mode of turning up the box-sides. Fig. 3 illustrates the dies for and the mode of forming the bottom-edge flange. Fig. 4 is a plan view of one end of the completed box-body. Fig. 5 is a vertical section of such body on the lines *x x* of Fig. 4, looking toward one end of the said body. Fig. 6 represents a plan view of the blank from which the cover is fashioned. Fig. 7 represents a side elevation of said cover after its side and end flanges have been properly formed. Fig. 8 is a sectional elevation of said cover, taken on the line *y y* of Fig. 7, and looking toward the rear end. Fig. 9 represents the body and cover adjusted together, the cover being slightly open to better illustrate the mode of placing it in position. Fig. 10 is a sectional elevation on the line *z z* of Fig. 9, looking rearward, and Fig. 11 is a front-end elevation of the box with its cover fully adjusted in place and its fastening-lips bent into position to lock the same securely upon said body.

In forming the body of the box a blank of the form shown in Fig. 1 is cut by any suitable means, as stamping from a sheet of metal or similar material. This blank, after having the edges of its sides 10 11 turned outwardly to provide them with flanges 6 5, is then placed in suitable dies, such, for instance, as the female die A, provided with a spring-seated follower, B, and a male die, C, whereby its sides 10 11 and the edges 1 3 and 2 4 of its ends 12 13 are turned at right angles to the body on the lines *a a*, as in Fig. 2. This body is then inverted over a former, D, which loosely fits within it, and the two are inserted in a female die, E, which is provided with channels to receive the flanges 5 6, as is seen in Fig. 3.

The former D is of less height than the depth of the body of the box, and the female die is of corresponding height, which construction causes the corners of the box-body to spread outward, when the male die F forcibly descends upon the bottom of the said body and forms the flanges 7 7, 8 8, and 9 9 by turning the blank on the lines *e i*. (See Figs. 1, 3, 9, and 10.) The ends 12 13 are then turned up at right angles on the lines *u v* by a common bending or swaging process, forming a hollow rectangular box-body, in which operation the edges 1 3 and 2 4, that now form tongues projecting from the flanges 9 9 and 8 8 of the ends 12 and 13 of the box-body, are passed within the sides 10 11 of the box-body, Figs. 9, 10, which operation completes the said box-body.

The cover is fashioned from a blank of suitable sheet metal or similar material, formed by suitable means in the shape shown in Fig. 6, its rear end being provided with a projection, 14, and its front end with one or more projecting lips, 15 16.

Its sides are then turned inwardly by any common means, as rolling, to form the flanges 17 19, and its lip 14 is turned downwardly at right angles to the body to form the stop 14, as in Fig. 9, which operation completes said cover unless the same is designed to have a countersunk depression, 21, as is shown in Figs. 8 and 10, which form may be given it by suitable dies.

If the cover is so countersunk it will be necessary to make the rear end, 13, of the box-body slightly lower than the end 12, as will be readily understood.

The countersunk depression 21, though not essential in all constructions of boxes embodying my invention, is an important feature where the material used is of moderate strength, since the angles formed by the depression bear against the tongues 1 3 and 2 4 at their upper ends, and extend near the sides 10 11, so as to prevent said sides from being pressed or bulged inward, which movement of these might disengage the flanges 5 6 and 17 19 and free the cover. To adjust the cover upon the box its curved flanges 17 19 are entered upon the similar flanges 6 5 of the sides 11 10 of the box-body, whereupon it may be freely slid over said body until its stop 14 abuts against the rear end, 13, of the body and the lip or lips 15 16 project beyond the front end, 12, thereof. These last-named lips may then be turned down by hand over said front end, 12, thereby locking the cover in place, as in Fig. 11.

It will be observed that the flanges 5 6 and 17 19 securely hold the cover to the sides of the box-body; that the stop 14, pressing against the rear end, 13, of the body, holds it so that its flanges 8 8 tightly press against the rear ends of the sides 10 11, while its tongues 2 4 lie snugly against the inner faces of the ends of said sides 10 11; also, that when the lip or lips 15 16 are pressed downwardly they in like manner press the flanges 9 9 and tongues 1 3 of the front end, 12, of the body against the front end and inner faces of the sides 10 11 of the box-body. In this manner all the parts of the box are securely locked together, so that no ordinary handling can displace them.

By providing the box-body with the flanges 7 7, 8 8, and 9 9, the box-sides are carried toward the center far enough to compensate for the projection of the side flanges of the cover, thus enabling the box to be made square for packing purposes. This construction, besides imparting great strength to the body, affords paneled sides, whereby labels may be protected.

To open the box, the lip or lips 15 16 may be turned up by hand, as in Fig. 9, whereupon the cover is again free to be slid over the top of the box to expose its contents.

A box thus constructed requires no soldering to secure its parts in place or in position. Its structure is such that great strength is imparted to it, and its construction, while providing for conveniently opening it to obtain access to its contents, affords a means for closing and locking it so securely that the box may be handled or transported without danger of disarranging its parts or exposing its contents, thus avoiding the hitherto necessary wrapping, packing, or other means for protecting it.

What is claimed is—

1. A rectangular box the ends of whose body have unflanged upper edges, said box being provided with a sliding cover having a stop at one end adapted to abut against one end of the box-body, and a lip or lips projecting from the other end, which are adapted to be bent down upon and lie flat against the other end of said box-body to lock the cover in place, substantially as described.

2. A box having ends 12 13 of its body provided with inwardly-projecting tongues, as 1 3 and 2 4, bearing against the inner faces of the sides 10 11, which said sides have flanges, as 5 6, and having a cover with flanged sides, as 17 19, a stop, as 14, at its rear end, and a lip or lips, as 15 16, at its front end, all substantially as described.

3. The combination, with a box-body, the sides of which have flanges 5 6, of a cover having flanges 17 19 and countersunk central depression extending near its sides 10 11, whereby the central upper portions of the box-sides are prevented from being forced inwardly, substantially as and for the purposes specified.

4. A box the ends 12 13 of whose body are provided with inwardly-projecting tongues 1 3 and 2 4 bearing to support the inner faces of the sides 10 11, which said sides have flanges 7 7 and 5 6, and the cover whereof has flanged sides 17 19, substantially as described.

5. A box the ends 12 13 of the body whereof are provided with flanges 8 8 and 9 9, and with inwardly-projecting tongues, as 1 3 and 2 4, adapted to bear against the inner faces of the sides 10 11, which said sides have flanges, as 5 6, and the cover whereof has flanged sides, as 17 19, a stop, as 14, at its rear end, and a lip or lips, as 15 16, at its front end, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL M. SOMERS.

Witnesses:
JOHN E. SICKELS,
GEO. H. GRAHAM.