A. O. KITTREDGE.

SHEET-METAL SHUTTER.

No. 183,685. Patented Oct. 24, 1876.

Fig. 1.

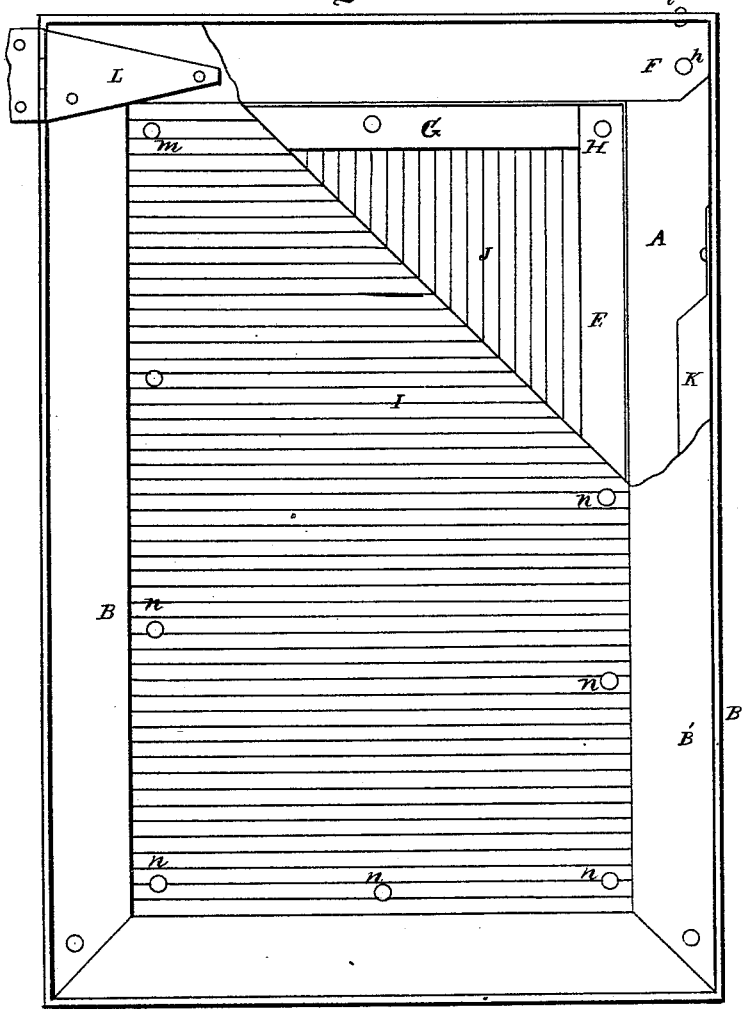


Fig. 2.

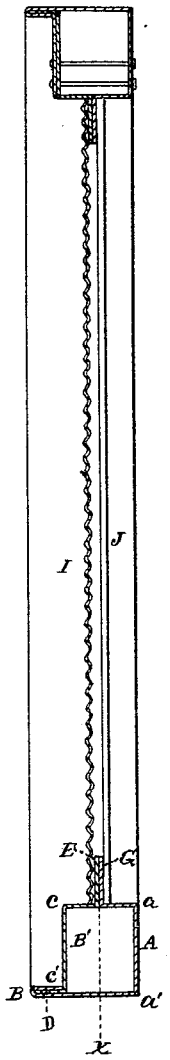
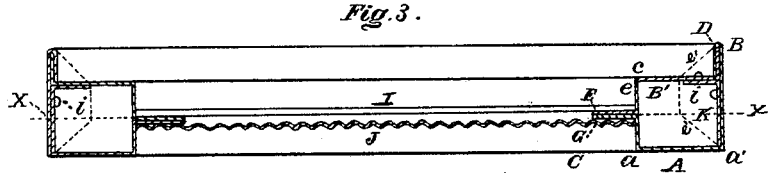


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

ANSON O. KITTREDGE, OF SALEM, OHIO, ASSIGNOR TO KITTREDGE CORNICE AND ORNAMENT COMPANY, OF SAME PLACE.

IMPROVEMENT IN SHEET-METAL SHUTTERS.

Specification forming part of Letters Patent No. **183,685**, dated October 24, 1876; application filed April 15, 1876.

To all whom it may concern:

Be it known that I, ANSON O. KITTREDGE, of Salem, in the county of Columbiana and State of Ohio, have invented a certain new and Improved Sheet-Metal Door and Shutter; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings, making a part of the same.

Figure 1 is a side view of the door. Fig. 2 is a longitudinal section. Fig. 3 is a transverse section.

Like letters of reference refer to like parts in the several views.

The above-said invention is a sheet-metal door, the construction of which is as follows: Each side of the frame of the door or shutter consists of a piece or strip of sheet metal, A, Fig. 2, bent at certain points *a a'*, as the width of the sides of the frame may require, at right angles.

The side formed by the angle *a'* makes the edge of the door-frame. Said side extends beyond the thickness of the door-frame, and is then turned back upon itself, forming a return-bend or lock, as will be seen at B. The side formed by the angle *a* is bent outward again in direction of the side A, making a flange, G, at the line *x*, passing through the middle of the thickness of the frame, and of which thickness the plate A makes one-half, as will be seen in the drawings. The other half of the thickness of the frame is made up by a strip of sheet metal, B', bent at right angles at *c c'*. The angle *c'* makes of the outer edge of the strip a flange, D, which is received into the return-bend B, which is set hard down upon it, thereby locking the two firmly together, as shown in the drawing. The side *e*, formed by the angle *c*, is turned outward at the line *x*, producing a flange, E, lying close upon the flange G of the side of the frame A, above described.

The top and bottom of the door-frame are constructed substantially in the same manner, as will be seen on examination of Fig. 2, and which are connected to the sides of the frame by the ends of the edges of the frame lapping over on the inside of the edge of the top and bottom, as indicated by the dotted lines *e'*, Fig. 3, and securing the same by a rivet, *i*, Fig. 1; also, the ends of the frame are secured to the sides of the same by the ends lapping onto the sides, as will be seen at F, Fig. 1, and which is fastened by a rivet, *h*. The inner edges of the ends of the frame are also connected to the sides by the lapping of the end, respectively, of each upon the other, as will be seen at H, Fig. 1.

The panel for the above-described frame consists of two corrugated sheets of metal, I J, Fig. 1, which, however, may be plain, or of any other design, fitted closely therein, one on each side of the flanges G E of the frame, and which are fastened thereto by rivets *n*, substantially as shown in the drawings.

K is an angle-iron for supporting and strengthening the sides of the frame, and L is a hinge; a lower one is not shown, but which may be attached to the door as the one shown, or in any other appropriate way.

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

As a new article of manufacture, a sheet-metal door or shutter, constructed substantially as herein described—viz., a piece of metal, A, bent at *a a'* to form the width of the side of the frame, return-bend or lock B, flange G, strip of metal B', bent, as described, at *c c'*, flange D and flange E, angle-iron K, and panels I J, as herein set forth.

ANSON O. KITTREDGE.

Witnesses:
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