

W.H. Teal,
Making Sheet-Metal Vessels.
N^o 80,028. Patented July 14, 1868.

Fig: 1.

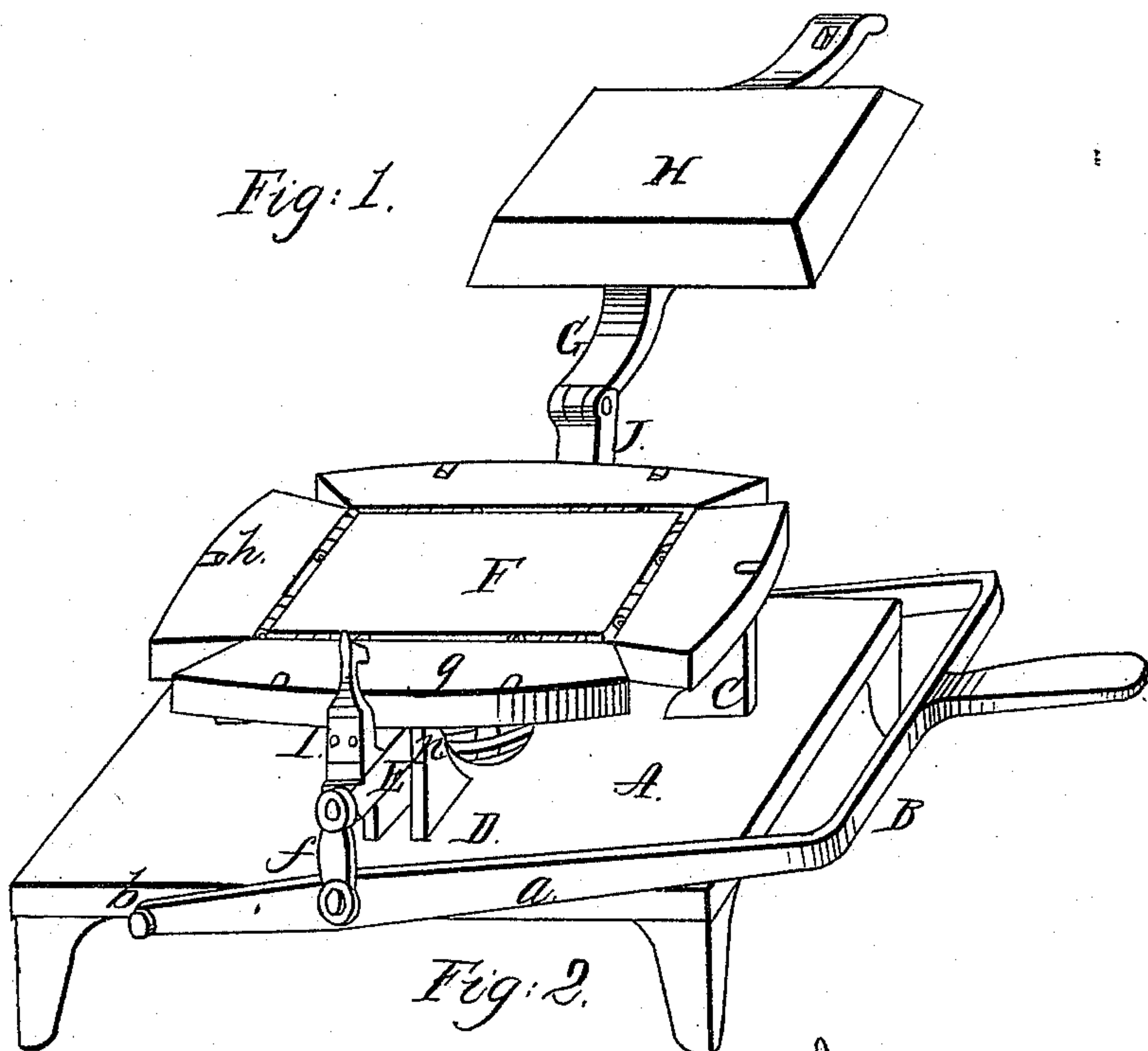
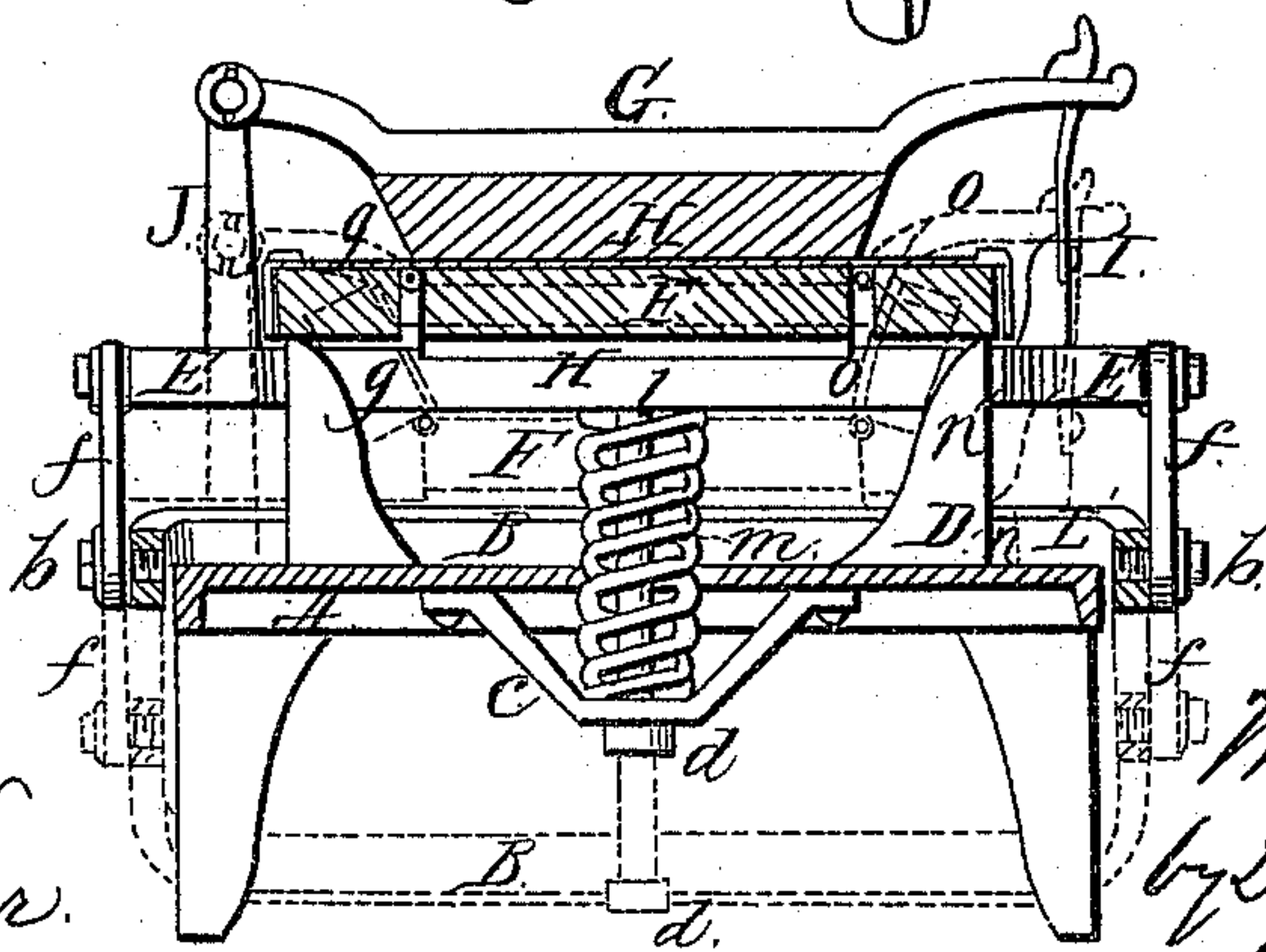


Fig: 2.



Witnesses:
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his attys.

United States Patent Office.

W. H. TEAL, OF WEYAUWEGA, WISCONSIN.

Letters Patent No. 80,028, dated July 14, 1868.

IMPROVEMENT IN MACHINE FOR FORMING SHEET-METAL PANS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, W. H. TEAL, of Weyauwega, in the county of Waupaca, and State of Wisconsin, have invented certain new and useful Improvements in Machines for Forming Sheet-Metal Pans; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to machines for forming sheet-metal pans, and consists in the construction and arrangement of certain novel mechanical devices for the purpose of forming up the sides of what are known as square metal pans by a single movement of the machine.

In the drawings—

Figure 1 is a perspective view of my machine open, and

Figure 2 is a transverse vertical section of the same closed.

In constructing my machine, I make a low table, A, and pivot to its sides, at *b*, the arms *a* of a lever B, as clearly shown in fig. 1. The table A, I make oblong, and at suitable points, near each end, and on a line running through its centre I rigidly attach actuating-guides, C, and near each side of the table A, and on a line running across its centre, and at right angles to the former, a pair of similar actuating-guides, D, so arranged as to allow a cross-bar, E, to move vertically between them.

To the under side of the cross-bar E, I attach a vertical pin, *l*, which passes through an opening in the table, and also through a brace or bearing, *e*, attached to the under side of the table, as shown in fig. 2.

The lower end of the pin *l*, I provide with a head, *d*, to limit the upward movement of the cross-bar E. Around the pin *l*, I place a spiral spring, *m*, with its upper end bearing against the under side of the cross-bar E, and its lower against the bearing or support *e*, as shown in fig. 2.

The ends of the cross-bar E, I connect with the arms *a* of the lever B by rods or short pitmen, *f*, so as to allow of easy turning at the points of connection.

On the upper side of the cross-bar E, I rigidly attach the die F, which has hinged to its sides the formers *g*, which have their ends so shaped that, when turned at a certain angle, they will come together and make a corner.

On the face of the formers *g*, I fasten small projections, *h*, for the purpose of holding the metal plates placed thereon in a fixed position, all as clearly shown in fig. 1.

On the cross-bar E, between its ends and the formers *g*, I attach two uprights, *i* and *j*, and to the upper end of the upright, *j*, I hinge a bar, G, of sufficient length to reach the upright, *i*, and provided with any suitable device for locking it readily and securely, with a corresponding device on the upper end of the upright, *i*.

To the under side of the bar G, I attach rigidly a die, H, having its face of the exact size of the face of the die F, and its sides so shaped that the formers *g* will fit accurately against them when turned up for that purpose.

The cross-bar E, I also provide with flanges *n*, to prevent any lateral movement in the guides D.

In operating my machine, I first place it in the position shown in fig. 1, with the upper die H thrown back, and the lower die F, and its formers *g*, presenting a level surface. This position of the die F, with the formers *g*, which turn readily on their hinges, is determined by the spiral spring *m* and the actuating-guides D and C, as the spring *m* holds up the die F, and the formers *g* are held on a level with it by the actuating-guides D and C.

On the die F, and within the projections *h* on the formers *g*, I place the metal plate *o*, and bring down the die H firmly upon it, and lock it there by means of the locking-device on the ends of the bar G and the upright, *i*, as shown in fig. 2.

By this means, not only the dies H and F, with the metal plate between them, become firmly bound together, but also the cross-bar E with them.

I then press down on the lever B, which draws down the cross-bar E and the dies H and F. As the die F descends, the actuating-guides D and C cause the formers *g* to turn up against the sides of the die H, and in doing so to form up the sides of the metal plate *o* into the shape of a square pan, as desired, all as clearly shown by the red lines in fig. 2.

As soon as the lever B is released, the spring *m* will elevate the cross-bar E, with its attachments, to its original position, and the formers *g* will fall back on the guides D and C. The bar G is then released, the die H raised up, and the pan taken off. The corners of the pan will be found folded in such a way that they can be readily beaten down and fastened. The edge of the pan is then wired and completed.

As soon as one metal sheet is thus formed and removed from the dies, another is put on and formed, and thus the process is continued indefinitely.

I am aware that dies have been used for forming dishes, cups, boxes, and similar articles, and that dies similar to those employed in my machine, with hinged formers, as in the patent of E. A. Smead, March 2, 1858, have been used. But in this patent, owing to the fact that the upper die is attached to a plunger which presses the dies downward, it is found impracticable to have them, under these circumstances, hold the metal plate with sufficient firmness between them to secure a square corner at the place of bending up its sides by the formers.

In my machine the dies are made to grasp the metal plate so that it cannot move; it is securely locked, and the formers must bend it so as to form square corners in the line of bending.

My machine is exceedingly simple in construction, and most of it can be made from castings, and therefore can be gotten up so cheap as to come within the means of the trade generally. Its practicability at once demonstrates its advantage over all similar devices known to me having for their object a similar purpose.

Having thus described my invention, what I claim, is—

A machine for forming sheet-metal pans, consisting of an upper die, H, hinged to a lower die, E, provided with formers *g*, so that both dies may be firmly locked together, and the whole operated simultaneously with the lever B and actuating-guides D C, substantially as herein described.

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Witnesses:

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