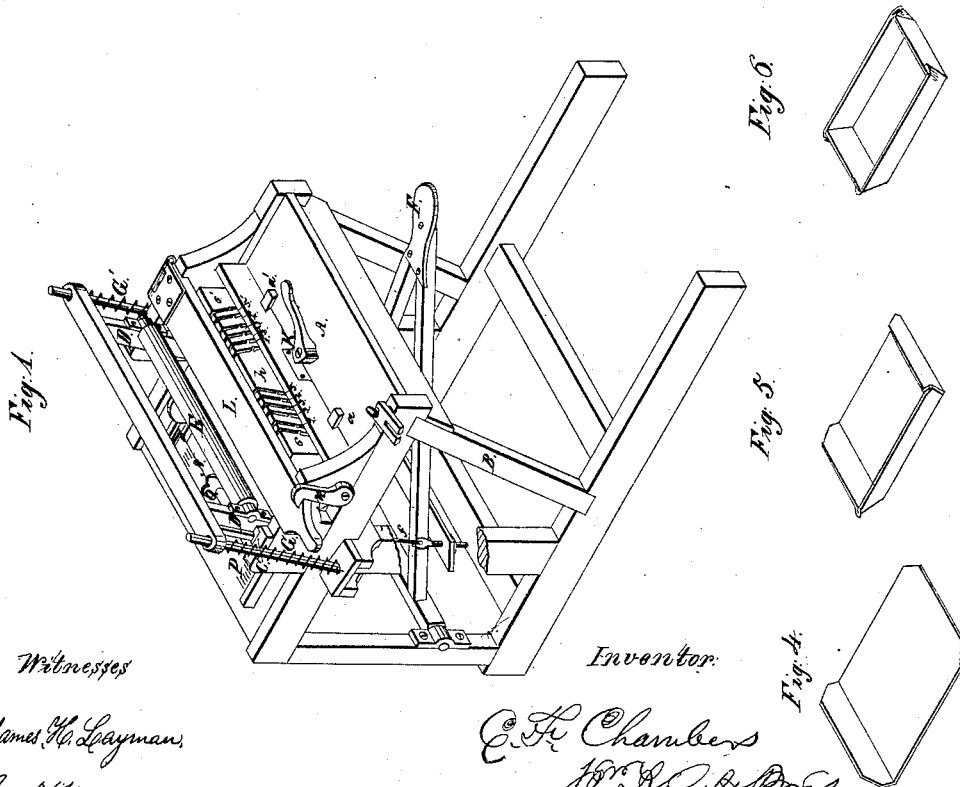
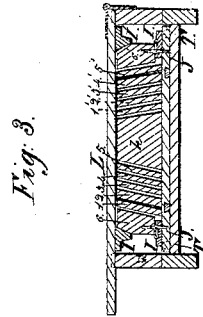
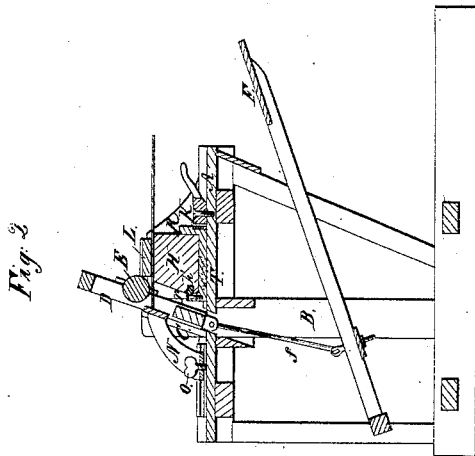


C. F. Chambers,
Making Sheet-Metal Vessels.
N^o 45,226. Patented Nov. 29. 1864.



Witnesses

James H. Layman,
Pro. A. W. W. W. W.

Inventor

E. F. Chambers
10th May 1860
any.

UNITED STATES PATENT OFFICE.

CHARLES F. CHAMBERS, OF HUTSONVILLE, ILLINOIS.

IMPROVED MACHINE FOR MAKING SHEET-METAL PANS.

Specification forming part of Letters Patent No. 45,226, dated November 29, 1864.

To all whom it may concern:

Be it known that I, CHARLES F. CHAMBERS, of Hutsonville, Crawford county, Illinois, have invented a new and useful Machine for Making Sheet-Metal Pans; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to a mechanical appliance to facilitate and improve the manufacture of the class of rectangular pans which are formed out of single sheets of metal, and of which the common baking-pan is a familiar illustration. The tools commonly used for this purpose are of the most primitive description, being nothing but a wooden mallet and a small bench-anvil called the "hatchet-stick." The process is, however, a noisy, tedious, and laborious one, and the work is much inferior, both in neatness and strength, to that accomplished in one-tenth of the time by my machine.

Figure 1 is a perspective view of a machine embodying my improvements. Fig. 2 is a longitudinal section thereof. Fig. 3 is a transverse section through the clamping apparatus and form. Figs. 4, 5, and 6 represent the work in successive stages of manufacture.

A is a horizontal bed or bench, supported at a convenient height by a frame, B. A transverse aperture, *a*, in the bench enables the passage of the upsetting-roller E. Grooved stanchions C, rising obliquely from the bench A, serve to hold and guide to its proper path a gate, D, which carries the upsetting-roller E. The downward or effective stroke of the roller-gate D is effected through the medium of a treadle, F, connected by rod *f* to the said gate. The gate D is made self-retractive by springs G G'.

The form H consists of a central block, *h*, and two series of supplemental blocks, 1 2 3 4 5, 1' 2' 3' 4' 5', and end clamps, 6 6', which clamps are hinged (see Fig. 3) to feet I, capable of adjustment toward or from the center and of being fixed to any desired position by means of screws J.

The various pieces which compose the form H are all nested in a bed, R, whose tongue *r* enters a groove, *h'*, common to all of the pieces. The bed R is restrained transversely by means of tongues *a a'* on the bench, and has a slight automatic retraction by means of springs T. The bed R, together with its su-

perincumbent form, being thus made self-retractive, the operator, by the use of a cam, K, is enabled to advance the form to the exact position that will secure the proper pressure of the upsetting-roller, or by a counter movement of the cam to momentarily draw back the work, so as to allow of the return-stroke of the roller.

The sheet to be operated upon, being placed upon the form H, is held securely thereto by clamp L and catch M. Beveled shoulders *l* on the under side of the clamp enable the said clamp to crowd the blocks snugly together as it is pressed downward.

N is a gage capable of longitudinal adjustment on the bench for a deep or for a shallow pan, and of being fixed in proper position by means of a screw, O. A scale, P, marked on the bench enables the gage N to be set accurately to the desired place.

Q is a slitted "jack-stick" for finally closing down the corners by the aid of a mallet. The two ends of the sheet being successively upset, as shown partially in Fig. 4, and the stuff being then shifted a quarter round, and having said bent ends inserted in the joints between the blocks and properly clamped and advanced, a third descent of the roller produces the form Fig. 5. The stuff is now shifted half around and the opposite side is bent down in the same way. The corners being then closed down by a mallet or otherwise, the pan is completed.

I claim herein as new and of my invention—

1. In the described combination, the form H, clamp S, and the upsetting-roller E, guided and operated substantially as set forth.

2. In the described combination, with the clamps 6 and 6' and the clamp L *l l'* M, or their equivalents, the sectional or compound form *h 1 2 3 4 5 1' 2' 3' 4' 5'*, substantially as set forth.

3. The arrangement of self-retracting form H and regulating-cam K, substantially as set forth.

4. The clamp L *l l'*, performing the double office of closing the blocks and holding down the work.

In testimony of which invention I hereunto set my hand.

CHARLES F. CHAMBERS.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.