W. A. Tarbutton.

Bending Sheet Metal Pans.

No. 94,851. Patented Sept. 14, 1869.

Fig. 1.

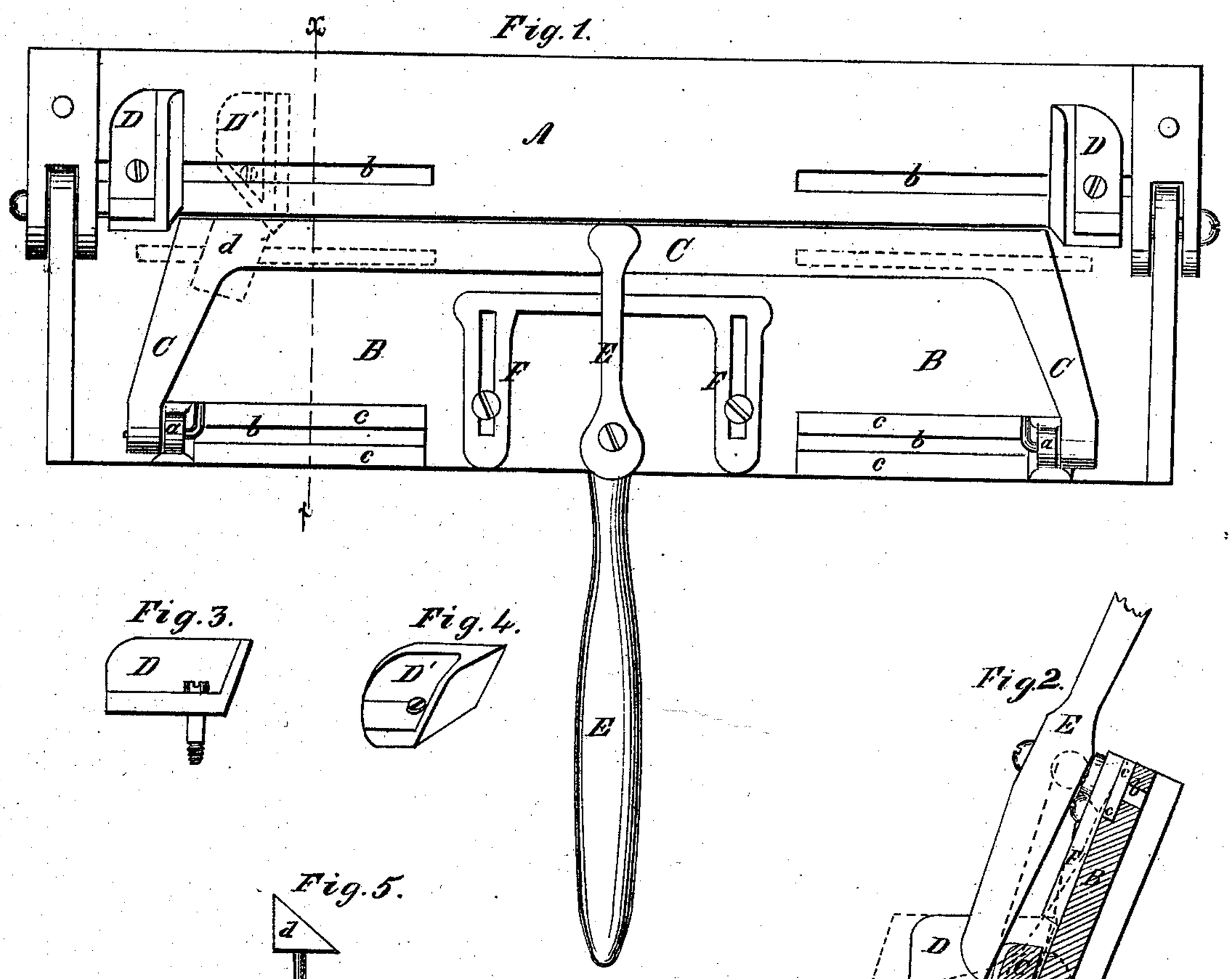


Fig. 3.

Fig. 4.

Fig. 5.

Fig. 2.

Fig. 6.

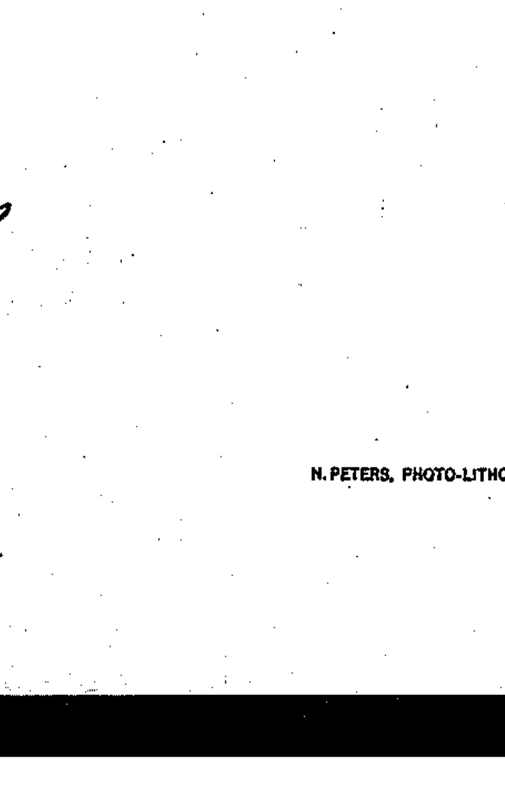
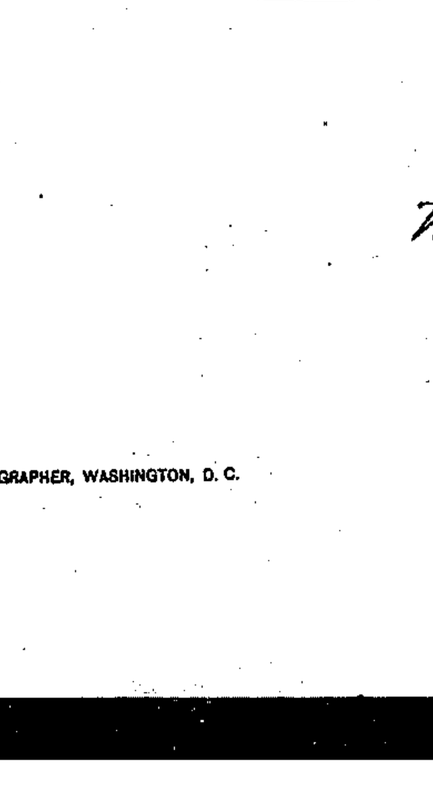


Fig. 7.



Witnesses:
W. Burris
David A. Burr

Inventor:
Wm. A. Tarbutton
per his
Atty G. B. T.

United States Patent Office

WILLIAM A. TARBUTTON, OF HARRISBURG, PENNSYLVANIA.

Letters Patent No. 94,851, *dated September* 14, 1869.

IMPROVEMENT IN MACHINES 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, WILLIAM A. TARBUTTON, of the city of Harrisburg, in the county of Dauphin, and State of Pennsylvania, have invented a new and improved Machine for Forming Sheet-Metal Pans; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view.

Figure 2 is a transverse section, as indicated by the line *x–x* of fig. 1.

Figure 3 is a view, in detail, of "corner-former."

Figures 4 and 5 are views, in detail, of "corner-former" and adjustable angular block.

Figure 6 is a view representing the "corner-lap" of pan as formed by this machine.

Figure 7 is a view representing the "corner-lap" of pan as formed by the machine S. H. Kennedy patented, November 3, 1868.

Like letters in the figures of the drawings indicate like parts.

My invention has for its object the "bending" or "forming" of the sides and ends of sheet-metal pans; and

It consists—

First, in providing the bed and bending-plates of the machine with elongated slots, in combination with "corner-formers" and "clamp pivot-blocks," so that by means of the said slots, the "corner-formers" and "clamp pivot-blocks" may be adjusted therein, to suit any size of clamp or pan required, without removing either from the plates.

Second, in having the heads of the "corner-formers" so inclined as to conform to inclined blocks adjustable in elongated slots of the bending-plate, when the latter is thrown up, so that the "corner-laps" may be formed in such a manner as to admit of their being folded down with greater facility in the finishing of the pan.

I construct my machine as follows:

A is the bed-plate.

B, the bending-plate, which is united to the former in a proper manner by pivot-screws.

C, the clamp, attached to the pivot-blocks *a a* by screws, or otherwise.

D D, the corner-formers.

E, the lever, attached, by a pivot-screw, to a block in the centre, next to the edge of the bending-plate.

F, the gauge for giving the required depth to the sides and ends of the pan, and adjustable by means of screws and slots.

The corner-formers D D and clamp pivot-blocks *a a* have tongues or projections fitting sufficiently loose in elongated slots *b b b b* as to admit of their being moved freely therein.

The formers, each, are fastened to the bed-plate by a screw or bolt passing through the tongue, and having a screw-nut on the end, fitting in a recess running the length of the slot underneath of the plate, to hold the screw-nut, when turning the screw or bolt.

The pivot-blocks are fastened by set-screws underneath of the bending-plate, the shoulders formed by the tongues fitting in recesses, *c c*, above, running the length of the slots.

Thus, by loosening and tightening the screws, both the formers and pivot-blocks may be readily adjusted to suit any size of clamp required.

Operation.

My machine, in use, will be provided with six clamps, of different sizes, for as many sizes of pans. When a clamp of one size has been used, and it is desired to use another of a larger or smaller size, the screws connecting the clamp with the pivot-blocks are detached therefrom, and the one selected put in its place, by loosening the set-screws fastening the pivot-blocks to the plate, and slipping them along in the slots until they connect properly with the clamp, when the screws are inserted, and the set-screws tightened. Thus, it will be seen, if a necessity or demand should occur, at any time, for a pan of a new size, and either of the sizes of clamps accompanying machine will not answer for the purpose, it can be easily met by simply getting a new clamp.

In forming the pans, the sheet-metal having been suitably prepared, and the gauge set to give the required depth to the sides and ends of the pan, one end of the sheet-metal is then placed under the clamp, with its edge against the gauge, and the lever brought around over the clamp, the latter having a slight swelling surface on the top thereof, to admit of the lever binding the clamp firmly to the metal. The bed-plate being fastened to the bench by screws or bolts, the bending-plate is then thrown up, forming the end of the pan, as seen in fig. 2. The metal is then withdrawn from under the clamp, and the other end and sides submitted to a like operation.

In forming the sides, the corner-formers are moved up against the ends, and fastened. At this stage of the operation, it will be observed, by simply having the heads of the "corner-formers" inclined to conform to the angle of the plane of the bending-plate when thrown up, the "corner-laps" will be formed at right angles, (see *m*, fig. 6,) being perfectly compressed or broken from the bend or turn of the metal to the extreme end or edge thereof, so that but one or two taps of the mallet are required to fold the lap down, while in the machine of S. H. Kennedy, the "corner-form-

ers" being inclined to conform to inclined channels in the bending-plate, the "corner-laps" will be formed at an acute angle, (see *n*, fig. 7,) being perfectly compressed at the extreme end only; consequently careful handling and several blows of a sharp-cornered mallet are required to make them turn or break where they should in folding them down; and, moreover, such a machine cannot be made adaptable to forming a pan of any size that may be required, as the size of the pan must be governed by the number and position of the inclined channels in the bending-plate, each channel having an extra 'clamp pivot-block," to suit the several sizes of clamps used; and then, when it is desired to make a pan of a shallow depth, it cannot be done without the gauge coming in contact with "corner-former" when bending-plate is thrown up. All these disadvantages are obviated by this machine, by dispensing with the "inclined channels," extra "corner-former," and "clamp pivot-blocks," and an extra "pivot-block" for lever, and the changing of the latter thereto, and simply making both the "corner-formers" and "clamp pivot-blocks" adjustable in elongated slots, to suit any size of pan or clamp required, as described, thus effecting a considerable saving of time and labor in the forming and finishing of pans of various sizes, and, besides, rendering the machine more simple, and a good deal less expensive in cost of construction.

I contemplate using another kind of "corner-former," D′, and angular blocks *d*, adjustable in elongated slots in the bending-plate, by means of a bolt cast therewith, and fitting through the slots, and having a screw-nut on the end, for fastening them to the plate, the "corner-formers" being inclined from the side, instead of from the top, as in those herein described, to conform to the angle of the blocks, so as to give the "corner-laps" of the pan a quarter turn or bend from a right angle, and thus, with one blow of the mallet, fold the lap down. This turn or bend must be made by a slight tap of the mallet, before final blow is struck, when the laps are formed at right angles, as herein referred to. Hence it is proposed, by this kind of a "former" and the "angular blocks," to save the time required to do this by hand with a mallet, and give the turn or bend with the machine. It is true this is a small item where a few pans are made, but, in large establishments, say, where a thousand pans are made at a time, it would require four thousand blows or taps of the mallet to make this turn or bend, consuming a great deal of time, which could be done by the machine in the operation of forming the pan. So, considered in this respect, it may be found desirable to provide the machine with angular blocks and "corner-formers" to correspond, in case they should be wanted.

Having thus fully described my invention,

What I claim therein as new, and desire to secure by Letters Patent, is—

1. The bed and bending-plates A B, provided with the elongated slots *b b b b*, in combination with the "corner-formers" D D and adjustable "clamp pivot-blocks" *a a*, substantially as set forth.

2. The corner-formers D′ D′, in combination with angular blocks *d d*, adjustable in elongated slots, substantially as set forth.

W. A. TARBUTTON.

Witnesses:

D. C. KOLP,

C. W. KLINEDINST.