

CHARLES R. MERRIAM.

Improvement in Tin-Cutting Machines.

No. 128,159.

Patented June 18, 1872.

Fig. 1

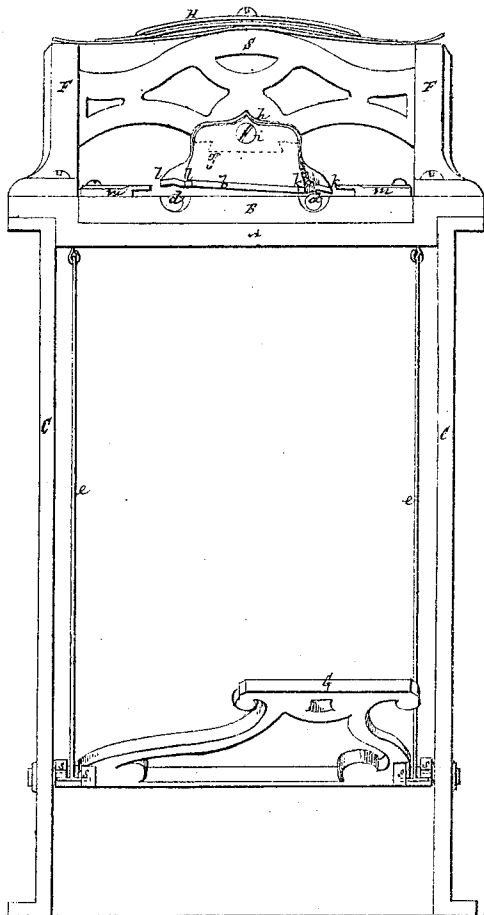


Fig. 2

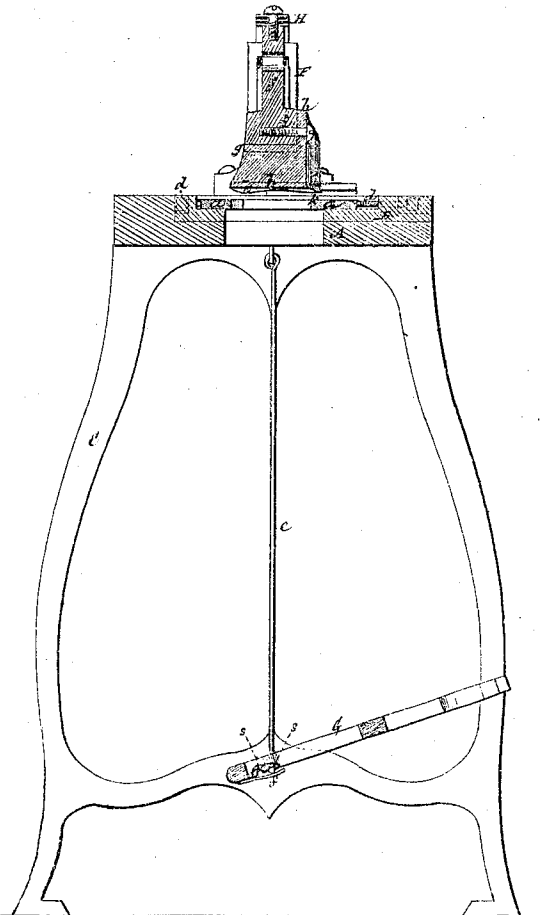
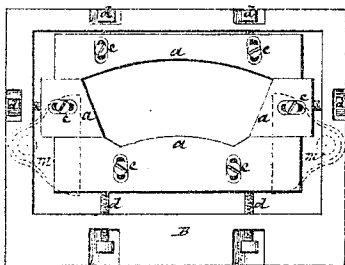


Fig. 3



Witnesses.
Fred. Wagner
R. R. Rabeau

Charles R. Merriam
per Brown & Corbin
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES R. MERRIAM, OF MIDDLEBURY, VERMONT.

IMPROVEMENT IN TIN-CUTTING MACHINES.

Specification forming part of Letters Patent No. 128,159, dated June 18, 1872.

To all whom it may concern:

Be it known that I, CHARLES R. MERRIAM, of Middlebury, in the county of Addison and State of Vermont, have invented certain new and useful Improvements in Tin-Cutting Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a front elevation of a tin-cutting machine constructed in accordance with my invention; Fig. 2, a central vertical section in plane at right angles to Fig. 1; and Fig. 3, a plan of a movable plate, which carries certain dies or knives, detached.

Similar letters of reference indicate corresponding parts throughout the several figures.

My invention consists in certain novel and advantageous combinations and arrangements of devices and particular constructions of certain parts in a machine for cutting tin plates or sheets applicable to the manufacture of culinary vessels and for other purposes, whereby, while simplicity is combined with durability, the machine may readily be adapted to do different kinds of work, and juvenile labor may be employed to operate it.

In the machine represented in the accompanying drawing, the tin plate to be cut is slid over a set of lower dies or knives, *a a a a*, and the cut effected by an upper die, *b*, coming down on the plate and passing through it and between or below the cutting-edges of the knives *a a a a*. The knives *a a a a* are made of any desired shape, according to the article or form required to be cut, and are carried by a movable plate, *B*, arranged to slide into a recess in or fit between projections on the bed-plate *A*, that is supported by suitable side-frames *c c*. By attaching the knives *a a a a* to the movable plate *B* increased facility is afforded for making articles of different form by having a series of said plates with differently-shaped or arranged knives attached to them, and substituting one plate for another on or in the head, as required, for which purpose the several plates should be similarly made to fit the bed or table *A*, so that no time may be lost and the machine be readily put into working order. The knives *a a a a* are made readily detachable from and are adjust-

able on the plate *B* by employing screw and slotted connections or fastenings, *c c*, and as the knives are independent of each other any one of them may be removed and its face or edge be ground without impairing its proper shape, and when replaced the knife or knives may be readily adjusted, as required, by means of set-screws *d d*, arranged in the movable plate *B* and bearing against the outsides or back edges of the knives, which screws also serve to tighten the dies or knives *a a a a* should they get worn and loose by the passing of the upper die through between them. Adjustable guides *m m* may also be pivoted to the plate *B* to direct the work to the cutters. The upper die *b*, which is made to fit the lower dies *a a a a*, is carried by a cross-head, *S*, that is arranged to slide up and down in guides *F F*, and is operated by means of a treadle, *G*, and rods *e e*, as against the pressure or action of a spring, *H*, attached to the cross-head and bearing at its ends on the tops of the guides *F F*, the treadle serving to depress the cross-head and the spring to throw it up again when pressure is removed from the treadle. The treadle *G I* I prefer to construct with two grooves or notches, *s s*, on each side of it and at different distances from its fulcrum or center for the rods *e e* by cross-pins at their lower ends to fit into, upon the under side of the treadle, and where they may be held in place by springs *f*. By shifting the rods *e e* into the notches *s* nearest to or furthest from the fulcrum of the treadle, the power of the machine may be varied to suit light or heavy work. The connecting-rods *e e* have a loose joint near the cross-head under the table or bed-piece, so that there will be no binding or cramping of the machine when changing the rods to the different notches or grooves in the treadle. By attaching a shaft with clutch-gears to the connecting-rods, the machine can be worked with increased facility in cutting out heavy work. The cross-head *S* is constructed with a dovetail, *g*, through it, and each upper die *b*, of which there may be any number to suit different work, is shaped to fit the dovetail in the cross-head, so that it may be readily slipped in and out or be changed a shoulder, *h*, keeping it in position when in the cross-head, to which it may be secured by a screw or bolt, *i*. Said male or upper die *b* is disposed and shaped to have a shear cut,

beginning at the two lowest corners *k k* at its one end and cutting toward the center of said end, then cutting along the front and back edges till its opposite and higher end corners *l l* come down on the metal when the cut is continued from corner to corner to the center of said end by making the latter of a reverse bevel at its cutting-edges, as in the case of the opposite end of the die, which, as a whole, is set sloping in direction of its length. This construction and set of the upper die makes it easy for the operator, as there is but little friction on the lower dies in any one place, while the upper die passes through or in between them.

By employing different sets of adjustable dies for cutting tin plates all ready for use by substituting one plate, B, for another, and

suitably changing the upper die *b*, different kinds of work—such as pans, basins, and any flaring work—may be made with the ends notched and clipped ready for the turning of the edges, and, by the facility with which the dies are changed, a boy may work the machine as readily as a man.

What is here claimed, and desired to be secured by Letters Patent, is—

The attachment of the male or upper die *b* to the cross-head S by means of a dovetail, *g*, and shoulder *h*, substantially as and for the purpose herein set forth.

CHARLES R. MERRIAM.

Witnesses:

JOHN G. WELLINGTON,
CHAS. E. PINNEY.