(No Model.)

W. CHURCHILL.

MACHINE FOR MAKING PANS.

No. 340,659. Patented Apr. 27, 1886.

Fig. 1.

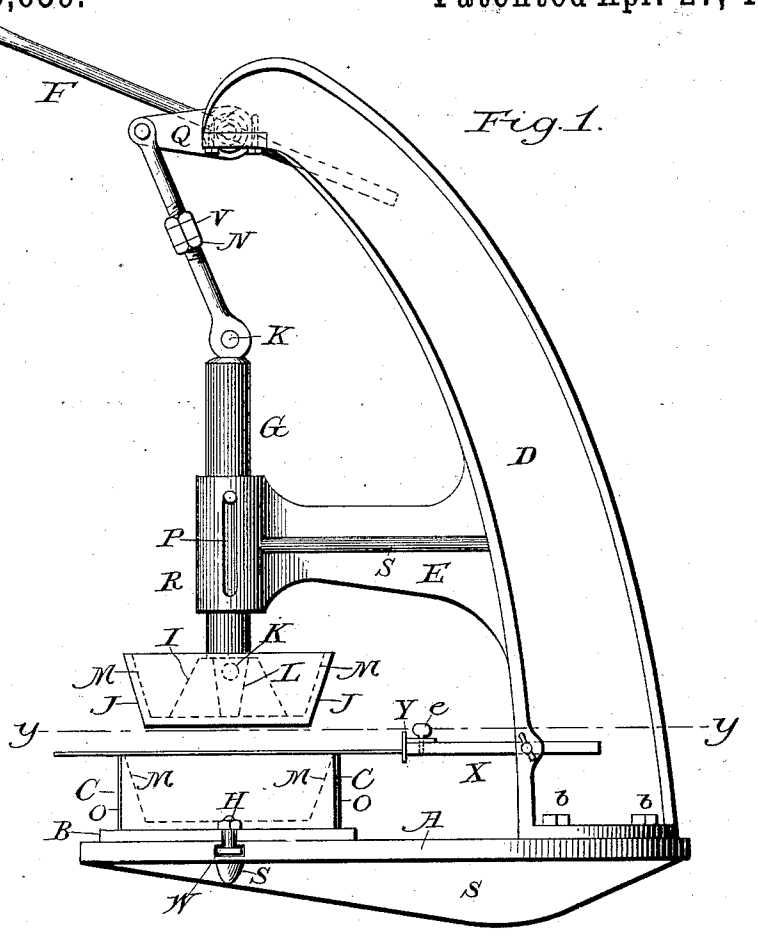
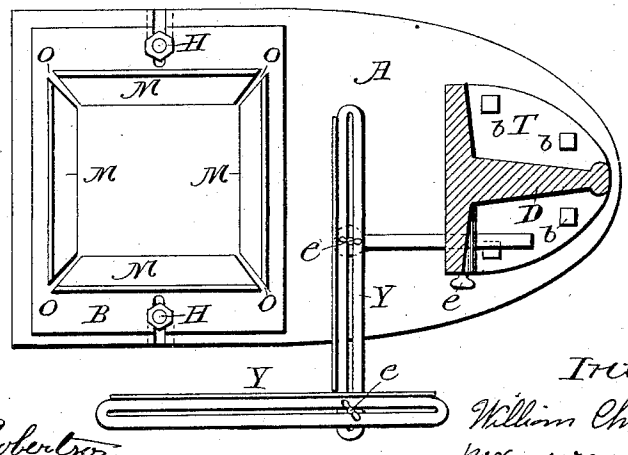


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM CHURCHILL, OF YARMOUTH, NOVA SCOTIA, CANADA.

MACHINE FOR MAKING PANS.

SPECIFICATION forming part of Letters Patent No. 340,659, dated April 27, 1886.

Application filed April 20, 1885. Serial No. 163,885. (No model.) Patented in Canada February 16, 1885, No. 21,249.

To all whom it may concern:

Be it known that I, WILLIAM CHURCHILL, a citizen of Canada, residing at Yarmouth, in the county of Yarmouth and Province of Nova Scotia, Canada, have invented a new and useful Pan-Stamping Machine, (for which I have obtained a patent in Canada, No. 21,249, bearing date February 16, 1885,) of which the following is a specification.

My invention relates to improvements in pan-stamping machines in which a male and a female die are brought together by means of an application of the power-press in such a way as to press a sheet of iron, tin, or other metal into a perfectly-shaped pan, the female die having slots at the corners, so formed—one at each corner—as to fold the corners of the sheet into the form desired, when the male die is brought down upon the sheet that is laid in position upon the female die. This fold of the corners of the sheet is made true and of proper shape by these slots at the corners of the female die, and only require to be bent down by a mallet smoothly to the side of the pan to finish its form. This female die is made solid on a metal plate, which is fastened for use to the bottom or bed-plate by screws or bolts at each end, for the purpose of allowing it to be removed, that it may be replaced by another of a different form or size, which may be done to any number or extent. The male die is formed on the outside to the shape and size of the inside of the required pan, and fixed to a piston-rod bearing on the center of the die, the end of the piston-rod entering a hole made with a taper in the center stud, and fixed thereto by a pin, which can be withdrawn at any time for the purpose of changing the form and size of dies required.

The second part of my invention relates to the peculiar form of application of the hand-power press, by which the male die is forced down upon the thin plate of metal laid upon the female die, thereby pressing the sheet into the desired form and folding at the same time the corners of the sheet into a water-tight plait. This power-press is composed of the upright frame fixed by screw-bolts to the bottom or foundation bed-plate at one side, and passing over the center of the dies, with a projecting arm in which the piston-rod holding the small or male die slides up and down. This rod slides through a hole made in this projecting arm, and has channels at the sides, in which guide-pins on one or both sides of the piston-rod slide, thus guiding the male die correctly into the matrix below, and limits the extent of the motion. The piston-rod is raised or pressed down by a sliding lever fixed at the top in a hole through a revolving shaft, on one end of which is the crank, which is connected with the top end of the piston rod by a connecting-rod having a right-and-left-hand nut, with check-nuts in the center, by which the length of this connecting-rod may be varied for adjusting the action of the dies exactly, and by joints and pins at the junction of the connecting-rod with the crank and piston-rod, the lever being held in the revolving shaft by a set-screw, so as to allow of its being pulled out to a greater length or made shorter, for the purpose of exerting more or less power, as required, as shown in the annexed drawings.

Figure 1 is a vertical section of a machine embodying my invention. Fig. 2 is a horizontal section of the same, the line *y y*, Fig. 1, indicating the plane of section.

A is the foundation or bed plate, with flanges S S, for producing strength, and contains a slot, W, running across it, for holding bolt-heads. D is the upright frame, fixed to this bed-plate by the screw-bolts *b*, holding the flange T.

R is the slide-box for piston-rod to run through in the extended arm E, which is attached to the frame-standard D.

B is the plate on which the female die is made, fastened to the bed-plate by the screw-bolts H, which are held by and slide in or out in the slot W.

C is the female die; M, the interior form, and O O the slots which make the folds in the corner of the thin plates.

J J is the male die; M, the interior shape of this one also; I, the center stud having a tapered mortise in the center of it, and L the tenon on the end of the piston-rod G, which is tapered to fit the mortise, so that the male die will drop off the end of the piston-rod the moment the pin K is removed, which pin K is tapered like the tenon, so that a single tap from a mallet will remove it. The piston-rod G is con-

nected with the crank Q by the rod N, having the screw-nut V in its center, which nut has a right-and-left-hand female screw on the inside, fitting a similar screw-thread on the two ends of the connecting-rod N, which is cut in twain at this point, so that turning the nut one way will lengthen the rod and turning the other way will shorten it. This nut has at each end a check-nut, V′, of similar-fitting thread, fitting the ends of the rod, for holding the center nut firmly in position when set tight, as required.

F is the lever, arranged to slide through a hole in the end of the crank-shaft Q′, for the purpose of lengthening or shortening the lever at pleasure, in order to exert thereby a greater or less power, as may be required, for larger or smaller sheets of metal.

P is a slot in the side-box R, through which a pin, P′, slides, which pin is inserted in the piston-rod G, fitting neatly the slot, guides the piston-rod from turning either way, and limits the extent of its motion.

The male and female dies are intended to be taken off at pleasure, and others of a different size or shape substituted in their place, as may be required. When in position, the male die is raised by means of the lever F and crank Q. The plate of metal to be made into a pan is then placed between them, being laid upon the female die and brought to the proper position by the arms Y Y, held out to the proper place by the slide-rod X and held firmly by the thumb-screws *e*, the plate being first slightly bent over some sharp corner of a stake or anvil at the corners at the point where it is to be folded by the slots O O in the female die C when pressed into shape by the male die J J. This slight indentation at the corners of the metal sheet is to be made in the direction of the slots O O, or as it is to be folded at the corners in plaits.

Z Z represents the metal plate, showing the slight indentation downward on the under side. This is for the purpose of making the corner fold or plait start easily in the right direction.

X is a sliding rod, holding slotted slide-bars which can be set at any required position for guiding the sheet to its proper position for pressing, and these are held firmly by the thumb-screws *e e*. When the plate is properly placed on the female die C, and the arms Y adjusted to the right position, the male or upper die is brought down by the lever-and-crank motion exerted on the piston-rod, which will press the plate down to the bottom of the matrix or lower die, thereby forming the pan perfectly to the shape required, with the corners folded into the slots O O at the corners of the lower die. Then the handle or lever is lifted, the pan taken out, the corner folds bent over smoothly against the sides with a mallet, the top edge wired, and the pan is complete.

I am aware that pan-stamping machines have been made and used before, operated by a power-press, and I do not claim that as my invention, broadly; but

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

1. The combination, with the machine having the stationary female die C and the movable die J, and means for operating the latter, of the gage consisting of the slide-rod X, held adjustably on the frame of the machine, and the arms Y Y, adjustable on the rod X and on each other, substantially as and for the purpose set forth.

2. The slide-rod X, for holding and adjusting the position of the slotted arms Y Y, in combination with these arms and the set-screws *e e*, for holding them, whereby sheets of metal of any shape or size may be guided to the proper place for bending into shape, substantially as shown and described.

WILLIAM CHURCHILL.

Witnesses:
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