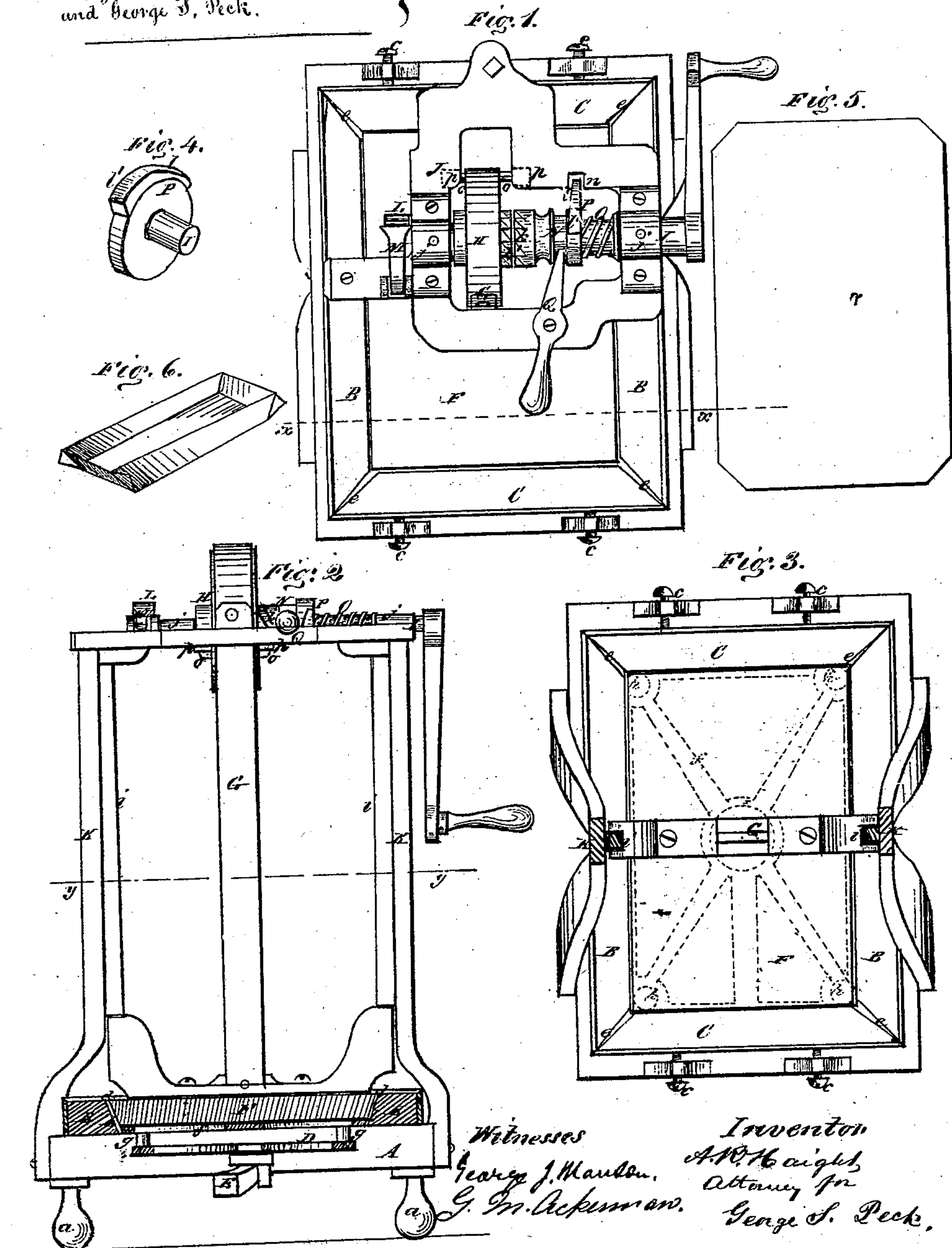


*G. S. Peck,*  
*Bending Sheet Metal.*

*No. 95,721.*

*Patented Oct. 12, 1869.*

*Assigned to William H. Morgan  
 and George S. Peck.*



*Witnesses*

*George J. Mansen,  
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# United States Patent Office.

GEORGE S. PECK, OF TOWANDA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND WILLIAM H. MORGAN, OF SAME PLACE.

Letters Patent No. 95,721, dated October 12, 1869.

## IMPROVEMENT IN MACHINES FOR MAKING 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, GEORGE S. PECK, of Towanda, in the county of Bradford, and State of Pennsylvania, have invented a new and useful Machine for Making Sheet-Metal Pans; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to a new and useful machine for making, out of a single piece of sheet-metal plate, sheet-metal pans, those of rectangular shape, and is more especially designed for manufacturing what are termed and known as "pie-pans," which are of tinned sheet-iron, quite shallow, of rectangular form, and have bevelled or inclined sides.

The object of the invention is to obtain a machine for the purpose specified, which will perform the desired work rapidly, and in a perfect manner, with unskilled labor; dispense with all soldering, as well as jointing-machines, which are at present almost universally used in sheet-metal work, and effect these results without any increase in the consumption of stock, rather economizing in that respect than otherwise.

In the accompanying sheet of drawings—

Figure 1 is a plan or top view of my invention.

Figure 2, a rear sectional elevation of the same, taken in the line *x x*, fig. 1.

Figure 3, a horizontal section of the same, taken in the line *y y*, fig. 2.

Figure 4, a detached perspective view of a cam pertaining to the same.

Figure 5, a plan or top view of a piece of sheet-metal cut in the proper form or shape, ready to be operated upon in the machine.

Figure 6, a diminished perspective view of a pie-pan as made by my machine.

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

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

The machine may be constructed wholly of cast-iron.

A is the base of the same, of rectangular shape, and supported by feet, *a*, one at each angle or corner. On the upper surface of this base there are two fixed or permanent cleats, B B, which are parallel with each other, and have their inner sides inclined or bevelled, as shown in fig. 2, at *b b*. These cleats may be cast with the base, or made separately, and afterward permanently secured to it by screws or otherwise.

C C represent two cleats similar to B B, but they are not fixed or permanently attached to the upper surface of the base A, like B B, being so arranged or applied that they may be adjusted by set-screws, *c c*.

The cleats C C are located on the base A, at right angles to B B, and the four of them, B B C C, constitute a rectangular female die, in which the pan is swaged by a male die. The inner surfaces of the cleats C C are bevelled like B B, as shown at *d d*, in fig. 2, and the ends of all the cleats are bevelled so as to form mitre-joints, as shown at *e* in fig. 3.

These joints *e*, however, are not close ones, the bev-els at the ends of the cleats being at such an angle that when the cleats at the outer ends of the joints are in contact, there will be a space of gradually increasing width from the outer to the inner ends of the joints, as shown clearly in fig. 3. The spaces may be made of greater or less width, to suit the thickness of the metal plate to be swaged, by adjusting the cleats C C further inward or outward from the ends of the cleats B B.

The base A, within the space enclosed or formed by the cleats B B C C, forms the bottom of the female die, and it is of skeleton-form, as shown in fig. 3 at *f*.

Underneath this open or skeleton-portion of the base there is a cross-arm plate or "spider," D, having an upright pin, *g*, at the end of each arm, and these pins work in or through holes *h*, at or near the corners of the bottom of the die.

The plate or spider D is designed to discharge the finished pad from the female die, said plate or spider being operated and pins *g* forced upward through the holes *h* by means of a treadle, E. (See fig. 2.)

F is the male die, which corresponds in shape and size to the female die, the former, when fully down, fitting within the latter. This male die works within or between upright guides *i i* attached to the base A, and it is connected by a strap, G, with a pulley, H, which is placed loosely on a driving-shaft, I, the latter having its bearings, *j*, on a cross-plate or frame, J, which is secured to the upper ends of the uprights K of the guides *i i* of the male die F.

On one end of the driving-shaft I there is keyed a ratchet, L, into which a pawl, M, catches. This pawl and ratchet prevent the casual dropping of the male die F in the event of the breaking or giving way of the driving-belt, or from any other cause.

N is a sleeve placed on the driving-shaft I, so that it may slide thereon in a direction longitudinal with the shaft, but still always turn with the latter. The well-known "feather and groove" may be employed to effect this result.

On the end of the sleeve N nearest the pulley H, there are made ratchet-teeth *k*, which, when the male die F is being raised, engage with similar teeth *k'* on the pulley H, and the teeth *k*, while said die is being raised, are kept engaged with the teeth *k'* by a spiral spring, O, on the driving-shaft I. (See, more particularly, fig. 1.)

On the sleeve N there is also a cam, P, shown more



clearly in fig. 4. This cam may be described as being composed of two parts, *l l'*, which parts are about of equal length, the length of the entire cam being rather more than one-third the circumference of the portion of the sleeve N on which it is placed or secured.

The front part, *l*, of the cam, is a portion of a spiral or helical thread, or it may be described as a portion of a ring having its side nearest the pulley H bevelled off from the part *l'*, gradually diminishing in thickness, and terminating in a feather or knife-edge.

The rear part, *l'*, is of equal thickness throughout, and is part of a ring whose axis is parallel or in the same plane with the axis of the driving-shaft I. This cam, P, works in a notch or recess, *n*, in the cross-frame J, and the notch and cam, in connection with the spring O, perform an important function, to wit, under a continuous rotation of the driving-shaft I, they cause the male die to rise to the necessary height, and liberate it at the proper time, so that it may descend, the cam, in consequence of working in the notch or recess, moving the sleeve on the driving-shaft and disengaging the two sets of teeth *k k'* from each other at the proper time to liberate the pulley H and allow the male die to descend, the spring O, at the time desired, causing the teeth *k k'* to engage with each other so that the male die may ascend.

Q is a hand-lever, fitted on the cross-frame J, and engaged at one end with the sleeve N, for the purpose of enabling the operator or attendant to disengage the sleeve N from the pulley H at will, and allow the male die to descend.

To the periphery of the pulley H there is attached a cross-bar, which projects a trifle beyond each side of the pulley, as shown at *o o*, fig. 2, to form stops.

These stops are at such points on the pulley that they will, when the pulley is liberated from the sleeve N, and the male die F consequently allowed to fall, come in contact with buffers *p p* at the under side of the cross-frame J, it being, of course, understood that the pulley H rotates backward on the driving-shaft I when the male die descends.

The stops *o o*, in consequence of coming in contact with the buffers *p p*, which may be of India rubber, leather, or other suitable material, prevent all unnecessary jars or concussions, as well as the binding or wedging of the male within the female die.

The sheet-metal to be operated upon is cut or stamped out into plates of the form shown in fig. 5, and motion being given the driving-shaft I, the plates or blanks, designated by *r*, are placed, one at a time,

on the female die, and each time the male die descends, it forces a plate or blank into the female die, and swages said plate or blank into the desired form. Each time the male die ascends, the pan is taken from the female die, the pan being forced upward out from the female die by depressing the treadle E, and a new blank, *r*, placed on the female die before the male die descends.

It will be seen from the above description that each pan is made entire out of one piece of metal plate, and that the angles or corners of the pan are formed by the surplus metal at the angles or corners being forced into the spaces at the joints *e*, under the force of the descending male die F. This forcing of the surplus metal into said spaces causes the angles or corners of the pan to be sharply and neatly formed, the projecting surplus metal being closely compressed, so that the portion at each corner or angle of the pan, after the latter has been removed from the female die, may be readily bent over against the adjoining side or end of the pan.

I would remark that the pans may be provided with a wire rim at their top edges in the usual way.

I do not claim, broadly, an automatic rising and falling die, irrespective of the mechanism for operating it; but having thus described my invention,

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

1. In combination with a male and female die for swaging sheet-metal plates into pans, each pan being made entire out of one piece, the pulley H and sleeve *n*, provided respectively with the teeth *k k'* to form a clutch, the cam P on the sleeve N, the notch or recess *n* in the cross-frame J, and the spring O, all being constructed and arranged to operate in the manner substantially as and for the purpose specified.

2. Having two opposite sides or cleats *O O* of the female die applied in such a manner that they may be adjusted to vary the width of the spaces at the angles or corners of the female die, when said adjustable cleats are used in combination with a male die, F, arranged to operate (rise and fall) automatically, substantially as set forth.

3. The stops *o o*, on the pulley H, in combination with the buffers *p p*, substantially as set forth.

G. S. PECK.

Witnesses:

ASA DOUGLASS,  
H. E. SHIPMAN.