JOHN DANE, Jr.

Machines for Making Pans.

No. 124,938. Patented March 26, 1872.

Fig. 1.

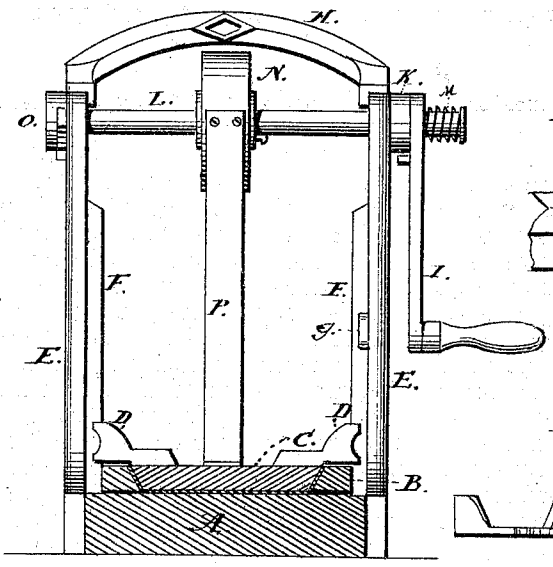


Fig. 7.

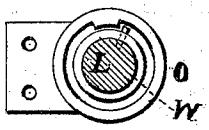


Fig. 8.

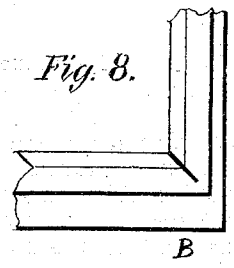


Fig. 5.

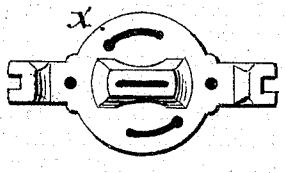


Fig. 6.

Fig. 2.

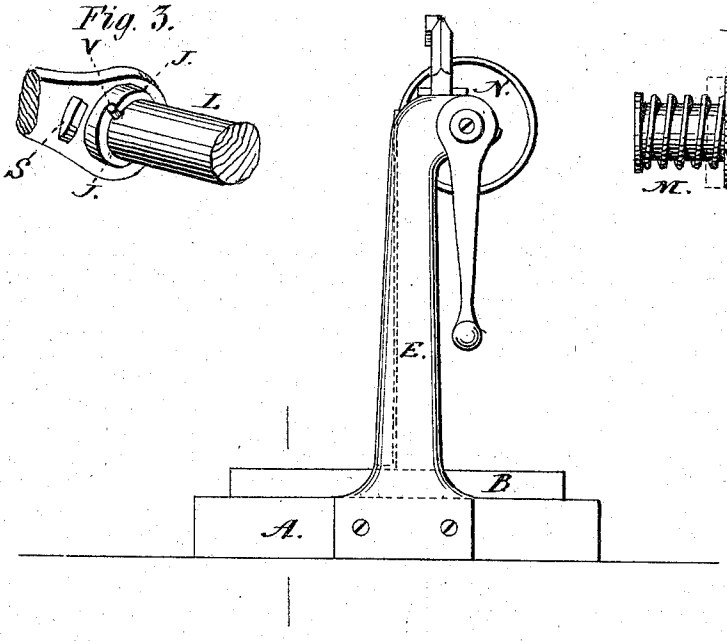
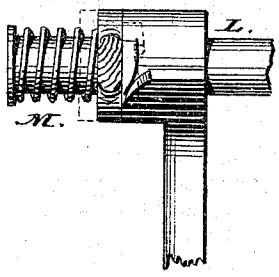


Fig. 3.

Fig. 4.



Witnesses.

Jno. W. Keller

Edw. H. Donn

Inventor.

Jno. Dane Jr.

124,938

UNITED STATES PATENT OFFICE.

JOHN DANE, JR., OF NEWARK, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR MAKING PANS.

Specification forming part of Letters Patent No. 124,933, dated March 26, 1872.

To all whom it may concern:

Be it known that I, JOHN DANE, Jr., of the city of Newark, county of Essex and State of New Jersey, have invented new and useful Improvements in Automatic Drop-Presses or Machines for Making Sheet-Metal Pans; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification.

Figure 1 represents the automatic drop or machine for making sheet-metal pans.

A represents the bed of the machine; B, the die; C, the male die; D, guides; E E, uprights; F F, the slides; *g*, catch or stop; H, the brace; I, crank; S, inclines for the throw-off; K, shell to guide crank and cover, catch and pin; L, shaft; M, spring; N, pulley; O, box forming bumper-seat and cover to the adjustable collar acting as bumper; P, belt; J, catch; X, detachable cross-head; W, adjustable collar; V, clutch-pin.

To enable others skilled in the art to make and use my invention I will describe its construction.

The bed, uprights, brace, crank, and most of the details, with the exception of the shaft, are made of cast-iron. The dies, when used for forming sheet-metal pans and similar articles, may be made of the same materials, although not essential, as any of the known metals usually used for dies may be adopted. The shaft is made of wrought-iron or steel. To describe more in detail, the bed is made flat, sufficiently ribbed on the under side to stiffen and strengthen the same, and for surface to secure the uprights to, leaving the casting about one-half inch in thickness. The top is planed for an even surface for the dies to rest upon. The uprights are offset for the bearings of the shaft, that the face of the pulley may be in line with center of the die. The slides on the uprights are planed for the guides on the dies to traverse upon. The upright on the right of the machine has a rim or shell cast around the bearing to cover that portion of the crank or pulley that forms the catch which works inside of the same. This shell also covers the pin, which is provided with a friction-roller secured to the shaft. On the outside of this shell is an elevation forming an incline with a corresponding one on the crank on the same diameter of circle; these form the "let-off." On the left-hand upright, on the outside, and over the bearing or journal of the shaft, is attached a circular or round box, with a lug or rib extending from the rim inside toward the center, and of sufficient length to form an attachment for a piece of rubber of suitable thickness, against which a stud or pin strikes, which is attached to the shaft; this forms a bumper, to prevent a recoil of the wheel and shaft greater than is required to allow the male die to go to its position when down. The bridge or brace on the top is to prevent the springing in of the uprights, and it is secured in position by screws. The diameter of the shaft should be in proportion to the size of the drop or machine, and of sufficient length to extend through the bearings in the uprights to receive the spiral spring, crank, and pin, which is driven firmly into the shaft on the right-hand side, with an adjustable collar, with a screw serving to adjust the same, and acting as a bumper. The above-mentioned pin, which is driven into the shaft, is surrounded by a quill or friction-roller secured in position by heading the pin; this is to relieve the catch on the crank from the amount of friction that would be incurred on a stationary pin. The pulley should be in diameter sufficient to raise the drop or cross-head to the desired height with less than one revolution of the same. To this should be attached the strap or belt, the opposite end being secured to the drop. The female die may be secured to the bed by screws, as in the usual manner. The detachable cross-head X may be of cast-iron, or any suitable metal, so formed that any die that will pass between the uprights may be readily attached and adjusted. It is of sufficient length to fill the width of the space between uprights with grooves corresponding to and fitting the slides on the same. On the lower side of the cross-head is a circular base of a suitable diameter and thickness, containing two circular slots opposite each other, and near the outer edge, and one hole in the center; these are for attaching and securing the dies by means of screws or keys into position. Above this, and forming a part of the same, is a bridge, so constructed that the top of the same may be nearly parallel with the top of the ears or guides. Through the top of this is a narrow slot or hole

for the end of the belt to pass through, where it may be secured on the under side, and then be drawn up into the shell, where it is firmly held by pins. The elevation of the bridge on a level with the tops of the ears or guides, is for the purpose of giving an even balance to the prop-piece or die, that it may rise and fall without dragging. When working, and connected with strap to pulley, by elevating the bridge as shown a free scope is given to operate screws that pass through the base into the dies to secure them into position. The slots in the circular base are enlarged at one end furthest from each other to facilitate in attaching and detaching the dies. Screws are secured in the dies in distance from center corresponding with the slots, the heads of which, on attaching or detaching, may pass through the enlargement of the slots and be turned or swung to the right or left, as the arrangement of the slot requires, when on a slight turn of the screws the die may be secured or released as desired. The center hole is used for very small dies.

The object of my invention is to construct an automatic drop-press for forming sheet-metal pans, similar articles, and jewelry in the most simple and effective manner, avoiding multiplication of parts, and so arranging the same that the amount of weight usual in similar machines may be materially reduced. The arrangement of the clutch on the crank, working in connection with a friction-roller, secured to the shaft with an incline on the crank corresponding with a similar one on the journal-box, forming a part of the upright, enables me to gather at a point (on the outside of the upright) at the end of the shaft, the combination of devices to perform the automatic duties desired. By this I am enabled to use a shaft much less in diameter than when these duties are performed by devices near the center of the shaft; it also enables me to dispense with a bar, support, and sleeve, as adopted in the invention of G. S. Peck, patented October, 1869. The adjustable collar, acting as a bumper, enables me to use a common pulley, or one without projections. By distributing the details at each end, as well as the middle of the shaft, I avoid much friction and a less liability of springing the same. The arrangement of the inclines on the journal-box and crank with the catch on the latter enables me to save labor and material in the construction. A clutch with many teeth is liable to engage with the pulley or its connection in rapid revolutions of the crank, thereby breaking or preventing a complete fall of the male die. This objection is removed by adopting a catch, as shown in drawing.

Having thus described my invention, I claim—

1. A sliding crank, I, or pulley located on the shaft outside of the upright E, provided with the clutch J and the incline S, in combination with the stationary incline on the journal-box, as and for the purpose set forth.

2. A clutch-pin, V, on the shaft L, provided with a friction-roller, as and for the purpose set forth.

3. The bumper-box O, in combination with the pin or screw, serving the double purpose of a stop and of a fastening of the adjustable collar, as and for the purpose set forth.

4. The sliding cross-head X, provided with a flanged face with circular slots and an elevated slotted bridge, as and for the purpose set forth.

JOHN DANE, JR.

Witnesses:

EDM. F. BROWN,

J. FRANKLIN REIGART.