S. B. Fitch,

2 Sheets, Sheet 1.

Shearing Metals.

No. 107,351. Patented Sept. 13, 1870.

Fig. 1.

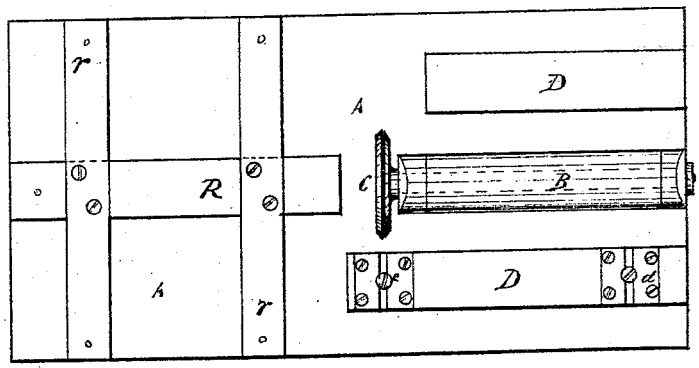


Fig. 2.

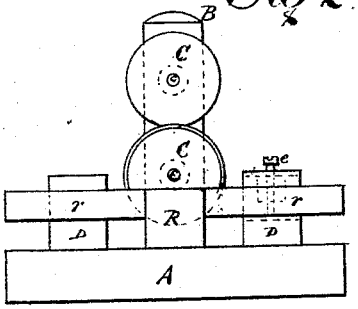
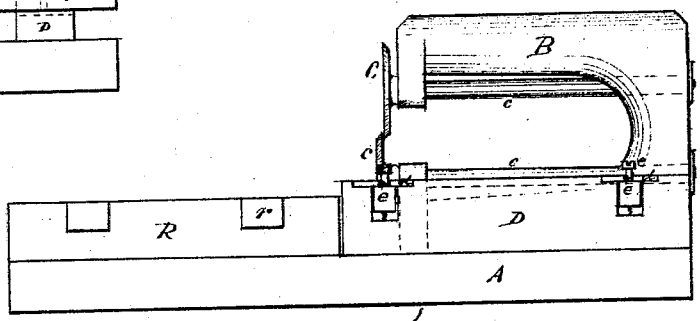


Fig. 3.



Witnesses.

J. H. Phillips

Geo. C. Lambright

Inventor

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Attys

S. B. Fitch,

2. Sheets, Sheets. 2.

Shearing Metals.

No. 107,351. Patented Sept. 13. 1870.

Fig. 4

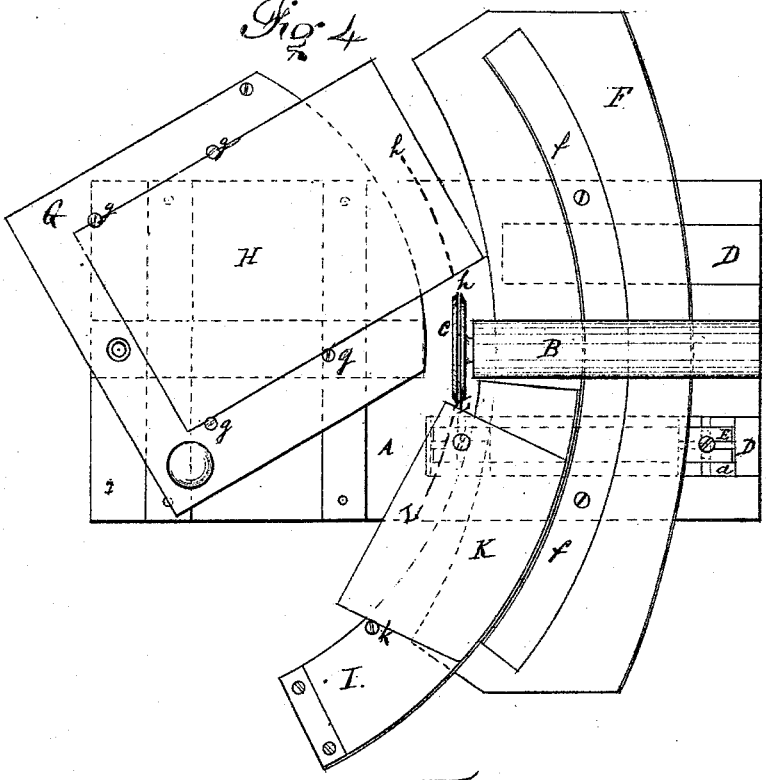
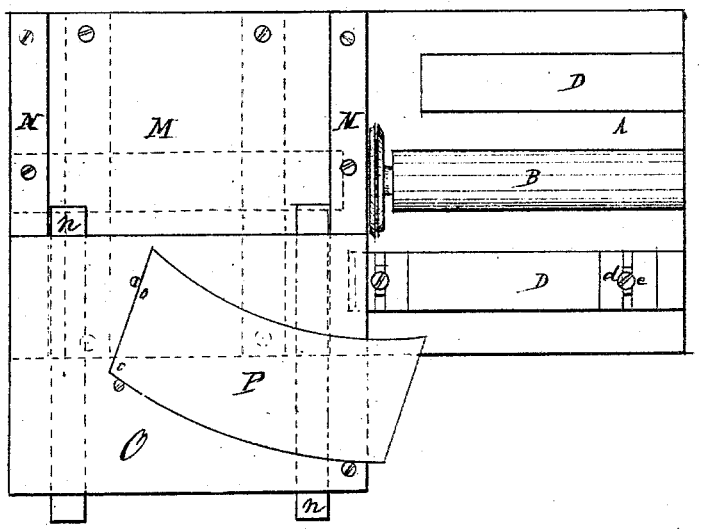


Fig. 5



UNITED STATES PATENT OFFICE.

SEYMOUR B. FITCH, OF WALTON, NEW YORK.

IMPROVED SHEET-METAL-CUTTING MACHINE.

Specification forming part of Letters Patent No. **107,351**, dated September 13, 1870.

To all whom it may concern:

Be it known that I, SEYMOUR B. FITCH, of Walton, in the county of Delaware and State of New York, have invented a new and Improved Machine for Cutting Round Flaring Dishes; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a top view of the machine; Fig. 2, an end elevation of the same; Fig. 3, a side elevation, and Fig. 4 a top view, of the machine with moving table in position, having on it a piece of metal in readiness to pass through the knives; also a bed-plate, F, having a gage-piece, *f*, for the runner I to be guided against, the said runner being in position, with a piece of metal in readiness to pass through the knives. Fig. 5 represents a top view of the machine with the stationary table M in position, and the slide O having on it a piece of metal in readiness to pass through the knives.

In all the figures similar letters of reference indicate corresponding parts.

A represents the bed-plate or base of the machine; B, overhanging and returning arms, which carry the upper and lower circular knives; C, circular knives, upper and lower; *c*, shaft to circular knives; D, rest-blocks for giving a sufficient height to the under side of bed-plate F; *d*, slides attached to the rest-blocks, for the purpose of adjusting bed-plate F; E, slides fastened to the bed-plate F, which pass at right angles to those in the rest-blocks; *e*, set-screws and nuts for adjusting the bed-plate F in its position; F, bed-plate passing through between the upper and lower arms, B; *f*, guide of proper radius attached to bed-plate F; G, moving table fastened by a pivot to rest-block; *g*, screws in moving table, to hold metal in position; H, sheet of metal in position on table G; *h*, dotted line denoting cut made in metallic plate when passed through the knives; I, runner working against the gage-piece *f* on bed-plate F; K, metal in position on runner I; *k*, screw in runner I, to hold metal in position; L, dotted line denoting cut made in metal when passed through the knives; M, bed of fixed table; N, outside guides on fixed table; *n*, inside guides to sliding table O; O, sliding table; *o*, guide-screws on sliding table; P, metallic plate in position on sliding table before being passed through the knives; R, rest-block, having projecting arms; *r r*, arms on rest-block.

The nature of my invention consists in a machine having several combinations, for the purpose of cutting the segments of metal required to form round flaring dishes, such as pans, basins, &c.

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

I construct a bed-plate or base of suitable material, and raise upon it an overhanging and returning arm constructed as a **U**, laid upon its side, and at the open end suitable attachments to carry the circular knives and their shafts, these knives being so adjusted that they are one above the other, and slightly overlapping each other, thereby forming shears. On either side of these arms are rest-blocks, for giving sufficient height to the bed-plate F and runner I, that the metal in position upon the runner should come in contact with the knives at equal distances from the center of each knife, this determining the height of the block and thickness of the bed-plate and runner.

To adjust the bed-plate F, one of the blocks is provided with slides *d*, nut and set-screw *e*, immediately in front of the overhanging arms which carry the knives, and upon the same center line a rest-block, R, having projecting arms *r*, should be placed, the height of which is determined by the thickness of the pieces to be placed upon it, and governed by the same conditions as those in the case of the rest-blocks D.

The construction of the moving table is to have, of suitable material, an oblong block, rounded off as shown. This round is struck in accordance to the sweep that is to be given by the radius that is required in cutting the metal. Screws are placed in the top of this block to act as guides and to hold the metal while being cut off into proper lengths. The construction of this sliding table O and the fixture on which it works: A firm piece is constructed, with two guides on the outer edge. These guides will be at right angles to the circular knives when in position on machine. The slide then has guides on its under side, and which will run between the outer guides,

causing the table to work directly in front of the knives. Screws are provided in this upper table, to act as guides to the metal being cut.

The construction of the bed-plate F is a semicircular piece, of suitable material, and as a runner has to describe a part of a circle. A guide is set in the bed-plate, of the radius required, and the runner running against it describes the necessary circle. The runner is provided with an edge or flange for the metal to rest against, and both runner and guide are protected from wear by suitable edges.

In operation, I first adjust the pivot on which the moving table turns, that it will sweep the desired circle; then place my metal plate on the table, it being held in position by the screws *g*, and allowing it to merely round the end of the sheet the first cut, sufficient screws being provided, in accordance with the number of sections the metal will allow. This operation cuts the top off the first section. Then move the metal up and secure it in the next set of screws, which are already in the board under the metal. Then propel it through the shears. This cuts off the first section and top of the second. Continuing this operation for as many sections as the sheet will make, this finishes as far as this part of the machine can do, leaving the last section as shown Fig. 4, letter K. Then remove this table and place the straight sliding table in position, securing it to the arms *r;* place the section on the sliding table at the desired angle to correspond with lines radiating from the center of the circle, holding it in position by screws *g*, as in the first operation. The sliding table is passed in front of the knives, and the metallic section cut off. The section is then turned over end for end, and again cut. This completes the section all but cutting out the piece at the bottom. The bed-plate F, which is securely fastened in its position on the other side of the knives, is then used to complete. A gage-piece of the same circle as the outside of the section, and against which the runner slides, securely holds the metallic section in position, and the bottom is cut off.

Having thus fully described the nature and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the base-plate A, arms B, circular knives C, and their shafts *c c*, rest-block D, bed-plate F, slide *d*, and set-screws *e*, when constructed, arranged, and operating in the manner and for the purpose herein set forth and described.

2. In combination with the above, gage *f* and runner I, when constructed, arranged, and operating as herein described.

3. The improved machine herein described, consisting of the several parts named in the foregoing clauses of claim, the bed M, and alternative devices M and G, and table O, as specified.

In testimony that I claim the foregoing machine I have hereunto set my hand this 14th day of February, 1870.

S. B. FITCH.

Witnesses:

NATHAN C. WOOD,

M. W. MARVIN.