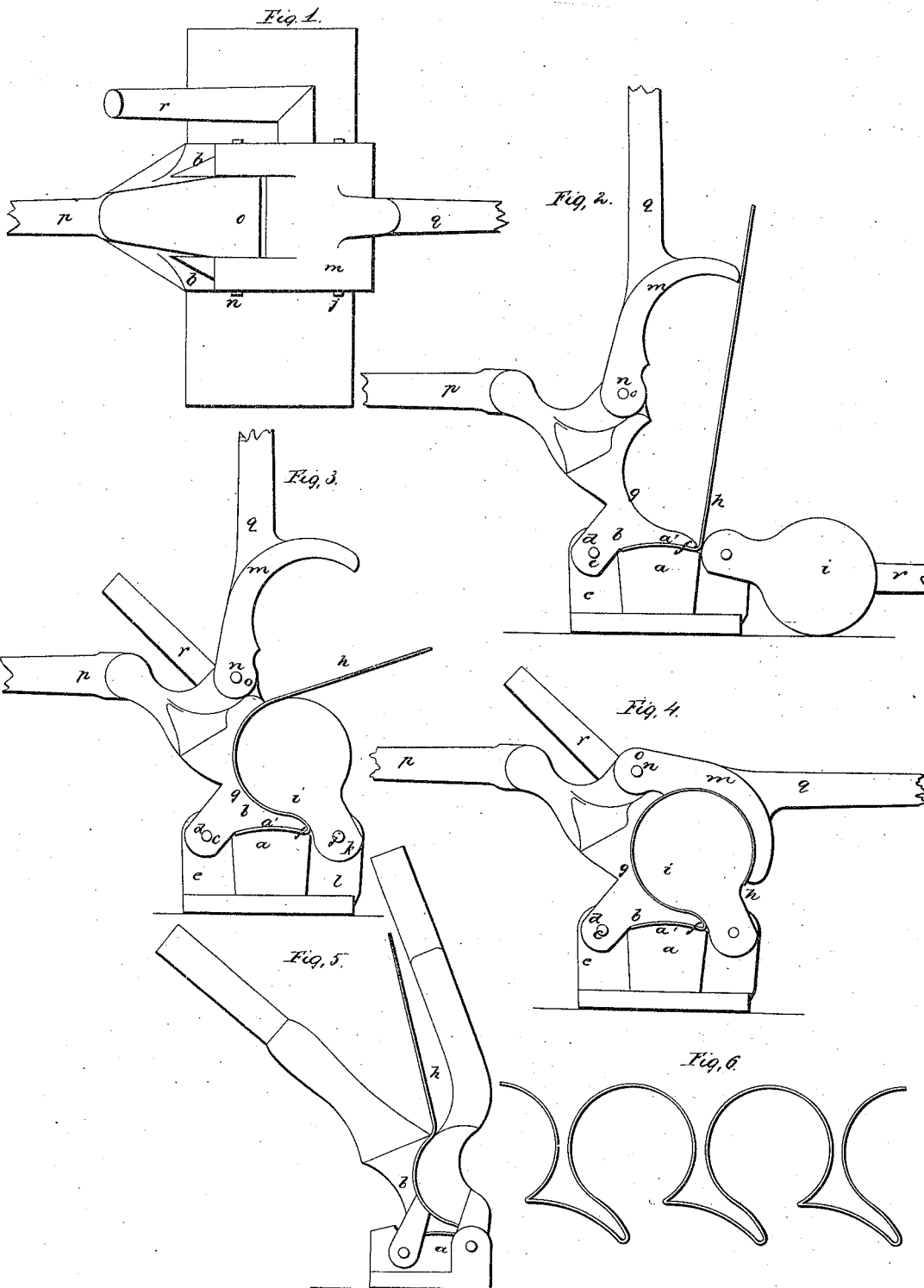


W. CUNDELL.
 BENDING METAL GUARDS FOR CAP SPINNERS.
 No. 4,841. PATENTED NOV. 10, 1846.



UNITED STATES PATENT OFFICE.

WM. CUNDELL, OF PATERSON, NEW JERSEY.

MACHINERY FOR MAKING GUARDS FOR CAP-SPINNERS.

Specification of Letters Patent No. 4,841, dated November 10, 1846.

To all whom it may concern:

Be it known that I, WM. CUNDELL, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and useful Machine for Bending and Forming the Sheet-Metal Guards Used in Cap-Spinners, and that the following is a full, clear, and exact description of the principle or character which distinguishes my invention from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of the machine; Figs. 2, 3, and 4, vertical elevations of the same representing the position of the parts in three different stages of the work; Fig. 5 represents a modification of the machine for producing the work in part, and Fig. 6, a series of the guards completed.

The same letters indicate like parts in all the figures.

The guards used in the cap spinners for protecting the different threads are tin tubes, one for each spindle, and all connected together, each tube however not being quite complete, but partly opened in front for the introduction of the thread, the piece of tin composing each tube being bent so as to form the connection with the next by soldering or other means. My invention consists in the arrangement of mechanical means for bending these cylinder guards, and the parts by which they are united, this being effected by gripping and bending the end of a strip of tin (to form that part of each which makes the connection with the one next it,) on a permanent die by means of a jointed bender, the faces of which correspond, then bending it over the curved edge of the bender, into a semi-cylindrical cavity in the upper part of this bender, by a cylindrical die jointed to the stand on the opposite side of the permanent die to which the bender is jointed, and then completing the cylindrical bend over the other portion of the cylindrical die by a hollow segmental former jointed to the bender above the semi-cylindrical cavity thereof.

In the accompanying drawings (a) repre-

sents the permanent die the face of which is curved to form the bend of the part (a') of each guard, and to the surface of this is fitted the face of the bender (b), which turns on a fulcrum pin (c) that passes through holes in the ears (d, d) thereof and a standard (e). The edge (f) of this bender is gradually curved to run into and connect with the semi-cylindrical cavity (g), so that after the strip of tin (h) has been bent and gripped on the die by the bender (b), as represented in Fig. 2, the semi-cylindrical cavity (g) becomes the matrix in which part of the cylindrical form is to be given to the tin by means of the cylindrical die (i) which forces the tin into this matrix, as represented in Fig. 3. This cylindrical die (i) turns on a fulcrum pin (j) that passes through a hole in the two ears (k, k) projecting therefrom and the standard (l). The bending is then completed over the cylindrical die (i), which then becomes the bed by means of the hollow segmental former (m), as represented in Fig. 4, the inner face of which is the segment of a hollow cylinder, and when closed up becomes a continuation of the cavity (g) of the bender, it being jointed thereto by a pin (n) that passes through ears (o, o, o) projecting from them, the junctions of the two when closed up being properly adapted to each other. Each of the operating parts is provided with a lever by which it is operated, that of the bender being indicated by the letter (p), that of the segmental former by the letter (q), and that of the cylindrical die by the letter (r), this latter projecting from the end of the die, as these guards do not constitute an entire cylinder, it admits of projecting the ears on which it turns from that portion of its cylindrical surface which lies, when all the parts are closed up, between the edge of the bender and the end of the hollow segmental former.

It will be obvious from the foregoing that the result can be obtained in part by dispensing with the segmental former as represented in Fig. 5, the completion of the cylindrical bend being effected by other means, but the operation would be less perfect, and I only make this allusion to show that parts

of my machine may be dispensed with and still invade the principle, in part, of my invention.

What I claim as my invention and desire to secure by Letters Patent is—

1. The combination of first the permanent die, the bender, and the cylindrical die, as described.

2. The permanent die, the bender, the cylindrical die, and the segmental former, as herein described. 10

WM. CUNDELL.

Witnesses:

DAVID BURNETT,
JAS. D. LOCKWOOD.