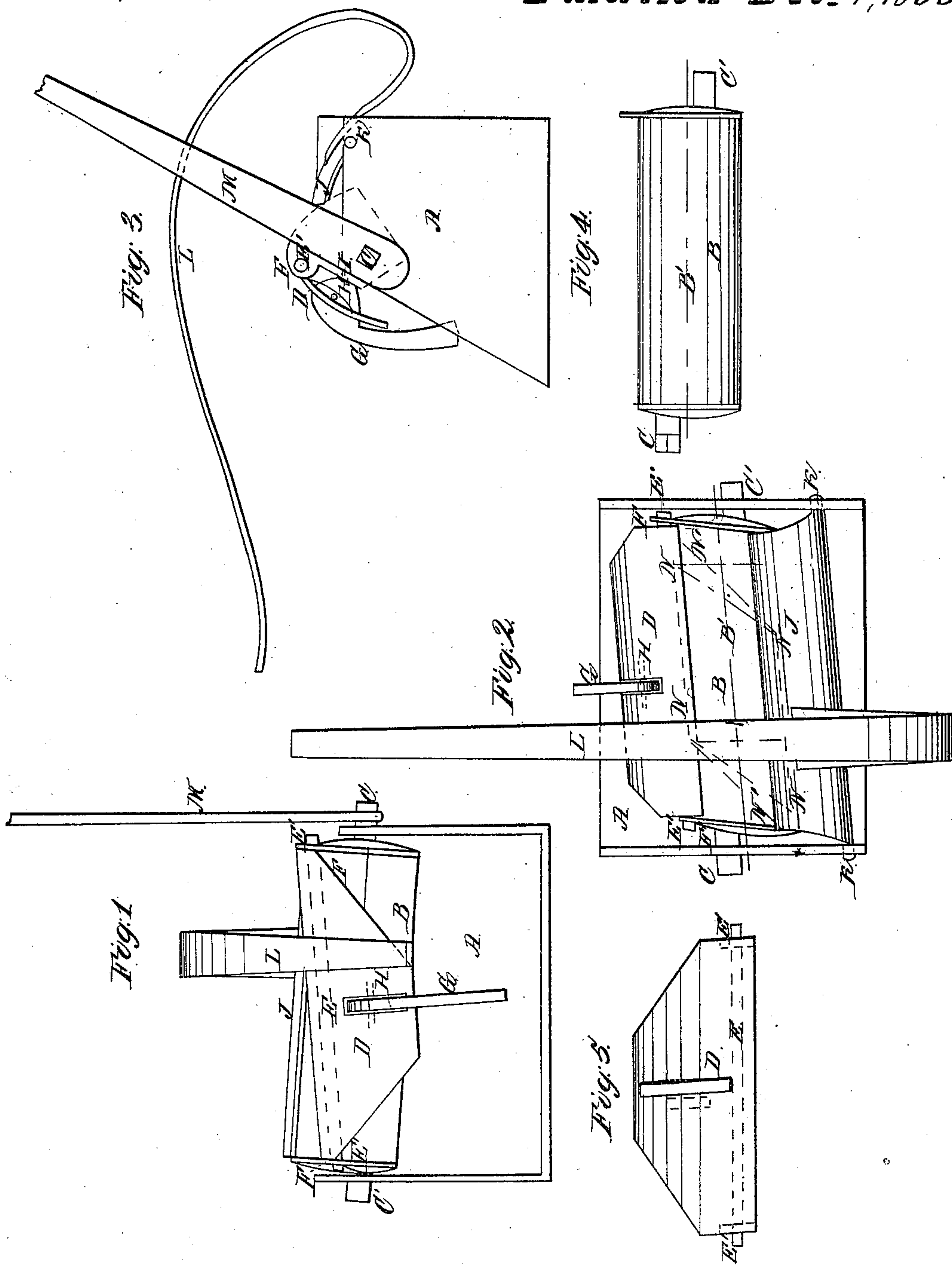


T. A. Chandler,

Making Plow-Irons,

N^o 13,865.

Patented Dec. 4, 1855.



UNITED STATES PATENT OFFICE.

THOMAS A. CHANDLER, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN MAKING PLOW MOLD-BOARDS.

Specification forming part of Letters Patent No. 13,865, dated December 4, 1855.

To all whom it may concern:

Be it known that I, THOMAS A. CHANDLER, of Rockford, in the county of Winnebago and State of Illinois, have invented a new and Improved Machine for Bending or Forming Cast-Steel Mold-Boards for Plows; and I do hereby declare that the following is full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a front view of the machine; Fig. 2, a top view, and Fig. 3 a side view. The other views are detached sections, which will be referred to in description.

Like letters designate like parts in the several views.

By the peculiar construction and operation of my machine cast-steel mold-boards for plows may be so formed as to receive any desirable curve, according to the length or size of the required mold-boards.

A, Figs. 1, 2, and 3, represents the frame or stand of the machine; B, an eccentric forming-roller, a detached view of which is seen in Fig. 4. To this roller is secured the journals C C', upon which it moves in its bearings or boxes.

B' represents the central line of the roller, and by the positions of the journals C C' the roller becomes eccentric at both ends, and opposite to each other, as the journal C is on one side of the center and the journal C' on the opposite side of the center. By the relative position of the two journals the end of the roller at C describes a greater circle than the end at C'. Connected to the roller is the curved clamp-plate D. (Fig. 5 represents a detached section of the same.) This clamp-plate has the shaft E secured to it, the ends of which form the journals E' E', which work in bearings in the end plates F F'. The journals E' E' are parallel to the journals C C'. The eccentric or cam lever G is connected to the clamp-plate D by the pin-joint at H, Figs. 1, 2, and 3. The cam end of the lever presses against the roller B, as seen at I, Fig. 3. By this arrangement of the lever G with the clamp-plate D the clamp-plate is operated in securing the steel plate to the roller and relinquishing it in the process of being formed into a mold-board.

The press-plate J moves upon the journals K K, Figs. 2 and 3. These journals and the

edge of the plate are so arranged as to be parallel to the face of the roller B and its journals.

L is a lever secured to the press-plate J.

M is a lever attached to the journal C by the eccentric forming-roller by which it is turned, as may be required, in forming the mold-boards.

The steel plates are of the usual thickness, and are first heated to the required degree. The plate is then placed on the roller B, the edge of which is passed under the clamp D and held by the action of the lever G on the plate D. The press-plate J is then pressed on the heated plate by the lever L. Then, by the power being applied to the lever M, turning the roller backward and forward, according to the width of the plate being formed, it is bent or formed into a cast-steel mold-board.

The position assumed by the steel plate while being formed in the machine is indicated by the red lines N, Fig. 2, and when a longer curve is required the same sized plate may be turned to N', and when a short curved board is required of the same sized plate it is placed as indicated by the lines N' N'. So with the same sized plate various-formed curves may be given to them according to their position upon the roller B, as the nature of the case may require.

One end of the mold-board is of a longer curve than the other, owing to the peculiar position and eccentric movement of the roller, as one describes a larger circle than the other. This gives the mold-board a peculiar advantage in practical use. This curve may also be varied according to its position on the roller—that is, the curve would be increased at the end C and decreased toward C'. The heel or back end of the mold-board should be of a longer curve than at the point for the purpose of passing through the soil and turning the furrow with ease and facility. This form the mold-board attains in the machine, as before described.

The old method of forming mold-boards is to place the heated plate on a cast-iron block fashioned to the shape of the desired mold-board, to bind it in place by a circular clamp and then hammer it to the form of the block. From time to time the clamp is taken off and the pattern applied in order to see whether it fits. Often it is necessary to heat the plate a

second time in the forge. When taken from the block, the mold-board is hammer-marked and must be ground upon a grindstone to efface these impressions, after which it is applied to the emery-wheel to receive the necessary polish. In some soils a mold-board will not work unless it is of cast-steel, even, smooth, and polished. In the old way from half an hour to an hour is requisite to form one mold-board and no two of them can be alike.

In the use of my machine twenty or thirty plates are heated at a time in an oven and but one minute is required to bind them in the machine, and when a mold-board has

passed through the machine it is only necessary to apply it to an emery-wheel to make it perfect.

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

The forming eccentric roller B, clamp-plate D, with the cam-lever G and the press-plate J, when constructed, arranged, and operated substantially in the manner and for the purpose herein set forth and described.

THOS. A. CHANDLER.

Witnesses:

W. H. BURRIDGE,
JEHU BRAINERD.