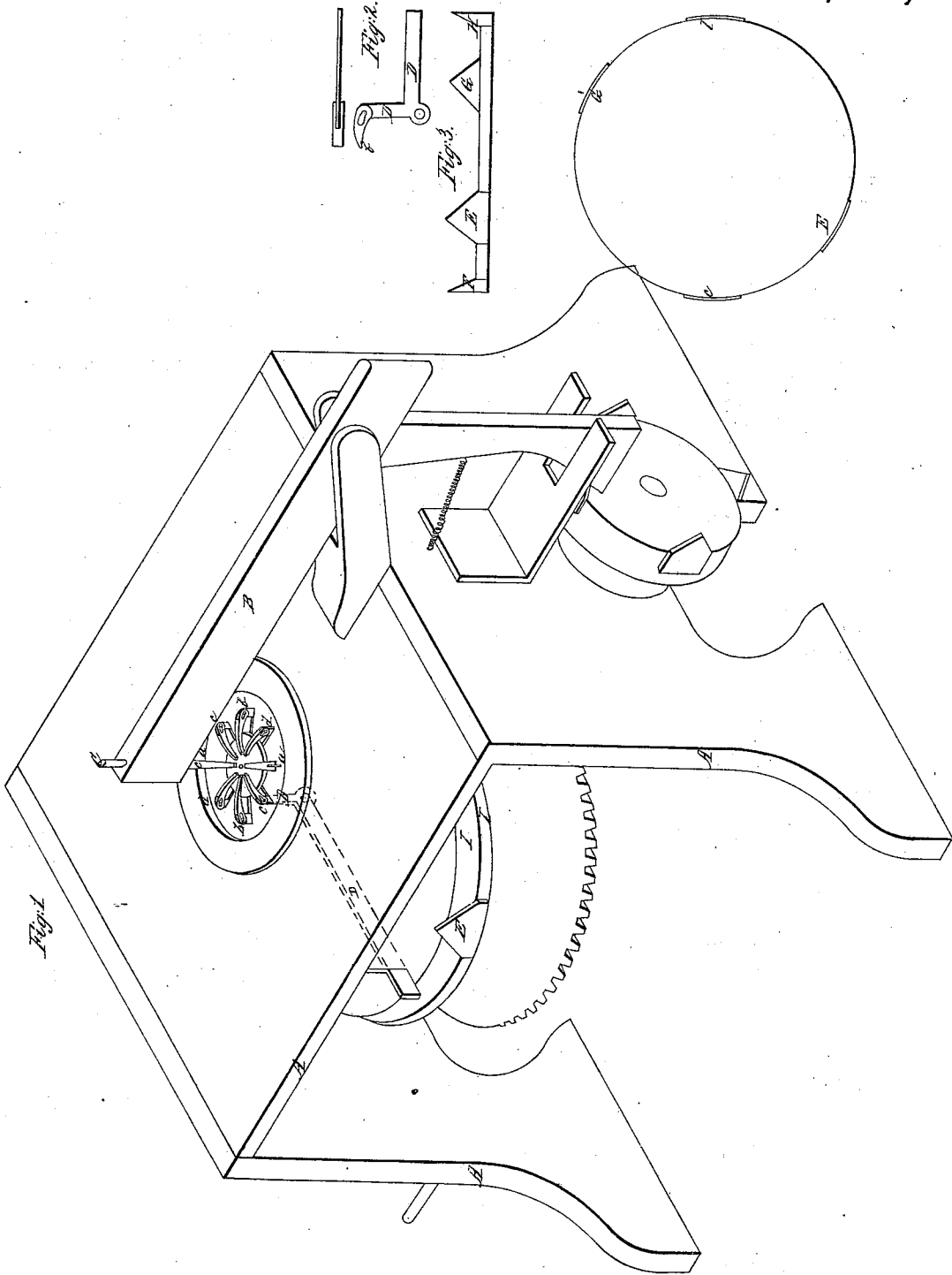


J. C. Brown,

Making Ornamental Chains,

Patented Nov. 29, 1859.

N^o 26,247.



UNITED STATES PATENT OFFICE.

JOHN CALVIN BROWN, OF PROVIDENCE, RHODE ISLAND.

MACHINE FOR MAKING CHAINS.

Specification of Letters Patent No. 26,247, dated November 29, 1859.

To all whom it may concern:

Be it known that I, JOHN CALVIN BROWN, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in Machines for Making Ornamental Chain from Sheet Metal; and I do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is a view of the whole machine. Figs. 2 and 3 are views of some of the parts.

The same parts in the different figures are indicated by the same letters.

In the machines for making chain from sheet metal some device or combination of devices is employed for the purpose of giving an angular motion to the forming guide or tube in which the chain is held and through which it is transmitted, the object of which motion is, so to change the relative positions of the arms of the last link which has been woven into the chain, with the arms of the blank link next to be laid on that the arms of the one shall interlock with the arms of the other when the blank is deposited, and also to enable the same set of bending instruments by which the arms of one link are bent over to operate upon the arms of the next succeeding link although interlocked with the arms of the other.

My invention relates to a method of forming chain without turning each link after it has been placed in position the fractional part of a circle necessary to present the arms of each link to the bending instruments as above described.

In the accompanying drawings A, A represents the table or frame of the machine to which the mechanism is attached.

B, is an arm to which by any of the ordinary means such a motion is given that the punch C, at its extremity shall be made to descend upon the center of the chain and not only clench down each pair of arms as they are successively bent over but also force down the chain the requisite distance to make room for another link.

a a, b, b, c, c, d d represent the bending instruments for the purpose of bending over the arms of the links; these are arranged around the central hole through which the chain as formed descends, equidistant from each other, and are twice as many in number as the link employed has

arms. Each one of these bending instruments is attached to the shorter arm of a bell crank lever D, D' in such a manner that its height above the table can be raised to accommodate stock of different thicknesses. Each bell crank lever works at the angle on a fulcrum pin located at a distance from the central hole corresponding to the length of the bending pick *a, a* or *c, c*. The long arm D of each bell crank lever extends radially outward sufficiently far to obtain a degree of leverage proportionable to the ease with which it is desired that the machine shall work.

The means by which I operate the bending instruments are as follows: I, is a circular disk arranged beneath the long arms of the bell crank levers described having its center coincident with the hole in the table through which the chain passes as it is formed, and capable of revolving in a plane parallel to the face of the table, A, and is so worked by a toothed pinion on the driving shaft that it shall make only one revolution while the shaft is making four. Upon the periphery of this disk I place at right angles to its face four projections or tappets E, F, G, H (Fig. 3) having inclined faces as shown; these tappets extend above the face of the disk so far that in their path of travel they will come in contact with the long arms, D, of the bell cranks which operate the bending instruments causing each of them in succession to ride up the inclined side of each tappet and permitting them to ride down upon the other. These tappets are arranged upon the disk, I, in pairs the tappets of each pair being distant from each other sixty seven and one half degrees and the two pairs being distant from each other one hundred and twelve and one half degrees. The links which are to form the chain having been prepared I insert one in the mouth of the central hole, bending its arms up by hand in the same manner as they would be if the link had been struck by the punch. I then place on the link so bent a second blank with its arms interlocking with the arms of the first. Turning then the crank which operates the driving shaft (having first taken care that the right pair of bending picks shall at the commencement of the operation be brought into action) the two opposite picks *d, d*, are thrown forward and bend down two of the arms of the first link. The two opposite picks *e, e*, situated at

right angles to the two last mentioned are then thrown forward and bend down the other two arms of the first link. The punch C, having descended and struck a blow after each of the pairs of picks have done their work, the second link is necessarily crowded into the mouth of the central hole in the table, A, so far that its arms are bent up nearly at right angles to its body. I then take a third blank and place it with its arms interlocking the arms of the second link, one of the other pairs of picks *a, a* or *b, b*, are then thrown forward and bend down the corresponding arms of the second link and lastly the other pair of picks situated at right angles to the pair last named bend down the other two arms. The punch in the third link to enter the mouth of the hole in the table and bent up the arms as in the case of the preceding link. By placing on a fourth link the operations described in reference to the second link are repeated.

It will be observed that at the extremity

of each of the bending picks there is a square shouldered notch cut on the underside of each, the object of which is to secure a sharp angled bend to the arms instead of the rounded one which is produced by all other chain machines and to overcome the ill appearance of which the chain must be drawn through a die to the injury of the strength of the clench of the links.

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

The circular disk, I, provided with the wedged form projections, E, F, G, H, arranged as described in combination with the bell crank levers D, D' which operate the several bending instruments—such combination operating in the manner substantially as described, for the purposes specified.

Providence, Oct. 26, 1859.

JOHN C. BROWN.

Witnesses:

I. N. MOORE,
JOHN GARTLAND.