

J. S. Palmer.

Button Hook Mach.

N^o 90,681.

Patented Jan. 1, 1869.

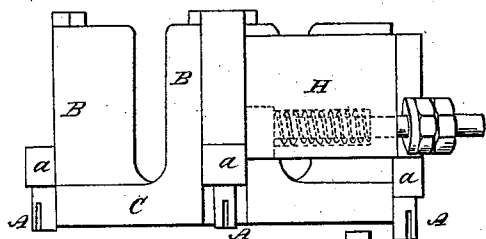


Fig. 1.

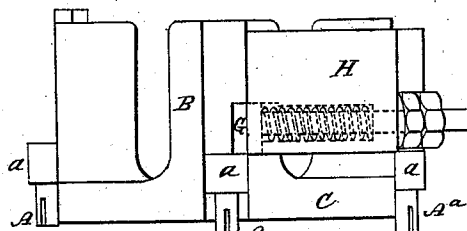


Fig. 2.



Fig. 3.

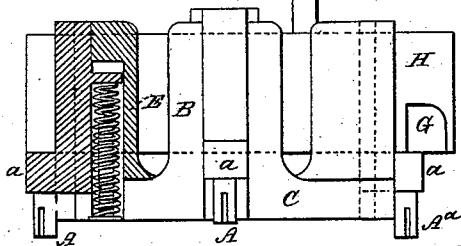


Fig. 3.

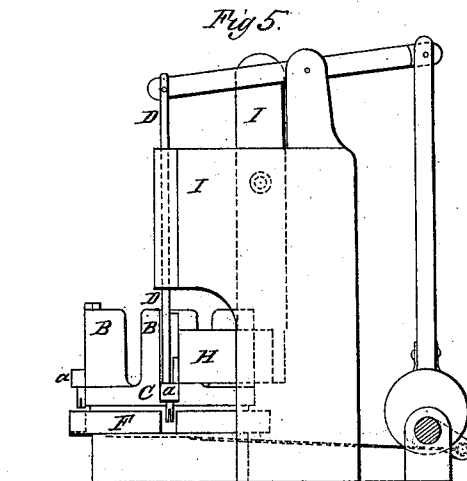


Fig. 5.

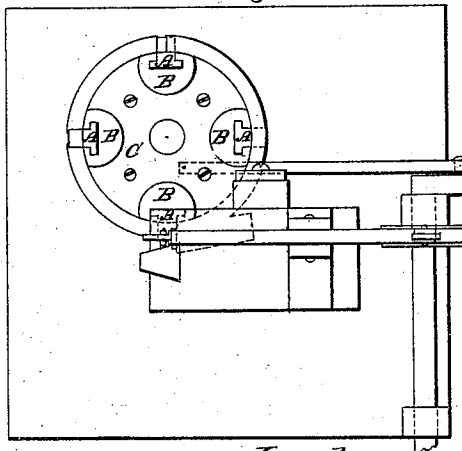


Fig. 6.

Witnesses.
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JOHN S. PALMER, OF PROVIDENCE, RHODE ISLAND.

Letters Patent No. 90,681, dated June 1, 1869.

IMPROVEMENT IN MACHINES FOR MAKING BUTTON-HOOKS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JOHN S. PALMER, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Machine for Making Button-hooks; 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.

Figures 1, 2, 3, and 4, sheet 1, are views, in different positions, of the particular device to which the improvement relates.

Figure 5, sheet 2, is a side elevation of so much of a machine for making button-hooks as is necessary to show the improvement exhibited in figs. 1 to 4 of sheet 1 in its proper relation in the organized machine.

The form of the blank used to make a button-hook, and the successive changes of form which it undergoes, are shown at sketches Nos. 1, 2, 3, and 4, on sheet 2.

The invention herein described is an improvement upon the machine for which Letters Patent were granted to Lauriston Towne, dated February 2, 1869. To the specification accompanying said patent reference is to be had for all particulars of construction not made necessary in describing the present improvement.

Upon referring to the patent above mentioned, it will be found that the mode of operation which the machinery described therein exhibits consists, first, in the employment of proper cutting-devices for cutting, from a strip of sheet-metal, a blank of the required form; secondly, in swaging the end of such blank dome-shaped; thirdly, in presenting the blanks so cut and swaged, in succession, to the gripe of a pair of spring-jaws, corresponding in number to the number of operations, including that of discharging the button-hook when finished, which are to be performed, which spring-jaws occupy, at equal distances apart, four radii of a circular, horizontal, intermittently-revolving disk or table, such table making a pause of rest after each quarter revolution; and, fourthly, in swaging the blank, progressively, into the several forms required to produce the article, by the action of suitable instrumentalities arranged to act upon the blank in successive order.

The present improvement relates to a means for more effectively holding the partially-formed button-hook while the various swagings are being performed upon it, and thereby prevent the liability of the blank being dislodged from the intermittently-revolving plate while it is undergoing any of its changes of form.

In the Towne machine, a single punch or former is employed to strike up the body of the blank, so that its point will stand upright, as represented at sketches 2, 3, 4, sheet 2; and, after such punch has executed its office, reliance is had upon spring-jaws to hold the partially-formed button-hook while the subsequent swaging-instruments are operating upon it.

By my invention, the punch so forming the blank is made to perform the further function of holding the blank during all the subsequent operations; and, to effect this result, there are as many of such punches employed as there are intended operations upon the blank, which punches are independent of the plunger, which causes each, in succession, to perform the bending-function, and are mounted in guides attached to a circular disk, which forms an attachment to the intermittently-revolving disk described in Towne's patent, and partakes of all its motion. Such punches are also made to act as holders, as will presently be described.

A, in the several figures, represents punches of the character above referred to as employed in Towne's machine. Three of its sides are slotted, and these slots receive the prongs of the button-hook, which the face of the punch causes to be bent upward.

Each of these punches is mounted, in suitable guides, in appropriate standards, B, which rise perpendicularly from the circular disk or base-plate C.

Each punch has a shoulder or offset, *a*, projecting its side, which constitutes the means through which the square-faced plunger D, fig. 5, sheet 2, is enabled, when in proper relation with it, to operate the punch, to strike up the prongs, and is also the means by which the same punch is confined in a position to hold the partially-formed button-hook during the subsequent operations.

Each punch is held elevated in its guides by means of a spring, E, fig. 3, suitably arranged for the purpose.

The disk-plate C, with its series of punches A, is attached to and forms a part of the intermittently-revolving disk-plate described in Towne's patent, as seen at fig. 5, sheet 2.

Let it be supposed, now, that a blank has been properly presented to the machine, and that it is about to be bent into the form shown at sketch No. 2. The descending plunger D, fig. 5, will strike against the shoulder *a* of that one of the punches in the series which at the moment is underneath it, and will effect the swaging of the blank substantially in the same manner as if the punch and driving-plunger were one device. Upon the rising of the plunger D, the disk-plate F, fig. 5, with its appendages, will commence to make its first partial revolution. The punch A, attempting to follow the plunger, will have its shoulder *a* caught by a spring-latch, G, which is set in the end of a guide-plate, H, figs. 2 and 4, which is semicircular in form, and is held stationary by a standard, I, fig. 3, bolted to the head F, in which the plunger D is mounted.

The office of this guide-plate is to hold down the punches, so that the button-hook so partly formed shall be confined in a position, relatively to the under disk-plate F, that will enable the swaging-devices to be brought, in the further operation of the machine.

into action, to complete the button-hook, to operate upon the blank without the risk of dislodging it, and so cause such punches to perform the additional function of holders for the blank above indicated.

Obviously, during all the time that any punch is travelling through the arc which the guide-plate H measures, it will be held by means of such plate, as seen at A², figs. 1, 2, 3, in a position that will accomplish the purpose of holding the button hook, as above indicated, and that it will be released, and allowed to spring back to its normal position as soon as the disk-plate F has commenced to travel through its last quadrant of movement.

The apparatus above described, in addition to the advantage in holding the blank which it secures, simplifies the machine, by enabling the upper "former," used, to assist in giving the final bend to the button-hook, in Towne's machine, to be dispensed with.

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

1. In combination with the intermittently-revolving table of a machine for forming button-hooks, and like articles, the employment of a supplemental disk-plate, C, carrying a series of punches, A, arranged to operate substantially as described.

2. The combination of the punch-bearing disk-plate C and the concentric guide-plate H, or its equivalent, substantially as described, for the purposes specified.

3. The combination and arrangement of the disk-plate C, provided with a series of punches, as described, the intermittently-revolving table F, the plunger D, and the guide-plate H, substantially as herein set forth.

Witnesses:

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