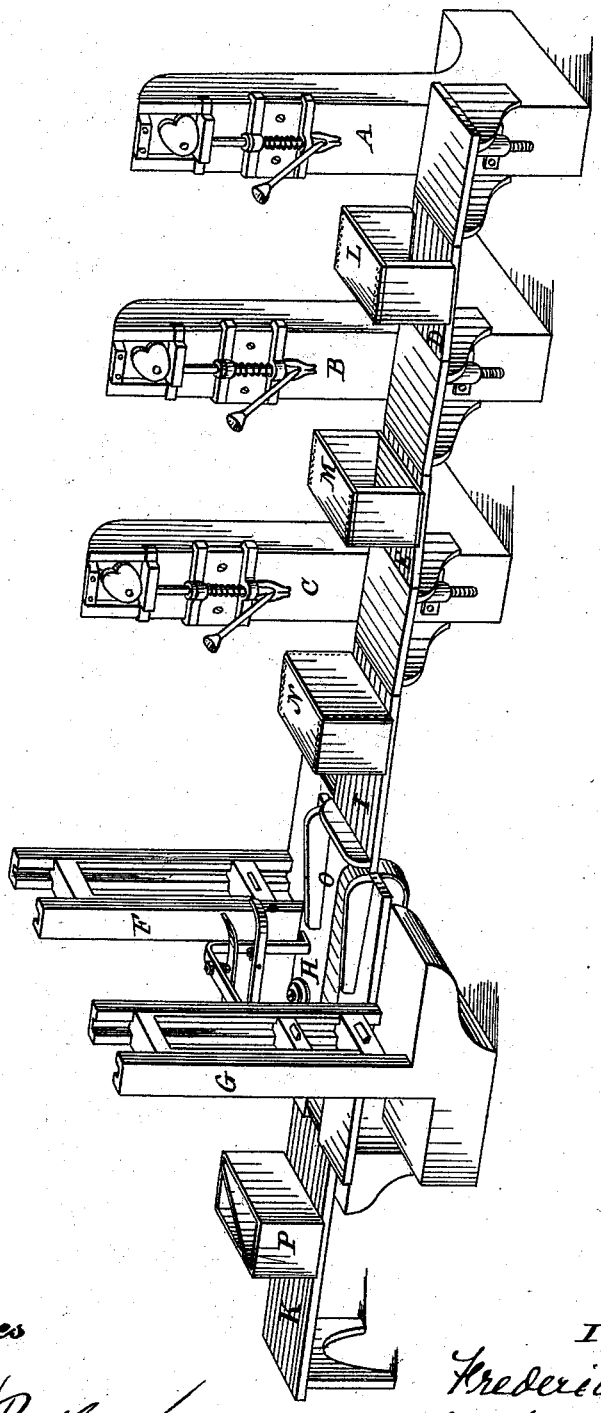
F. MYERS.

Manufacture of Packing-Boxes.

No. 203,486. Patented May 7, 1878.



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UNITED STATES PATENT OFFICE.

FREDERICK MYERS, OF NEW YORK, N. Y.

IMPROVEMENT IN MANUFACTURE OF PACKING-BOXES.

Specification forming part of Letters Patent No. **203,486**, dated May 7, 1878; application filed February 4, 1878.

To all whom it may concern:

Be it known that I, FREDERICK MYERS, of New York, in the county of New York, in the State of New York, have invented a new, useful, and important Method of Manufacturing Packing-Boxes, as described and claimed in this specification.

In the manufacture of packing-boxes, nailing-machines have been used to nail together the ends, sides, and bottom of a box by one machine. Dressing-machines have been employed to dress the exposed sawed ends of these parts of a box, and the sides of the bottom of the box have been trimmed by hand with a plane. In such cases the machines have been independently and separately operated in different parts of the factory, with no combined effect or unity of action, causing delay and labor in handling and nailing the parts of the boxes, expensive dressing and trimming of the same, and want of uniformity in the finished boxes.

The object of my invention is to secure a unity of operation in machinery to nail, dress, and trim the parts of the boxes in rapid and continuous succession with a proper division of labor, insuring a great reduction in the expense in handling and making the boxes, and also a largely-increased production of boxes at a greatly-diminished cost.

My invention consists in the method of constructing boxes, consisting in successively nailing together the parts thereof, with or without the top, by nailing-machines relatively arranged for successive operation; and consisting, further, in finishing boxes by means of a dressing machine or machines, or a trimming machine or machines, or finishing-machines of both kinds in any order of succession, the trimming-machine preferably of my own invention, in such a manner that the parts of the boxes can be nailed together, the exposed sawed ends of the parts dressed, the sides of the bottoms and tops trimmed, and the boxes completed for packing purposes, in regular, successive steps, and the frames of the boxes in process of construction being passed rapidly from one machine to another until the finished boxes are delivered from the last machine ready for use.

The drawing presents a view of the relatively arranged machinery, showing the progressive steps in the construction of a box—from the partial frame of two ends and one side nailed together, to the box completed and the lid placed diagonally therein or temporarily nailed thereon.

A, B, and C are nailing-machines, placed in line and fronting in the same direction. D and E are intermediate tables. F and G are dressing-machines, fronting toward the nailing-machines. H is a trimming-machine, placed between the dressing-machines. I is a table between the nailing-machine C and the trimming-machine. K is a table at the end of the trimming-machine.

The several machines being put in motion by suitable driving power and mechanism, and sides and ends for boxes being placed near nailing-machine A, sides near machine B, and bottoms near machine C, the method of manufacturing is as follows: The operator of nailing-machine A secures the nailing of the ends and one side, and pushes that part of the box to table D, as shown at L. The operator of nailing-machine B takes that part of the box and secures the nailing of the other side to it, and pushes that part of the box to table E, as shown at M. The operator of nailing-machine C takes that part of the box, secures the nailing of the bottom to it, and pushes it to table G, as shown at N. The operator of one of the dressing-machines then takes the box, dresses the exposed sawed ends of the parts of the box, and places it in the chute of the trimming-machine, as shown at O. It is then carried forward by the carrying-apron of the trimming-machine, the sides of the bottom trimmed, and it is delivered on the table K, where the lid is placed diagonally in the box, and it is ready to be removed for packing purposes, as shown at P.

The operator of each nailing-machine secures the nailing of two rows of nails, and picks up only certain parts of the boxes, which facilitates the operation very materially, and simplifies the labor greatly, as compared with the practice of using the nailing-machines independently, as before my invention. Further, much trouble, delay, and expense attended such practice, in adjusting the partial frames of the boxes so that the nails could be

properly driven. The machine being adjusted to nail on the first side would not nail on the second side without further adjustment; and being adjusted to nail on the second side would not drive the nails sufficiently in the first side, but would leave them standing out the thickness of one side. To compensate for this insufficient driving of the nails a dummy or extra board was employed to raise the partial frame, so that the nails would be fully driven. This dummy had to be placed and removed in the nailing of each partial frame.

By my invention the dummy and its consequent labor is dispensed with, which is a material consideration in the manufacture of several thousand boxes in a day. Further, before my invention each nailing-machine operator piled the frames or boxes on the floor, occasioning much handling of the same. They were then picked up and removed to dressing-machines, and placed on the floor again; then they were picked up, removed to dressing-machines, and dressed, and once more placed on the floor; then they were removed to be trimmed by hand with a plane. By my invention a great part of this labor and consequent expense is avoided.

As compared with the way of making boxes before my invention, my method insures the manufacture of more uniform, better finished boxes, much more rapidly, with greatly reduced labor, and consequently at a considerably-reduced cost.

The construction of the boxes is facilitated by employing two dressing-machines, one on each side of the trimming-machine, and in using the intermediate tables between the several machines; but it is evident that one of the dressing-machines might be dispensed with, and also that the intermediate tables might be dispensed with, and that other slight changes might be made, without departing from my invention—for example, the dressing-machine or machines may be placed after the trimming-machine.

The trimming-machine I prefer is of my own invention for the purpose, and will trim the top of the box, if temporarily in place, as well as trim the bottom.

It is customary to have the box-lid carefully made, and finished separately from the boxes, and placed diagonally in the boxes after they are finished. This labor and expense can be greatly reduced, and better-fitting lids, especially adapted to each box, secured by employing a fourth nailing-machine between the third nailing-machine and dressing-machine to temporarily nail on the top of the box, and by also employing a second trimming-machine to trim the edges of the top or bottom, whichever is left untrimmed by the first trimming-machine; or a single trimming-machine with an upper as well as lower set of cutters can be used, so as to trim the sides of the bottom and top at the same time.

The nailing-machines and the dressing-machine or dressing-machines and the trimming-machine or trimming-machines, relatively arranged for successive operation, form a series of nailing-machines for constructing boxes with or without the tops, and, further, form a series of nailing-machines and a finishing-machine for constructing and finishing such boxes, the finishing-machine or finishing-machines being one or more dressing-machines, or one or more trimming-machines, or one or more dressing-machine, and one or more trimming-machine, arranged in any order of succession.

I claim—

1. The method of constructing boxes consisting in successively nailing together the parts thereof, as specified, by nailing-machines relatively arranged for successive operation, substantially as described.

2. The method of constructing and finishing boxes, consisting in successively nailing together the parts thereof, as specified, by nailing-machines, and finishing the boxes by one or more finishing-machines, the machines being relatively arranged for successive operation, substantially as described.

In testimony whereof I hereto affix my signature in the presence of two attesting witnesses, at the city of New York, this 11th day of January, A. D. 1878.

FREDERICK MYERS.

Witnesses:
H. T. BASFORD,
O. D. BALTZER,
A. RICHARDSON.