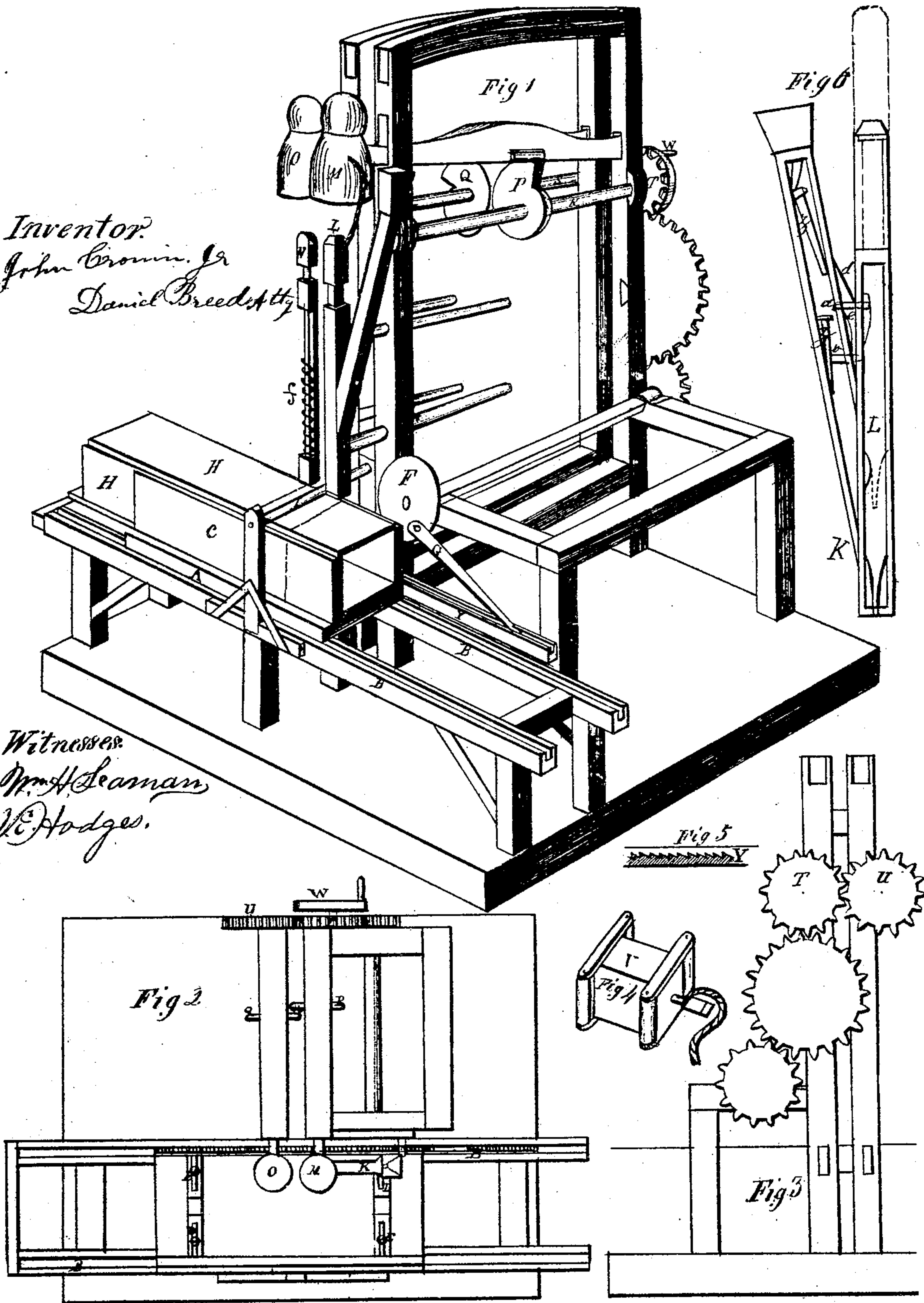


*J. Cronin,*  
*Making Boxes.*  
*No. 102232,* *Patented Apr. 26. 1870.*

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*John Cronin, Jr*  
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*Witnesses:*  
*Wm. H. Leaman*  
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# United States Patent Office.

JOHN CRONIN, OF RICHMOND, VIRGINIA.\*

Letters Patent No. 102,232, dated April 26, 1870.

## IMPROVEMENT IN MACHINE FOR MAKING WOODEN BOXES.

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 CRONIN, of Richmond, in the county of Henrico and State of Virginia, have invented a new and useful Machine for Making Wooden Boxes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

In the accompanying drawings—

Figure 1 is a perspective view of my machine.

Figure 2 is a plan of the same.

Figure 3 is an elevation, showing the gearing.

Figures 4, 5, and 6 are views of parts detached.

My invention consists of a machine provided with a carriage and clamp for holding boards in position for being nailed together in making boxes, and, also, with a peculiar nail-feeder and a punch, a nail driver and two hammers, all operated automatically for making boxes.

A sliding carriage A, traveling on ways B, is provided with clamping sides C, which are adjustable by means of screws E in slotted arms D.

This carriage is moved by means of a crank-wheel, F, and pawl-arm G, which work in connection with ratchet-bar Y, fig. 5.

This carriage A may be sixteen feet long, or any other desired length, so as to receive four boards H, (already dressed to proper width,) and clamp the same for nailing them together, thus forming a long tube, which may afterward be cut off in sections for separate boxes, and the end pieces inserted and nailed.

The sides C of the carriage are adjusted to hold the side boards of the box while being nailed, and an adjustable roller, I, is employed to press home the covering board of the long tube or box.

The boards being thus clamped in place, a follower, V, fig. 4, already inserted, serves as a gauge to regulate the size of the tubular box, and to help hold the boards until they are nailed, as follows:

A combined nail-feeder and driver is seen at K, figs. 1 and 6. The nails Z, fig. 6, are fed into the machine by hand, with the point downward. Two slides, *a* and *b*, are so operated by springs *d* and *e*, and the punch or nail-driver L, that one nail drops at a time, and the nail-driver comes down and drives the nail home into the box. As the nail-driver rises a second nail drops ready for the next stroke of the nail-driver, which is linked to the hammer M, and thus rises and falls with the hammer.

A punch, N, is employed to make a hole ready for the nail. This punch is driven down by a hammer, O, and raised by a coiled spring, *f*.

The hammers are operated by cams or snails P and Q, in connection with the shafts R and S and the gear-wheels T and U.

Any power may be applied to the crank-wheel or hand-wheel W. And I propose to duplicate the gear-wheels, nail-feeder, punch, and hammers, so as to nail both sides of the box or tube at one operation.

Having thus described my machine or invention,

I claim—

1. The above described machine for making wooden boxes, substantially as set forth.
2. The construction and arrangement of the nail-feeder K, provided with the slides *a b*, or their equivalents, for forwarding a single nail at a time, substantially in the manner set forth.
3. The combination of the punch N, the nail-driver L, and the hammers O and M, substantially as described.
4. The follower V, fig. 4, for gauging the size of the box while being clamped and nailed, substantially as set forth.

JOHN CRONIN.

Witnesses:

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