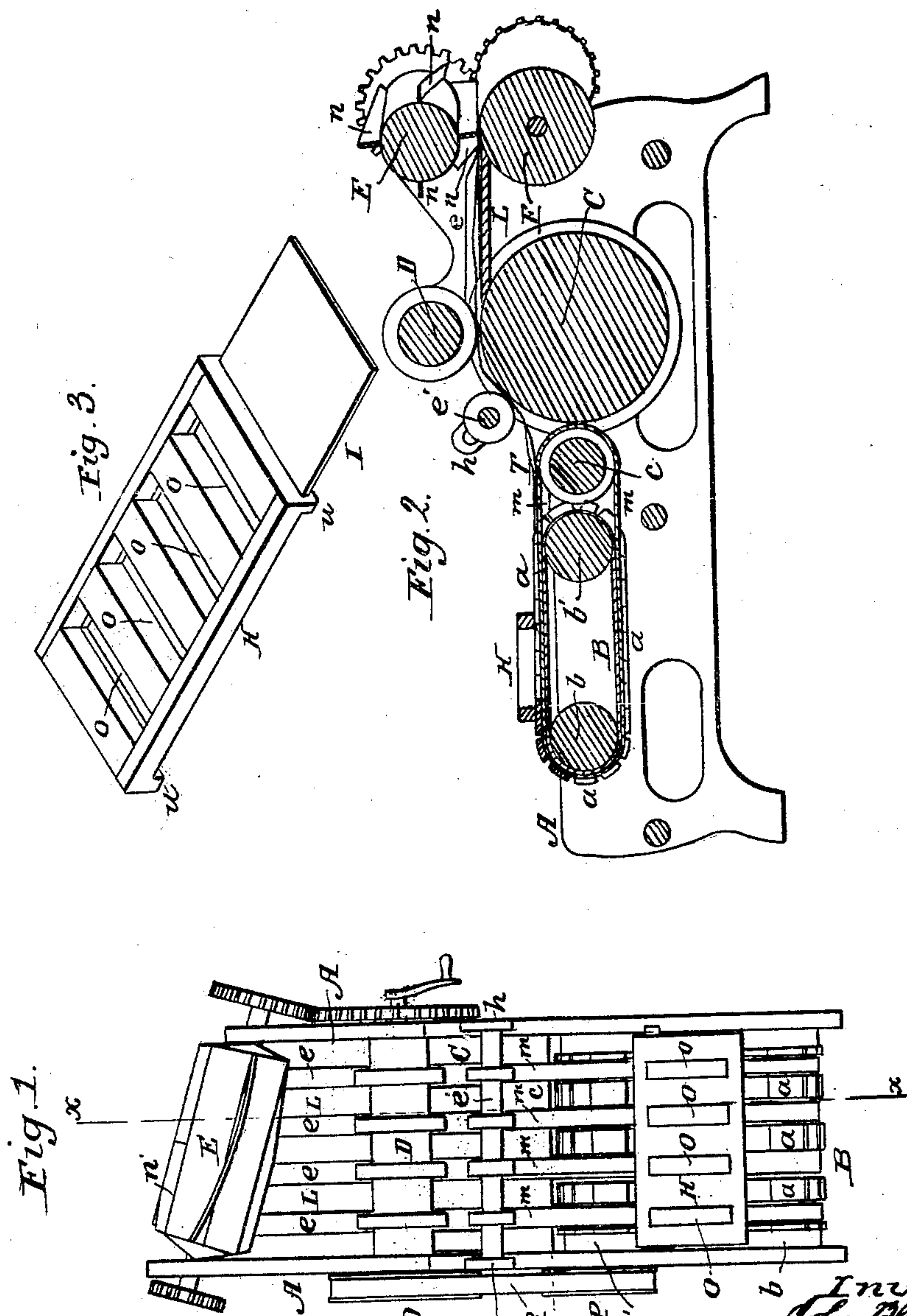


J. BLACKIE.

Machine for Pressing Tobacco.

No. 57,280.

Patented Aug. 21, 1866.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN BLACKIE, OF NEW YORK, N. Y.

## IMPROVEMENT IN MACHINES FOR PRESSING TOBACCO.

Specification forming part of Letters Patent No. 57,280, dated August 21, 1866.

*To all whom it may concern:*

Be it known that I, JOHN BLACKIE, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Machines for Manufacturing Plug-Tobacco; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use the invention, I will proceed to describe it.

Figure 1 is a top-plan view; Fig. 2, a longitudinal vertical section taken on the line  $x x$  of Fig. 1; Fig. 3, a perspective view of a part of the apparatus detached.

My invention consists in a novel construction of a machine for pressing and forming tobacco-leaves into continuous strips or plugs, and then cutting it into plugs of the required length, all at one operation.

A represents the frame of the machine, which may be constructed of any suitable size and material. Transversely of this frame is mounted one large roller, C, having grooves in its surface circumferentially of a width corresponding to the width of the strip or plug to be formed.

D represents a pressing-roller, having flanges or projections thereon so located as to fit into the grooves in roller C. Another similar but smaller roller,  $e'$ , is located as shown in Fig. 2, and has its bearings in slots in the supports  $h$ , by which means it is left free to rise and fall as circumstances shall require.

Two plain rollers or cylinders,  $b$  and  $b'$ , are located as shown clearly in Fig. 2, and around them is stretched a belt, B, or endless apron, which serves to carry the tobacco forward to the pressing-rollers C and D. This apron B has attached to its surface a series of blocks,  $a$ , these blocks being secured in continuous rows, and the rows being of such distance apart as to form channels between them corresponding in width to the width of the grooves in the wheels C, the channels in the belt or apron B being in direct line with the grooves in the wheel C. A belt,  $m$ , of proper width to

fit in the channels of the belt B, is then placed over and around the latter, and extended around the roller  $c$ , resting on the flanges of the latter. There will, of course, be as many of these belts  $m$  as there are channels or grooves in the apron B and wheel C. It will, of course, be understood that any number of these channels and grooves may be used by making the machine of the proper width, and that by making the channels and grooves of varying widths a series of strips or plugs of different widths may be formed at one operation.

To place the tobacco properly and regularly in the channels of the apron B, so as to form a strip or plug of uniform thickness, I use a series of frames, H, as shown in Fig. 3. This frame is made of a convenient size to handle, and is provided with a series of openings,  $o$ , arranged to correspond in width and location with the channels of the apron B, as shown in Fig. 1. This frame H is provided with a sliding bottom, I, as shown in Fig. 3, so that when the cells or openings  $o$  have been properly filled with the prepared tobacco by hand, and the frame placed on the apron B, and the bottom I drawn out by the attendant, the tobacco in the cells  $o$  will fall down into the channels of the apron B, and thus be fed forward to the pressing-rollers.

In order to keep the machine supplied with tobacco, the apron B will be made of considerable length and a number of the frames H will be used, some being filled while others are being emptied, care being taken to so place the frames as to form a continuous supply of tobacco upon the apron B.

To insure the ready placing of the frame H in proper position on the apron B, it is provided with the projections  $u$  on its lower side, which serve as guides in placing it on the apron.

From the opposite side of the roller C a platform, L, extends, having cleats or raised projections  $e$  thereon, as shown in Fig. 1, thus forming a series of channels or grooves corresponding with those on the apron B and with the grooves on the roller C, to guide the strips of tobacco from the roller C forward to the cutting apparatus.

At the end of the machine is located a roller, F, having its upper surface flush with the up-



per surface of the platform L, as shown in Fig. 2. Above this roller is mounted another roller, E, having a series of spiral knives, *n*, projecting radially from its periphery.

It will be observed that these rollers E and F are mounted diagonally in the frame, as shown in Fig. 1, and as the knives are wound spirally around the roller E it follows that the knife will cut in but a portion of the channels at once, usually but one, it cutting in the others successively, thus requiring much less power to cut the strips than would be required if it were cutting them all at once.

It will also be seen that by thus arranging the knives the one in operation will begin to cut on one edge of the strip first, and continue to cut across it as the cylinder E revolves, and thus also cut square across the strip while it continues to advance.

In order to cut plugs of different lengths at the same time, a portion of the knives will be made to extend only part way across the cylinder, as shown at *n'* of Fig. 1; and as there may be any number of the knives thus arranged, it is obvious that plugs may be thus cut of different lengths at the same time.

In order to vary the operation and change the length of the plugs at will, the knives should be so attached to the cylinder that they can be removed or added at pleasure.

It will, of course, be understood that the various parts of the machine will be so geared as to cause the parts to move in the required direction and with corresponding velocities.

The cylinders E and F should be geared together, as shown in Fig. 2, and motion may be imparted to them direct from the cylinder C, as shown in Fig. 1, a pulley, O, on the opposite end of C serving to convey motion through the belt R and pulley P to the apron B and the belts *m*.

The operation is as follows: The frames H, being filled with the prepared tobacco, are placed on the apron B, and the bottom I being withdrawn permits the tobacco in the several cells *o* to fall into the channels of the belt or

apron B, the tobacco resting on the belts *m* in the bottom of said channels. Motion being imparted to the machine, the tobacco is carried forward to the cylinder C, and passes up between it and the roller *e'*, which latter, by its weight, presses the tobacco into the grooves of cylinder C and helps to feed it forward. It then passes under the pressing-roller D, by which it is thoroughly compressed, said roller D being provided with screws and springs to regulate the pressure as desired, and as is usual in this class of machines.

The strip of tobacco represented by T in Fig. 2 is carried or pushed forward after being pressed across the platform L, and enters between the rollers E and F, where it is cut by the knives *n* into plugs of the required length, as already explained.

It will thus be seen by the use of a machine constructed on this plan a large number of strips can be pressed at once, and that strips of different widths may be formed at the same time and the same cut into plugs of various lengths, all at one operation.

Having thus described my invention, what I claim is—

1. The apron B, having a series of channels of varying or uniform widths for receiving and conveying the tobacco to the pressing-rollers, substantially as set forth.

2. In combination with the apron B, constructed as described, the belts *m*, when said parts are arranged to operate as and for the purpose set forth.

3. The combination of the grooved cylinder C, adjustable roller *e'*, and pressing-roller D, substantially as shown and described.

4. A cutting apparatus constructed and operating substantially as set forth.

5. The frame H, provided with the cells *o* and sliding bottom I, arranged and operating substantially as and for the purpose set forth.

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Witnesses:

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