(No Model.) 2 Sheets—Sheet 1.

A. M. MURRAY & D. N. STUTSMAN.

BOX MACHINE.

No. 484,041. Patented Oct. 11, 1892.

Fig. 1.

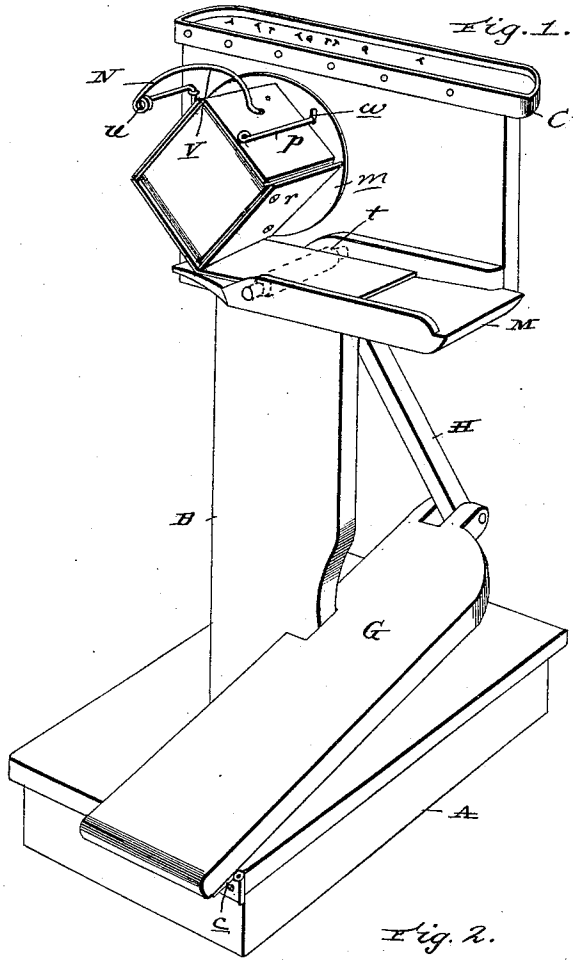
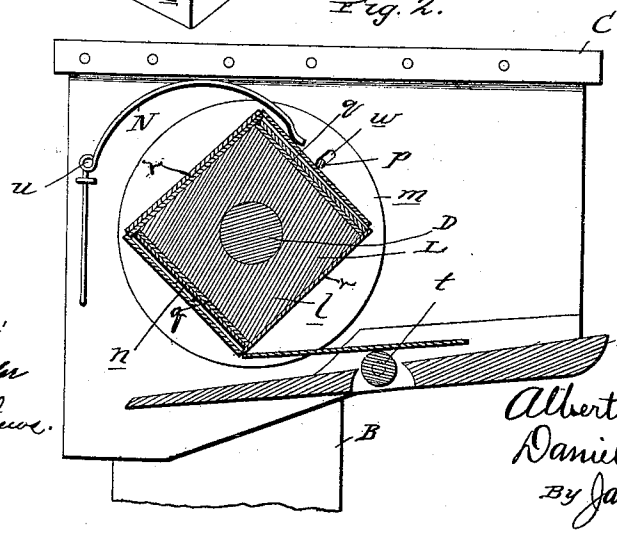


Fig. 2.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

A. M. MURRAY & D. N. STUTSMAN.

BOX MACHINE.

No. 484,041. Patented Oct. 11, 1892.

Fig. 3.

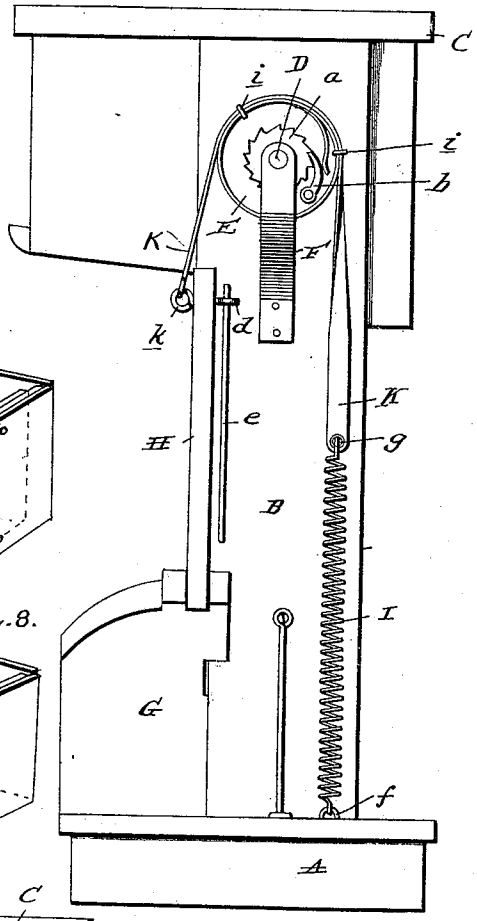


Fig. 7

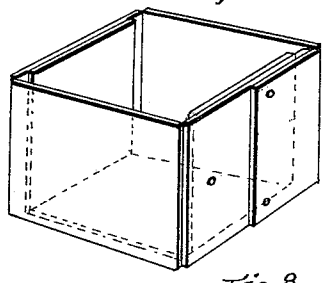


Fig. 8.

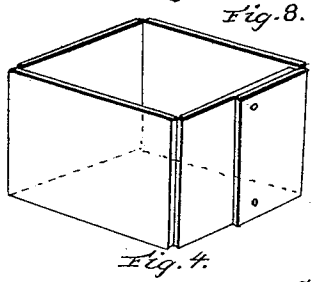
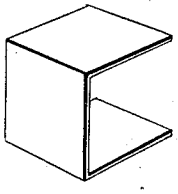


Fig. 4.

Fig. 6.



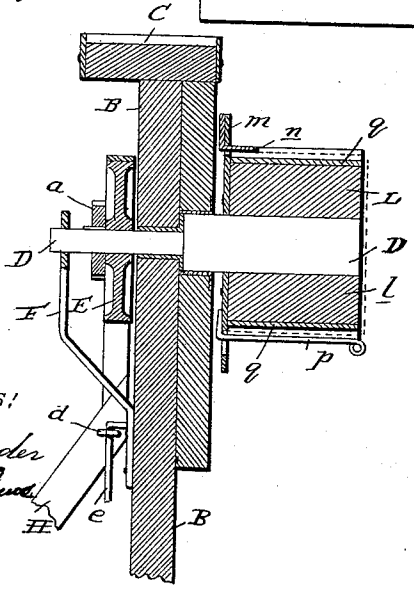
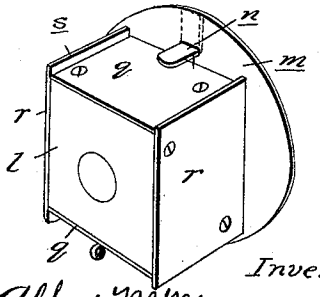


Fig. 5.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALBERT M. MURRAY AND DANIEL N. STUTSMAN, OF NEAR GOSHEN, INDIANA.

BOX-MACHINE.

SPECIFICATION forming part of Letters Patent No. 484,041, dated October 11, 1892.

Application filed March 29, 1892. Serial No. 426,918. (No model.)

To all whom it may concern:

Be it known that we, ALBERT M. MURRAY and DANIEL N. STUTSMAN, citizens of the United States, residing at near Goshen, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Box-Making Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to a machine for making berry and fruit boxes, and it aims to reduce the cost of manufacture by facilitating and expediting the production of the boxes and to lessen the labor heretofore employed.

The invention and its objects will appear from the following description and claims, when taken in connection with the annexed drawings, in which—

Figure 1 is a perspective view of our improved machine. Fig. 2 is a vertical sectional view taken through the mandrel or rotatable head and stock-table. Fig. 3 is a rear elevation of the machine. Fig. 4 is a vertical central sectional view of the upper part of the machine, with parts broken away. Fig. 5 is a perspective view of the mandrel or rotatable box-holder removed; and Fig. 6 is a perspective view of a piece of stock, which comprises the bottom and two supplemental walls of a box. Fig. 7 is a perspective view of the completed box; and Fig. 8 is a perspective view of the piece comprising the outer side walls of the box.

Referring by letter to said drawings, A indicates a base upon which the various parts of our machine are mounted. Secured to this base is an upright B, and mounted upon the top of this upright is a box or holder C, which is designed to contain tacks in a convenient position for the operator. Journaled in this upright at a suitable distance from its upper end is a transverse shaft D. This shaft has fixed to it, near one end and on the rear side of the upright, a ratchet-wheel *a*.

E indicates an oscillating belt-wheel, which is arranged loosely upon said shaft, and carries a spring-backed pawl *b*, which is designed to engage the teeth of the ratchet-wheel and impart an intermittent rotatable movement thereto, and consequently to the shaft on which it is secured.

F indicates a brace-arm, which receives one end of the shaft D at one end and has its opposite end secured to the frame or upright B.

G indicates a pedal, which is hinged at one end, as shown at *c*, to the base-frame, and its opposite end is pivotally connected with one end of a pitman H, the opposite end of which carries a lateral eye *d*, which receives a vertical guide-rod *e*, secured to the rear side of the frame or upright B.

I indicates a spiral spring. This spring is secured at one end to the base-frame on the rear side of the upright, as shown at *f*, and is connected at its opposite end with one end of a belt K, as shown at *g*. This belt K is secured to the oscillating wheel E, as shown at *i*, and passes partly around its periphery, having its opposite end secured to the upper end of the pitman, as shown at *k*.

Fixed to the forward or opposite end of the shaft D is a mandrel and box-holder L. This holder or mandrel is formed from a block *l*, of rectangular form in cross-section, fixed to the shaft, so as to rotate therewith, and is preferably provided on its inner side with a vertical plate *m*, for the attachment of a flat lug or lip *n*, and an arm *p* arranged at opposite sides of the block *l*. Secured to two opposite sides of this rotatable head or mandrel are two similar plates *q*, which are designed to face the block and stop flush with the front or outer side thereof, and *r* indicates two similar plates, which are of greater width than the plates *q*, so that their ends may overlap the edges of said plates *q*, as shown at *s*, and form guides to receive the side walls carried by the bottom wall of the box, the plates *q* being depressed as it were, and the flat lug or lip *n* is arranged exterior to one of these depressed plates, while the arm *p* is arranged exterior to the opposite depressed plate.

M indicates a table, which is arranged on the front side of the frame or upright and is pitched toward the mandrel or head, as bettsr shown in Fig. 2 of the drawings. This table has its inclined end extending sufficiently beneath said head and is provided with a horizontal roller *t*, which is designed to facilitate the feeding of the stock.

N indicates a friction-spring. This spring

is here shown as composed of a piece of spring-wire, having one end secured to the frame, having a coil u midway of its length and thence curved, as shown at v, so as to exert a constant pressure upon the sides of the head or mandrel as it is rotated and hold the stock in position while the box is being formed. The arm p is also preferably composed of spring-wire, and the plate m is slotted, as shown at w, to permit of the ready insertion of the arm p, and also allow a yielding movement of the said arm.

In operation, a piece of stock which is to constitute the bottom and two inner side walls of a box, as shown in Fig. 6 of the drawings, is first placed on the rotatable head or mandrel, with one end beneath the lip or lug n and the opposite side wall beneath the arm p, the arm p being on the under side at this stage. The operator then takes hold of a piece of stock which is to form the side walls of a box and places one end under the arm p, after which he presses the pedal, when the head or mandrel will make a half-revolution by the operating mechanism and carry the stock around the mandrel or head so that the opposite ends of said outer stock lap each other on one side of said mandrel, the friction-spring N pressing upon the stock, which, together with the arm p, will hold it in position. The operator then tacks the overlapped ends together and to one of the inner walls formed with the bottom, after which he gives the pedal another depression, so that the head or mandrel will make another half-turn when he tacks the opposite side wall of the box to the opposite inner wall, comprising a part of the bottom. The box is then perfectly formed and ready to be removed.

The machine is exceedingly simple for the duty which it performs. It may be very rapidly operated, and it is necessary to employ but one person for a machine and such person need not be skilled.

Having described our invention, what we claim is—

1. A machine for making boxes, having an angular mandrel or box-holder with two of its opposite sides depressed, in combination with a shaft carrying said mandrel, a pedal-lever connected with said shaft for rotating the same, the lip or lug in one of the depressed sides, the clamp or arm in the opposite depressed side, and a friction-spring adapted to bear against the sides of the mandrel during rotation, substantially as specified.

2. A machine for making boxes, having an angular mandrel or box-holder provided with facing-plates, the opposite plates of one set being of less width than the opposite plates of the opposite set, and the edges of the wider plates overlapping those of the narrower plates, substantially as specified.

3. A box-making machine having an intermittent rotatable mandrel or box-holder, and having two opposite sides depressed, and also having a lip or lug in one of the depressed sides, and a clamp or arm in the opposite depressed side, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

ALBERT M. MURRAY.
DANIEL N. STUTSMAN.

Witnesses:
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ANTHONY DEAHL.