

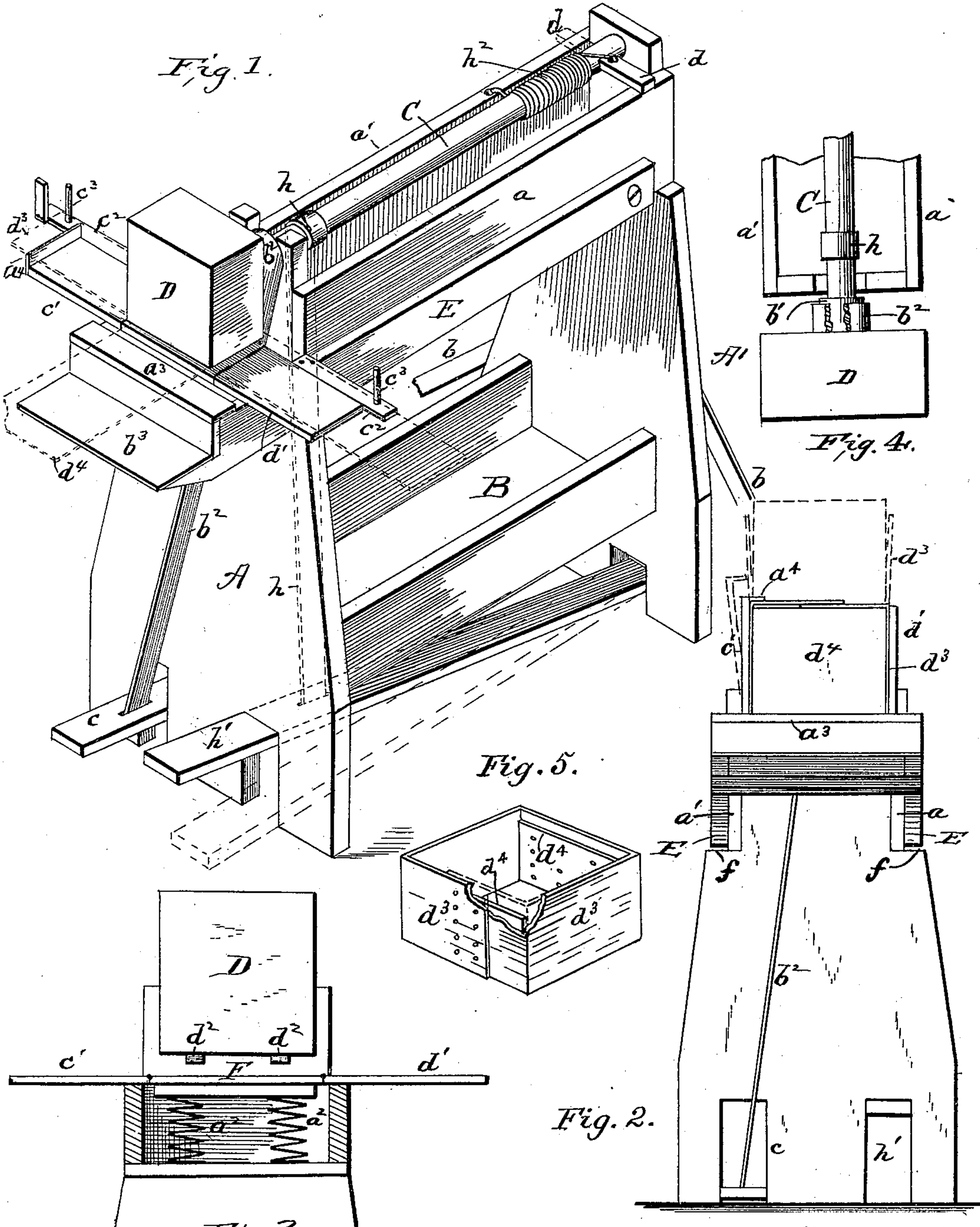
(Model.)

B. KEMPER.

MACHINE FOR MAKING FRUIT BOXES.

No. 356,478.

Patented Jan. 25, 1887.



Witnesses *Fig. 3.*
Wm. Rosenbaum
H. A. Daniels

Inventor
Benhart Kemper
By *his* Attorney *W. T. Purris*

UNITED STATES PATENT OFFICE.

BERNHART KEMPER, OF MUSCATINE, IOWA.

MACHINE FOR MAKING FRUIT-BOXES.

SPECIFICATION forming part of Letters Patent No. 356,478, dated January 25, 1887.

Application filed May 4, 1886. Serial No. 201,071. (Model.)

To all whom it may concern:

Be it known that I, BERNHART KEMPER, a citizen of the United States of America, residing at Muscatine, in the county of Muscatine and State of Iowa, have invented certain new and useful Improvements in Machines for Making Fruit-Boxes, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improved machine for making fruit-boxes, which machine is constructed as hereinafter fully set forth and claimed.

In the drawings, Figure 1 is a perspective view of my improved machine. Fig. 2 is a front elevation, in which a box partly formed is shown by the full and broken lines, and a box completely formed, ready for nailing or riveting together, is shown by the full lines. Fig. 3 is partly a vertical section and partly a front elevation. Fig. 4 is a plan view of a portion of the machine. Fig. 5 is a perspective view of a box formed as hereinafter set forth.

A A' designate the standards of the machine-frame, having their upper portions stayed by the side bars, *a a'*, securely fastened to the edges of the standards the required distance below their upper ends. The lower portions of the standards may be stayed in any well-known manner. In the present case they are shown as stayed by a tool-box, B, securely fastened to the inner sides of the standards. This frame of the machine may be supported in position by stays *b*, attached to one or both of the standards.

C designates a rock-shaft having its bearings in the upper portions of the standards. This rock-shaft is made long enough for the front end to extend the required distance beyond the front standard, as shown.

D designates a square block plated with sheet-iron or other suitable metallic substance, and is securely fastened centrally on or to the extended end of the rock-shaft. This block is made the size of the inside of the boxes to be formed on the machine.

On the extended portion of the shaft, between the block and the front standard, is a pulley or wheel, *b'*, loosely mounted on the shaft, to form the bearing of the strap *b²*, the lower end of which is attached to a pedal, *c*,

and the upper portion of the strap is extended over the pulley, and the upper end of the strap is attached to the movable frame E, the rear end of which frame is pivoted or hinged to the side bars, *a a'*.

The rock-shaft is provided with a stop-pin, *d*, adapted to strike upon the upper edges of the side bars, *a a'*, of the machine-frame, forming thus stops to the rocking movements of the shaft. The shaft is rocked (for the purpose of reversing the position of the box to enable it to be nailed on two opposite sides) by means of a strap, *h*, the pedal *h'*, and the spiral spring *h²*, placed upon the shaft, and fastened at one end to the bar *a'* and at the other end to the shaft or the stop-pin. The lower end of the strap *h* is attached to the pedal *h'*, and the upper portion is extended over and partly around, and has its end fastened to the shaft, so that downward pressure upon the pedal will turn the shaft half-way around, being stopped by the pin striking the top of the side bar, *a'*; and the shaft is rotated in the opposite direction by the spiral spring till the pin strikes the top edge of the side bar, *a*.

The front portion of the movable frame is constructed to form a box large enough to receive the block D and the box formed on it.

F designates the central portion of the box-former, provided with the hinged flaps *c' d'*, the same size as the central portion, which is the size of one side of the boxes to be made on the machine.

Two spiral springs, *a²*, are placed upon the bottom of the box of the movable frame, and the central portion, F, of the former is placed on these springs, and is held in a horizontal position by them when no pressure is applied to the pedal *c*, as shown in Figs. 1 and 2 of the drawings. The front end of the movable frame is provided with a shelf, *b³*, forming a convenient receptacle for tools and materials used in making the boxes. The movable frame is provided with arms *c²*, having pins *c³*, forming stops to the inner edges of the boards used for the sides of the boxes.

The lower side of the block, near its inner face, is provided with lugs or pins *d²*, forming stops to the inner end of the board used for the bottoms of the boxes.

When no pressure is applied to the pedals,

the machine is in position shown in Fig. 1 of the drawings. The board d^3 , cut the required size to form the side of a box, is placed on the former, with the back edge against the stop-pins c^3 , and the bottom piece, d^4 , cut the required size, is placed at right angles to and over the side piece, immediately under the block, and with its inner end against the lugs d^2 on the box, as seen in Fig. 1 of the drawings. Pressure being then applied to the pedal c , the front end of the movable frame is thrown upward, causing the upper edges of the frame to impinge against and elevate the flies $c' d'$, bending upward the ends of the side piece, d^3 , while the front strip, a^3 , impinges against and bends upward the bottom piece, d^4 . The ends of the side piece automatically incline slightly outward, allowing space between them, as shown by dotted lines in Fig. 2 of the drawings, for the end of the bottom piece to be bent down freely over the edge of the block. Then by hand the ends of the bottom and side pieces are bent down over the edges of the block in the following order, viz: first, the end of the bottom piece, then the right-hand end, and, lastly, the left-hand end of the side piece, the left-hand end lapping over the other end, as shown by full lines in Fig. 2 of the drawings. Pressure being then removed from the pedal c , and the fly c' being held by hand in an upright position against the box, the weight of the frame causes the flange a^4 to descend and bear upon the overlapping end of the side piece, as shown in Fig. 2, holding in place the folded ends while they are being nailed or riveted together. When these ends have been thus fastened together, the flanged fly is released from the box, and the movable frame drops upon the rests f , formed on the front standard. Pressure then being applied upon the pedal h' , the shaft is rotated till the pin d strikes the top of the side bar, a' , thus reversing the position of the block and box, so that the other end of the bottom may be securely nailed or riveted to the side piece. The box, being thus com-

pleted, is removed from the block, and the machine is in position for the construction of another box in the same manner.

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

1. The combination, with the frame of a machine for making fruit-boxes, of a rock-shaft, C, and a forming-block, D, fastened securely upon the extended end of the shaft and adapted to be reversed in position by mechanism, substantially as and for the purposes described.

2. The combination, with the frame of a machine for making fruit-boxes, of a reversible forming-block, D, a movable frame, E, having a box to receive the block, and a box-former consisting of the central portion, F, and hinged flies $c' d'$, adapted to bend the bottom and side pieces of the box around the block, substantially as and for the purposes described.

3. The combination, with the frame of a fruit-box-making machine having the stay-bars $a a'$ placed below the upper ends of the standards, of the rock-shaft C, provided with the stop-pin d and the retracting-spring h^2 , the forming-block D, mounted centrally on the extended end of the shaft, the pedal h' , and strap h , attached to the pedal and shaft, substantially as and for the purposes described.

4. The combination, with the frame of a fruit-box-making machine, of a rock-shaft, C, provided with a pulley, b' , the reversible forming-block D, mounted upon the extended end of the shaft, a movable frame, E, having a box to receive the block, a box-former consisting of the central portion, F, and hinged flies $c' d'$, placed on yielding bearings in the box of the movable frame, the pedal c , and the strap b^2 , extended over the pulley on the shaft and attached to the pedal and frame, substantially as and for the purposes described.

In testimony whereof I have affixed my signature in presence of two witnesses.

BERNHART KEMPER.

Witnesses:

T. R. FITZGERALD,
JOHN BOWMAN.