(No Model.) 2 Sheets—Sheet 1.

M. F. WILSON.

BOX FORMER.

No. 341,978. Patented May 18, 1886.

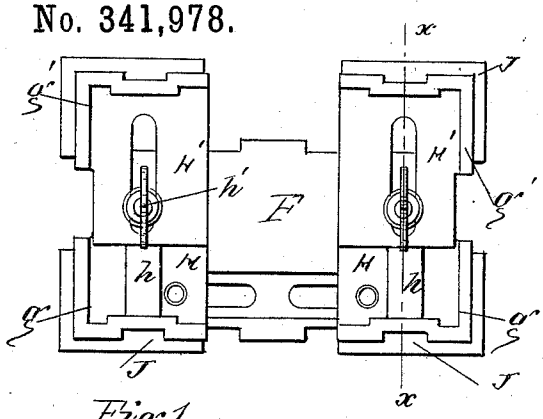
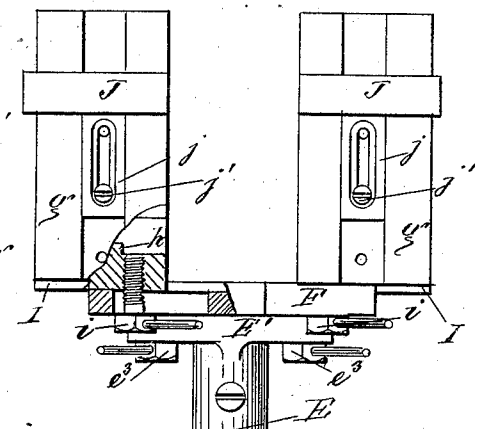


Fig. 1



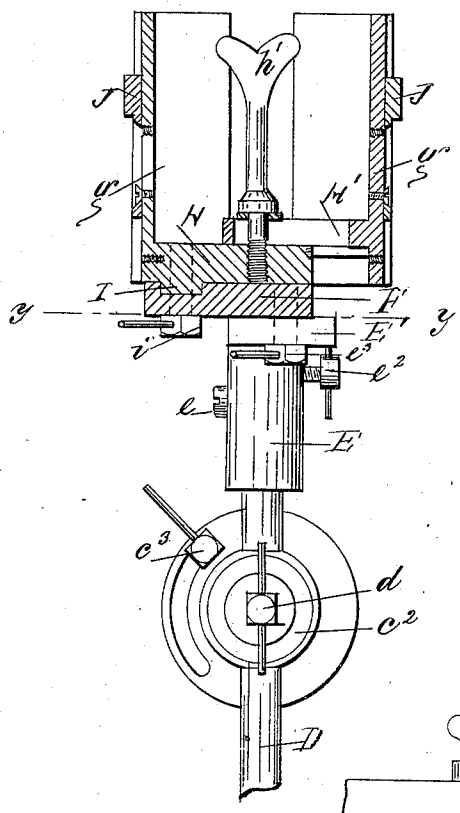


Fig. 3

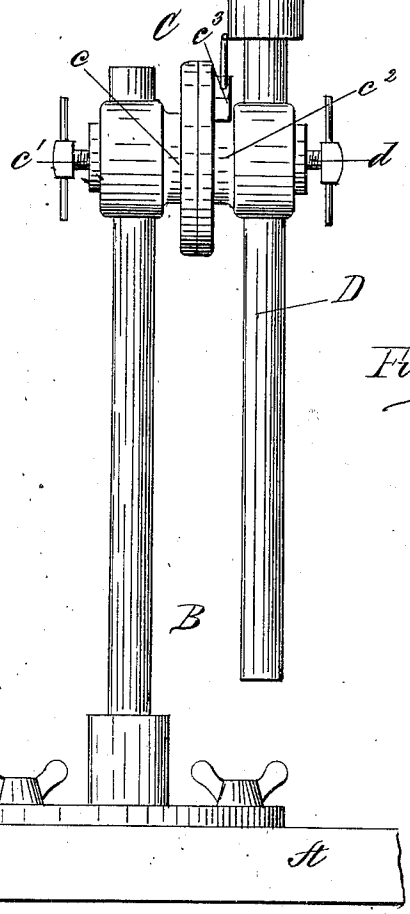


Fig. 2

Witnesses
C. E. Remmo
H. C. Codd

Inventor
Merrick F. Wilson
By Coburn & Church
Attorneys

N. PETERS. Photo-Lithographer. Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

M. F. WILSON.

BOX FORMER.

No. 341,978. Patented May 18, 1886.

Fig. 4

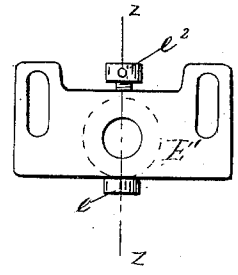


Fig. 5

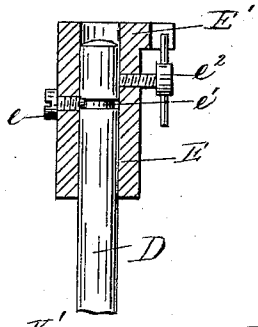


Fig. 6

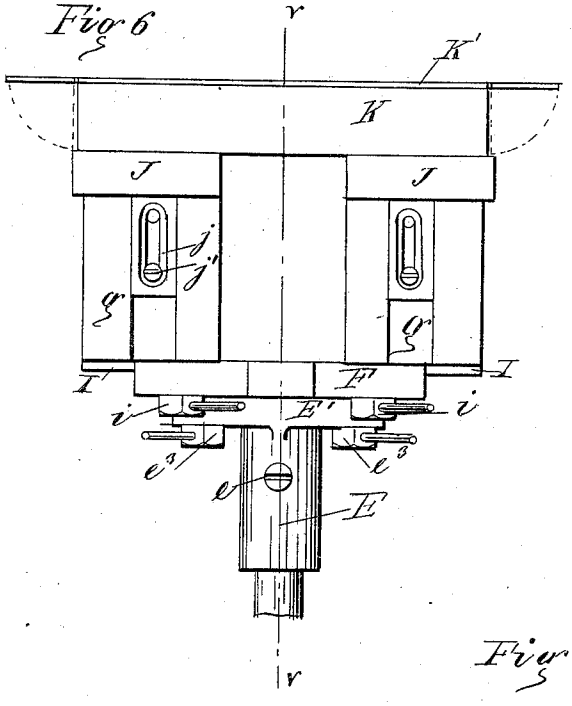


Fig. 7

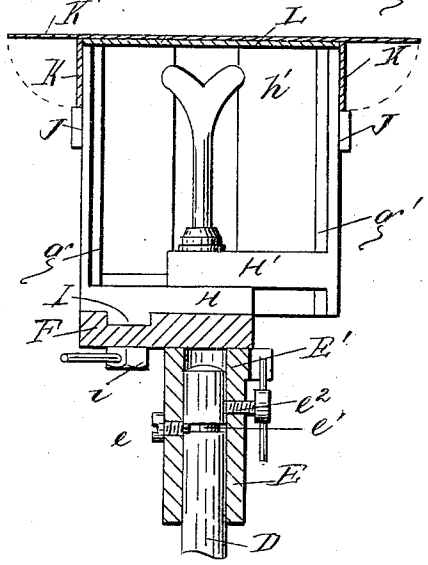
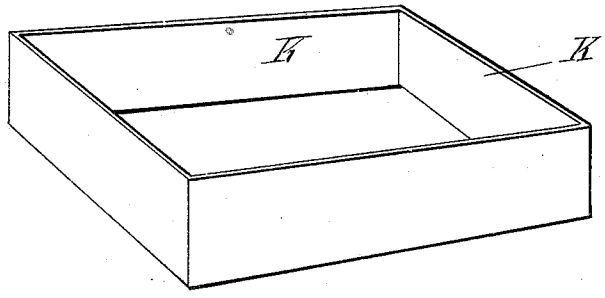


Fig. 8



Witnesses.
C. E. Remmo.
W. C. Coles

Inventor
Merrick F. Wilson
By Coburn & Thacher
Attorneys

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

MERRICK F. WILSON, OF CHICAGO, ASSIGNOR OF ONE-HALF TO CHARLES R. STEELE AND V. CLARENCE PRICE, BOTH OF WAUKEGAN, ILLINOIS.

BOX-FORMER.

SPECIFICATION forming part of Letters Patent No. 341,978, dated May 18, 1886.

Application filed July 14, 1884. Serial No. 137,715. (No model.)

To all whom it may concern:

Be it known that I, MERRICK F. WILSON, a citizen of the United States, and residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Box-Formers, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a former embodying my invention. Fig. 2 is an elevation, part being broken away to show the construction. Fig. 3 is a section on the line *x x* of Fig. 1. Fig. 4 is a plan view on the section line *y y* of Fig. 3. Fig. 5 is a sectional view on the line *z z* of Fig. 4. Fig. 6 shows the former with a box set thereon, ready to be put together. Fig. 7 is a sectional view on the line *v v* of Fig. 6, and Fig. 8 is a perspective view of a portion of a box ready to be applied to the former.

My invention relates to formers such as are used in the manufacture of paper boxes, and upon which the blanks, cut to the proper shape, are placed and the parts of the box assembled and secured together to form the completed box. The former now in use is a mere block of wood of a size and shape approximating that of the box; and the object of my invention is to produce a former which will be free from the objections hereinafter pointed out as incident to the use of these blocks, and which will greatly reduce the labor of making a box, while it renders possible the production of a better box in a shorter space of time.

I will now proceed to describe my invention, and then specifically point out the novel features in the claims.

To the work-bench A, or any other suitable base, is attached, by means of gimlet-pointed screws or any other suitable means, the round standard B, which passes through one arm, *c*, of the two-part clamp C, which is clamped thereon by a set-screw, *c'*. The clamp C is made in two parts, *c c²*, the latter pivoted on the former and the abutting ends of the two being formed into disks, one of which has a curved slot through which passes a clamp-screw, *c³*, screwing into the other disk to secure the two in any radial relative position desired. The arm *c²* of the clamp C is also perforated to receive a stem, D, clamped therein at any desired height by a set-screw, *d*. On the upper end of this stem is mounted the revoluble head E, which is prevented from moving longitudinally on the stem by a screw, *e*, entering a groove, *e'*, in the stem, the said head having also a set-screw, *e²*, by which it may be clamped to the stem to prevent its revolving. The upper portion of this head is formed into a flat plate, E', provided with slots through which pass clamp-screws *e³*, by which the former proper is adjustably secured thereon.

The former proper consists of a base-plate, F, secured, as hereinbefore described, to the plate E', and carrying two sets of holding-jaws or graspers. Each set consists of two jaws, *g g'*, and each jaw consists of two plates set at right angles to each other and attached to a suitable base. The base H of the jaw *g* passes under the base H' of the jaw *g'*, and is provided with a suitable projection or way, *h*, fitting a corresponding groove in the said base H', which latter has a slot through which passes a clamp-screw, *h'*, which takes into the base H. By this construction the distance between the jaws *g g'* may be increased or diminished and the jaws secured when adjusted to the desired position. The distance between the two sets of holding-jaws is also adjustable, the bases H being provided with projections I, fitting in corresponding grooves in the base-plate F, which is slotted to receive the two clamp-screws *i*, which secure their respective sets of jaws at any desired point of their adjustment.

To the outer face of each jaw is adjustably secured a gage-plate, J, shaped to fit the outer face of the jaw. As shown, the gage-plate has a projection, *j*, fitting in a corresponding groove in the jaw, and is secured at any desired point within the limits of its adjustment by means of a clamp-screw, *j'*, passing through a slot in the gage-plate.

The formers usually employed being, as hereinbefore stated, mere blocks of wood, are objectionable for that a different set of blocks is required for each size or shape of box. The former must fit the box with extreme accuracy or the corner joints of the box will be faulty.

Now, in cutting a set of blanks there is, as a rule, a sufficient variation from the size desired to require a new set of blocks for each lot of blanks. This difficulty is entirely overcome by my former, the jaws being adjustable to fit any rectangular body within the limits of their adjustment, and sets of jaws of different sizes may be employed.

In using my device in the manufacture of the ordinary form of box, in which the blank consists of a rectangular portion with a flap attached to each edge thereof, the former is set upright by the rotation of the part c^2 and clamped in that position by the clamp-screw c^3, and is then adjusted to the proper height and secured by set-screw d, the revoluble head E being clamped by set-screw e^2 to prevent it from turning. The jaws of the former are then accurately adjusted to the interior of the finished box formed by the blank to be operated on, and the blank placed with that face thereof which is to be on the inside of the box downward on top of the former. The flaps are then bent down against the sides of the former, the ends of the flaps will meet properly at the corners, and the strips of paper which fasten the flaps at the corner are pasted on, thus completing the box. It will be seen at once that my former is adjustable to suit any sized blank. In making this kind of box the gage-plates are unnecessary and may be dispensed with.

In Figs. 6, 7, and 8 of the drawings I have shown my device employed in making another form of box. The sides are made of a continuous piece, K, as shown in Fig. 8, and this piece is placed over the former after a proper adjustment thereof, the gage-plates being so adjusted as to cause the sides K to project above the top of the former to an extent equal to the thickness of the bottom or top L, which is then placed within the sides K, and a piece of paper, K′, of proper size and form placed thereon and pasted thereto, the paper being folded down against the sides, as shown in dotted lines in Fig. 6, thus securing the bottom or top to the sides. Strips of paper may be employed, however, as in the box first described. It is obvious that, the construction of the box proper and top being the same, the manner of making them is identical. These boxes are frequently covered with glazed or colored paper to give them a finished and ornamental appearance, and to accomplish this, the clamp-screw c^3 being loosened, the former is swung down to an approximately horizontal position and the former adjusted to the proper size to receive the box, which is placed thereon and the former revolved on the stem D, while the paste-covered paper is applied in a continuous piece to each side as it comes uppermost.

When the jaws g' are adjusted outward, they change the disposition of the weight of the former relatively to the stem G and cause it to "wabble" in turning. This I overcome by adjusting the whole former on the plate E′ by the means hereinbefore described, so as to bring the stem D in line with the center of the former.

It is obvious that many mechanical details can be varied in my device without departing from the spirit of my invention; and I therefore do not wish to be understood as limiting myself to the precise details of construction shown and described, reserving the right to make such alterations as come fairly within the scope of my invention.

I am aware that heretofore a box-former consisting of a rectangular frame provided with a series of adjustable screws to support the inside of the box has been employed, the same being shown in Letters Patent No. 278,442, granted to Charles A. Manneck and William Witte, May 29, 1883; and I therefore do not wish to be understood as claiming, broadly, a box-former which is variable in size to fit various-sized boxes.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the base-plate F, of the jaws $g\,g'$, the former provided with bases H, adjustably clamped on the base-plate, and the latter provided with bases H′, adjustably clamped on the bases H, substantially as and for the purposes specified.

2. The combination, with the base-plate F, having grooves in its upper surface and slotted as described, of the jaws g, having bases H, provided with projections I, to fit within the grooves, clamp-screws i, to secure the said jaws to the base-plate, and jaws g', mounted on the bases H, and adjustable at right angles to the direction of the grooves and slots in the base-plate, substantially as and for the purposes specified.

3. The combination, with the angular jaws $g\,g'$, of the gage-plates J, shaped to fit the outer face of the jaws, and each provided with a slotted projection, j, sliding in a corresponding groove in the jaw, and a clamp-screw, j', passing through the slot to secure the gage-plate after adjustment, substantially as and for the purposes specified.

4. In a box-former, the combination, with a base-plate having adjustable jaws mounted thereon, of a head revoluble upon a suitable stem and adjustably connected with the base-plate, substantially as and for the purpose specified.

5. In a box-former, the combination, with a base-plate having adjustable jaws mounted thereon, of a head connected thereto, and revolubly mounted on a stem adjustably connected with a standard by a pivot at right angles to the stem, substantially as and for the purpose specified.

6. The combination, with the former proper, of the head E, set-screw e^2, stem D, clamp C, and standard B, substantially as and for the purposes specified.

7. The combination, with the stem D, carrying a suitable former, and standard B, of

the clamp C, composed of the two parts *c* and *c''*, pivotally connected and terminating in abutting disks, one of which is slotted to receive the clamp-screw c^3, screwing into the other, substantially as and for the purposes specified.

8. The combination, with the base-plate F, of the jaws *g*, adjustably secured thereon, and the jaws *g'*, adjustably secured on the jaws *g*, substantially as and for the purpose specified.

MERRICK F. WILSON.

Witnesses:

W. C. CORLIES,

IRVINE MILLER.