(No Model.)

D. & D. C. WHEELER.

MANUFACTURE OF HAT FRAMES AND BODIES.

No. 280,980. Patented July 10, 1883.

Fig. 1.

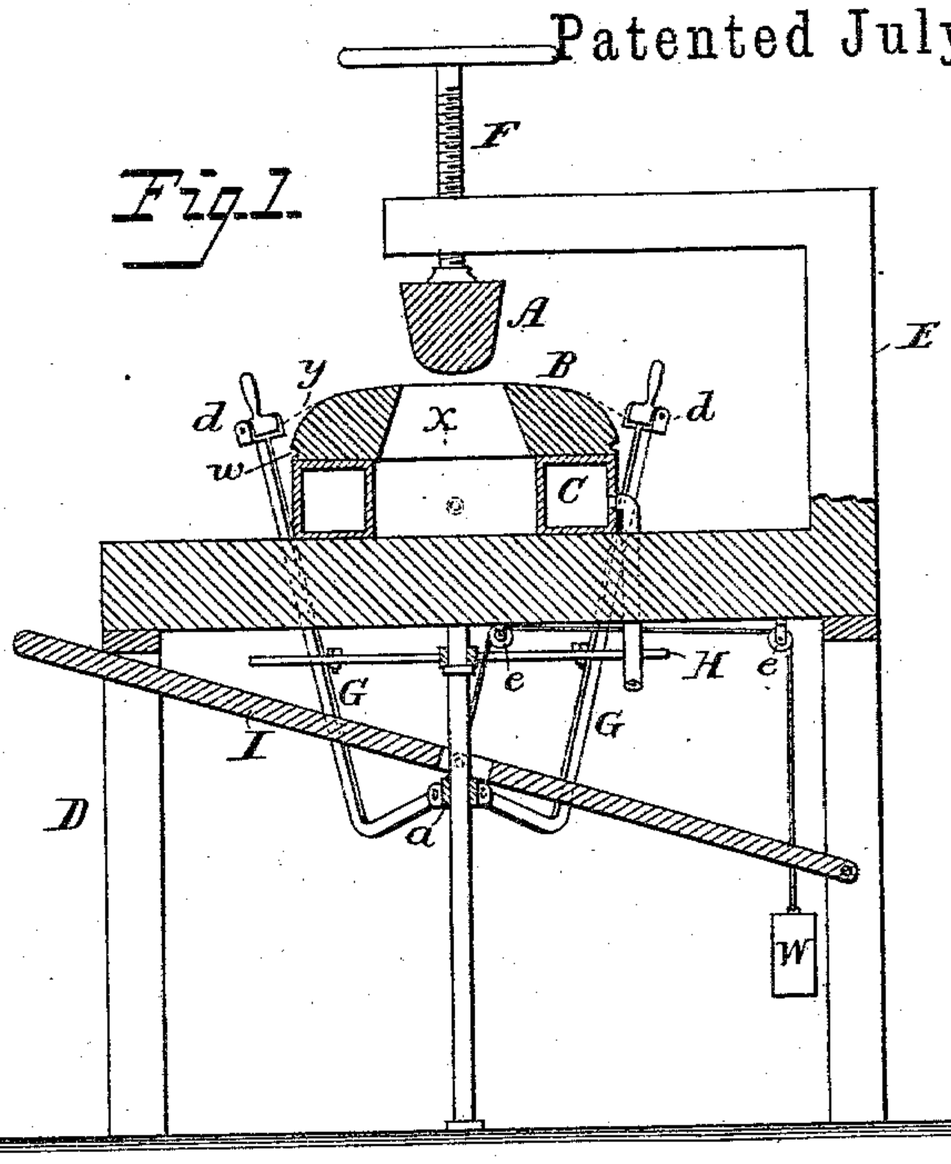

Fig. 2.

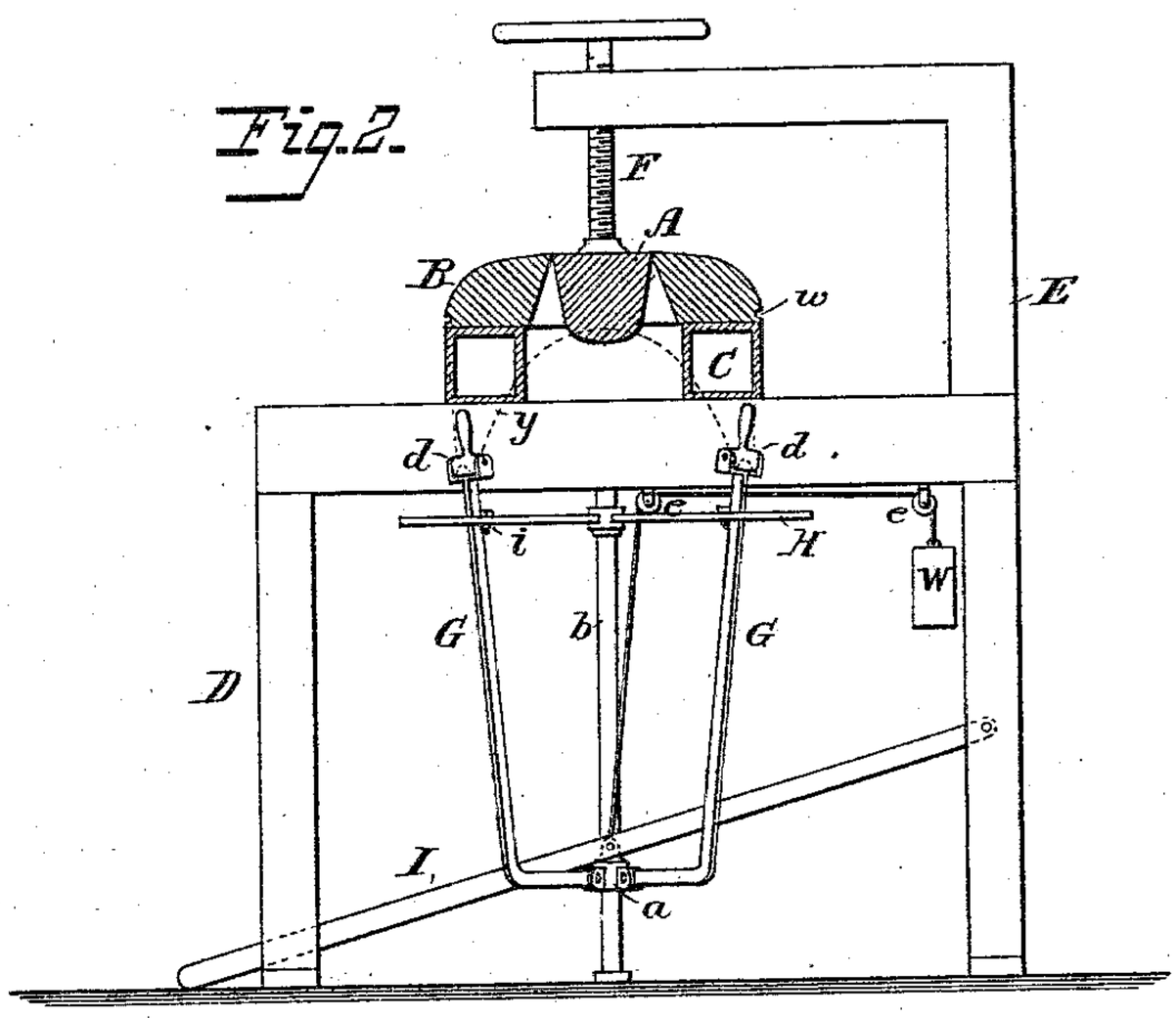

Fig. 3.

Attest:
Courtney A. Cooper.
F. E. Lansmann.

Dwight C. Wheeler,
David C. Wheeler,
Inventors:
By Charles E. Foote
Atty

UNITED STATES PATENT OFFICE.

DWIGHT WHEELER AND DAVID C. WHEELER, OF BRIDGEPORT, CONN.

MANUFACTURE OF HAT FRAMES AND BODIES.

SPECIFICATION forming part of Letters Patent No. 280,980, dated July 10, 1883.

Application filed October 4, 1882. (No model.)

To all whom it may concern:

Be it known that we, DWIGHT WHEELER and DAVID C. WHEELER, of Bridgeport, Fairfield county, Connecticut, have invented certain Improvements in the Manufacture of Hat Frames and Bodies, of which the following is a specification.

Our invention is an improvement in the manufacture of that class of hats in which the bodies are formed or molded to the proper shape by dies; and our invention consists in the mode and appliances hereinafter fully set forth, whereby we are enabled to effect the shaping of the bodies more rapidly and at less expense for time, labor, and machinery than by ordinary modes and apparatus.

In the drawings which form part of this specification, Figure 1 is a sectional elevation, showing one form of apparatus which may be employed in carrying out our invention. Fig. 2 is a part sectional elevation of the same, the parts in a different position. Fig. 3 is a sectional plan.

In forming hat-bodies of burlap or other material it is common to use two corresponding male and female dies of the precise shape of the hat to be formed, and to bring the dies gradually together upon a sheet of burlap, while the latter is stretched and manipulated by two operators for the purpose of distending it and working out the folds and wrinkles as the dies approach each other. This operation is tedious, the dies are expensive, and skilled workmen only can be successfully employed. To avoid the objections incident to this process, we discard the ordinary male and female dies formed to correspond to the hat, and use instead a hat-block, A, and a female die, B, with an upper face corresponding to the form of the brim, and with a central opening, *x*, adapted to admit the block, and we dispense with the manipulation of the sheet of burlap or body material *y*, and instead maintain it mechanically under a tension, while permitting it to yield to the movements of the block. The die B rests upon a steam-box, C, supported by a suitable stand, D, and a projecting arm, E, of the stand carries a screw, F, or other device whereby the block A may be forced downward into the opening *x*. The burlap is distended by means of a series of L-shaped arms, G, each hung at the inner end to a sleeve, *a*, sliding on a rod, *b*, beneath the stand, in a line with the screw, and provided at the outer end with an eccentric clamp, *d*. The arms G are guided in a frame, H, having radial slotted arms, through which said arms G extend, as shown; and a weight, W, connected to a cord attached to the sleeve *a*, and extending over pulleys *e e*, serves as a means of drawing the sleeve upward on the guide-rod *b* and of distending the arms. The arms may be depressed by means of a treadle or foot-lever, I, bearing on the sleeve *a*, as shown. The corners of the sheet *y* are secured to the ends of the arms G when the latter are elevated and spread, as shown in Fig. 1. The treadle I is then depressed to carry the arms to the position shown in Fig. 2, thereby stretching the sheet tightly over the face of the die B. The block A, of any suitable form, is then placed upon the sheet above the opening *x*, and is forced into the latter by turning the screw F, the pressure being maintained on the treadle, so as to prevent any creasing or wrinkling of the sheet, but not so positively as to prevent a slight yielding of the arms when necessary to prevent rupture of the material. By this means the body will be quickly molded upon the block A without creases or wrinkles, and the brim will simultaneously assume the shape of the die B. After the parts are in the position shown in Fig. 2, a cord is passed around the sheet to draw it into a groove, *w*, in the die B and hold the sheet in place until set to the required shape, when the pressure is removed from the treadle, the ends of the sheet are unclamped, the cord untied, and the completed body removed prior to the formation of another.

We have found that this mode of manufacture is applicable to the formation of bodies of the most irregular shapes, and that such shapes can be formed as expeditiously and readily as those of a more uniform character; that but one attendant is required at a machine, (when only one machine is used,) and that ordinary unskilled workmen will produce better results with this mode than the

skilled operatives heretofore required in the old process. The necessity of using expensive and carefully-fitted dies is also avoided.

We have shown the appliances above described to illustrate one means of carrying out our improved process; but we do not confine ourselves to the use of such devices, as others may be substituted therefor with like result. Thus a toggle may be substituted for the screw F, securing a quicker action in depressing the block A, and weights attached to cords having clamps for securing the ends of the sheet may be substituted for the tension devices shown.

To regulate the tension imparted to the sheet of material, we provide the frame H with adjustable slots *i*, by which the inward movements of the arm G may be limited or defined, a greater tension being secured in proportion as the arms G are more widely spread as they are carried downward.

We are aware that felt bodies, after being partly formed, are blocked and molded to the crown and brim piece by bringing an open former or ring over the crown-piece. Our invention is distinguished from this by the fact that we form the body from a single flat piece, and by the further fact that our process is for forming the body material into shape, said body being afterward covered, whereas in that described the entire hat itself is molded directly of felt.

We claim—

1. In the manufacture of hats, drawing the body material in the form of a flat sheet tightly over a brim-die having a central opening, and then forcing a body-block into said opening while the material is maintained in a state of tension, substantially as set forth.

2. The combination of a stationary brim-die having an opening, *x*, appliances whereby the sheet of material may be tightly drawn over said die, a body-block, and device for forcing the latter into the die-opening upon the sheet while the latter is in a state of tension, substantially as set forth.

3. The combination of the die, arms, operating devices, and frame H, as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

DWIGHT WHEELER.
DAVID C. WHEELER.

Witnesses:
L. S. CATLIN,
JOHN M. OTIS.