

No. 787,042.

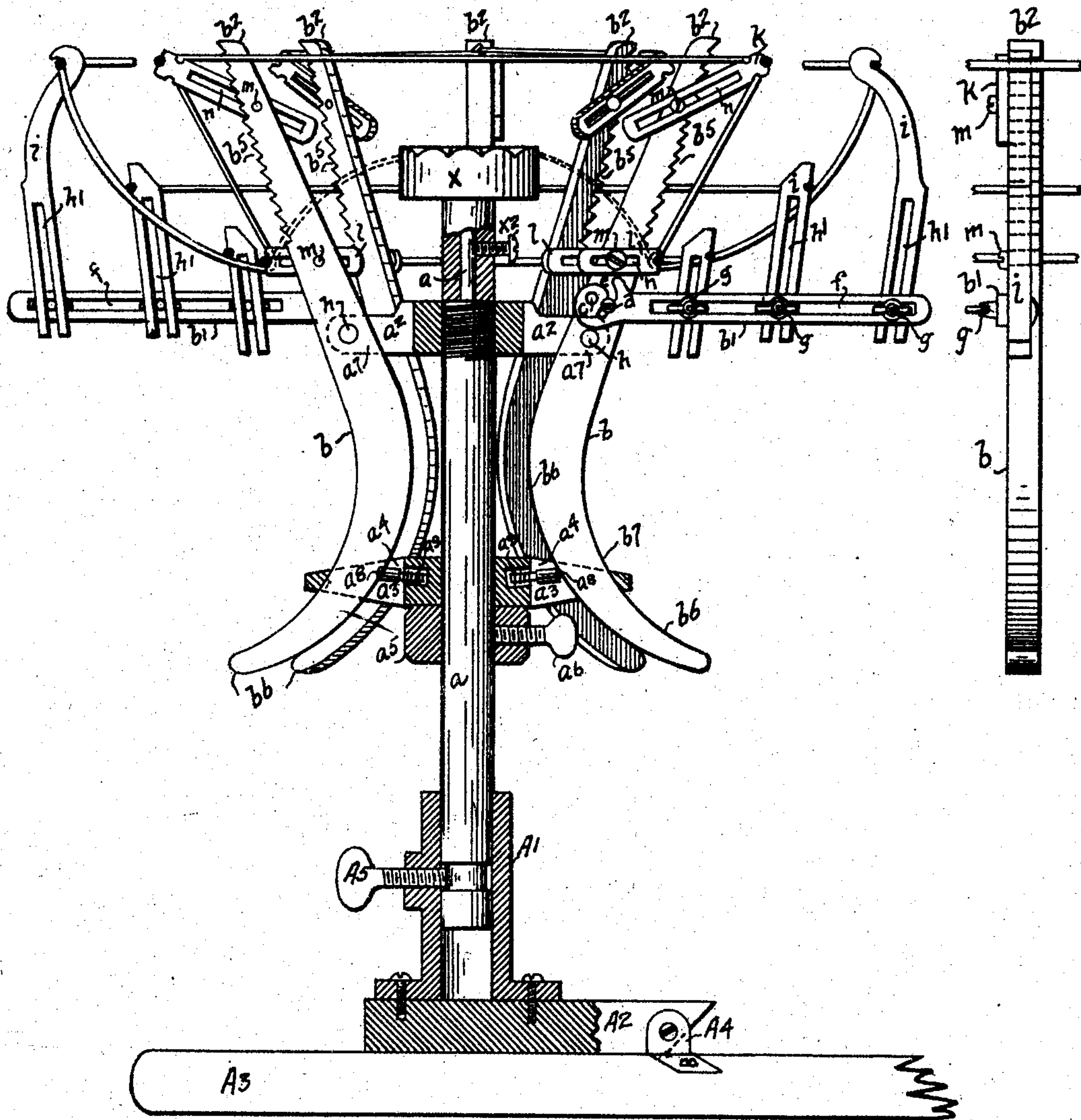
PATENTED APR. 11, 1905.

E. A. HOWE.  
HAT FRAME FORMING DEVICE.  
APPLICATION FILED OCT. 24, 1904.

2 SHEETS—SHEET 1.

Fig. 1

Fig. 3



WITNESSES:

M. C. Frankland,  
H. M. Lathrop.

Edward A. Howe. INVENTOR.

BY *Edward A. Howe*  
ATTORNEY.

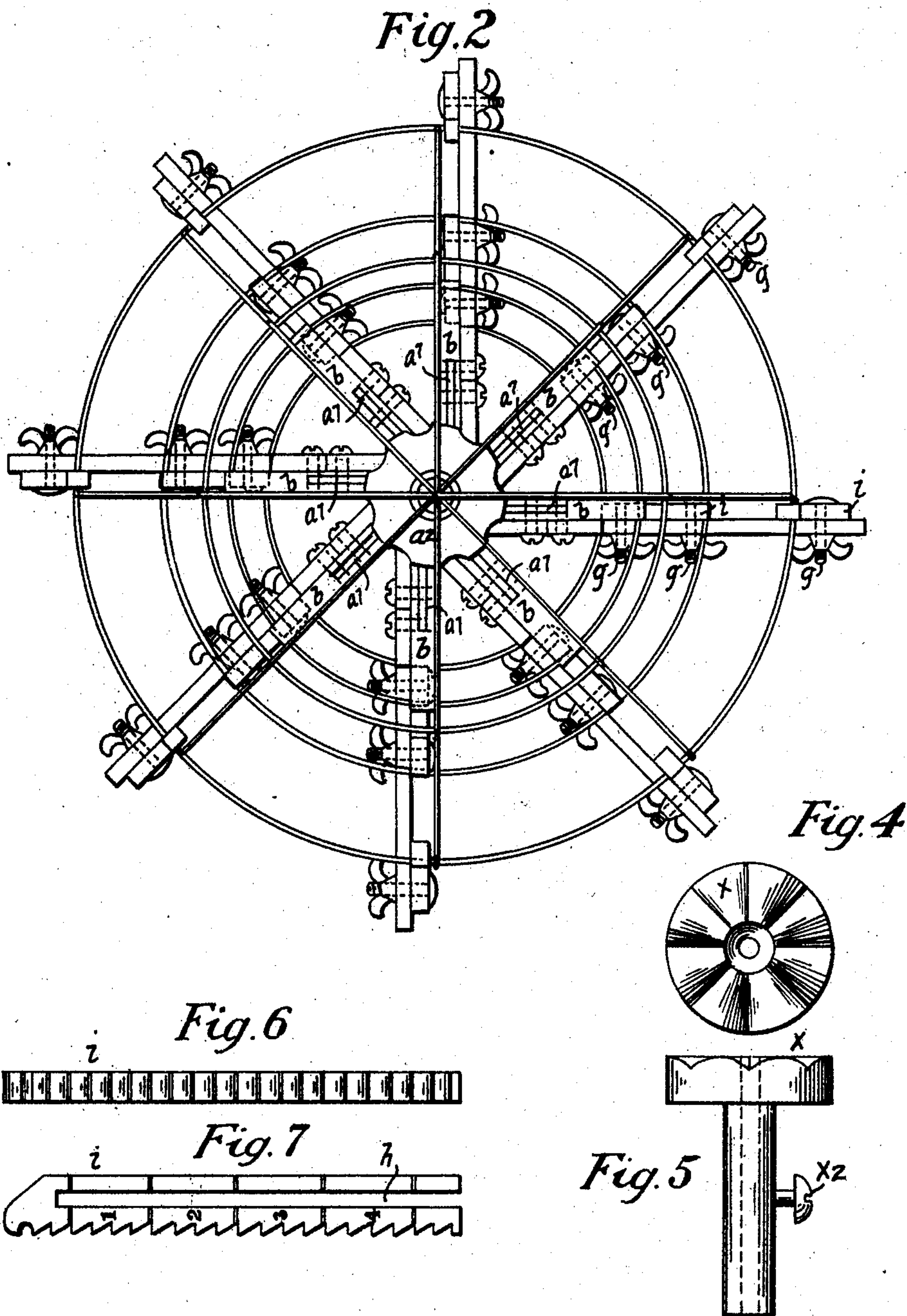
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# UNITED STATES PATENT OFFICE.

EDWARD A. HOWE, OF NEW YORK, N. Y.

## HAT-FRAME-FORMING DEVICE.

SPECIFICATION forming part of Letters Patent No. 787,042, dated April 11, 1905.

Application filed October 24, 1904. Serial No. 229,822.

*To all whom it may concern:*

Be it known that I, EDWARD A. HOWE, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Hat-Frame-Forming Devices, of which the following is a specification.

My invention relates to certain new and useful improvements in a device or former for use in the making of wire hat-frames.

The present invention offers certain improvements to the structure shown, described, and claimed in my former patent, No. 759,996, bearing date of May 17, 1904, to which the present improvements are particularly related.

My present invention consists of the parts and the construction and combination of parts, which I will hereinafter describe and claim.

Referring to the accompanying drawings for a more complete explanation of my invention, and in which similar characters of reference indicate like parts throughout the several views, Figure 1 is a sectional side view of my improved wire-hat-frame-forming device; Fig. 2, a plan view thereof; Fig. 3, a front view of arm  $b$  with its connecting parts. Figs. 4 and 5 are views of crown-block. Figs. 6 and 7 are views of different details of the construction which I employ.

In carrying out my present invention I prefer to use the general form and construction of the salient features of my aforesaid prior invention, wherein I provide a base  $A'$ , suitably fastened to base-block  $A^2$ , which may be fastened to table-top or bench  $A^3$  by hinge-plates  $A^4$ . The base-block  $A^2$  is provided on the hinge end with a suitable stop which will allow the center of gravity of the machine to fall outside of the base, thereby holding former in tilted position. An upright member  $a$  is adapted to engage base  $A'$  and may be secured in position by set-screw  $A^5$ . Near the top of this upright member is secured a circular plate  $a^2$ , and mounted on and vertically movable on the upright member  $a$  is a supplemental plate or shifting board  $a^3$ , provided at its perimeter with radially-arranged recesses  $a^4$ , and below the supplemental plate

$a^3$  is a vertically-movable collar or disk  $a^5$ , having a set-screw  $a^6$ , by means of which it may be secured to the upright member  $a$  at any desired point, and by means of the disk or collar  $a^5$  the plate  $a^3$  may be supported on the upright member  $a$  and at a higher or lower point, as hereinafter described.

The plate  $a^2$  is provided at its perimeter with radially-arranged hinge-arms  $a^7$ , on each of which is pivoted, on a pin  $h$ , a vertically-arranged arm  $b$ , (eight more or less) of which are employed in the construction shown. The outer side of the upper end portions of said arms are provided with notches or recesses  $b^5$  in the form of construction shown. The upper end portions  $b^2$  of the arms  $b$  are straight, or comparatively so; but the lower portions thereof are curved outwardly to form finger portions  $b^6$ , which pass through the recesses  $a^4$  in the plate  $a^3$  and are held therein in the form of construction shown by their outer walls  $b^7$ , and said finger portions are free to slide through the recesses  $a^4$ , and by moving the plate  $a^3$  vertically the upper end portions  $b^2$  of the arms  $b$  may be adjusted radially, as will be readily understood, the downward movement of the plate  $a^3$  serving to throw the upper end portions  $b^2$  outwardly and the upward movement of said plate to draw said end portions inwardly. The inner sides of the fingers  $b^6$  bear against spring-pressed blocks  $a^8$ , carried in sockets  $a^9$  in the plate  $a^3$ , which forces the finger portions outward and obviates any binding action on same when plate is adjusted.

Each of the arms  $b$  carry substantially horizontal arms  $b'$ , which are adapted to be adjusted on the pivot  $C$  and locked at the desired angle by the screw  $d$ , which passes through the slot  $e$  in the arm  $b'$ . The arm  $b'$  has a longitudinal slot  $f$ , through which passes screw  $g$ , and the latter also passes through the slot  $h'$  of the wire-holders  $i$ . The wire-holders  $i$  may be of various lengths and are adapted to carry the wire composing the brim of the hat-frame.

The arm  $b$  has on its outer face the notches or recesses  $b^5$  to carry the wire of the side of the hat-frame in case the frame is circular in shape; but when the same is oval or any irregular shape holders such as  $k$  and  $l$  may be



used and adjusted to any desired position and clamped thereat to the vertical arm  $b$  by the screws  $m$ , which pass through the slot  $n$ . The holders  $k$  and  $l$  have notches at their outer ends to carry the wires.

In the construction shown the arms  $b$  are fastened to the block  $a^2$  by the outer portion of the radially-arranged hinge-arms  $a^7$ , passing into a slot made to receive them in arms  $b$  and fastened on with a rivet or screw  $h$ , so applied that the arms  $b$  can swing inwardly or outwardly.

The *modus operandi* is as follows: In setting up the former in any desired shape place a pattern hat-frame in position on the former, then press down the shifting board  $a^3$  until the arms  $b$  spread to the size of the circular crown-wire of the pattern hat-frame and hold it firmly in the notches or recesses  $b^5$  on the arm  $b$  at the desired height. By means of the set-screw  $a^6$  secure the collar  $a^5$  below and against the shifting board  $a^3$ . Adjust the wire-holders  $l$  along the slot  $n$  by means of screw  $m$  for the right head size. This completes the form for crown of hat. In forming the brim place the horizontal arms  $b'$  in position corresponding with the wires in the pattern hat-frame, tighten the screw  $d$ , which will secure said arm in position, then place the upright slides  $h'$  in position, so that the recesses at their upper ends pass around and hold the circular wires of the pattern hat-frame. This completes the brim formation. Now press upward on the shifting board and the former will collapse and set the pattern hat-frame entirely free. This is a great improvement over my former patent above cited. Although that device collapsed in substantially the same way, the wire hat-frame was not left entirely free.

In the construction of a hat-frame place the circular crown-wires in position in the notches  $b^5$  in the arms  $b$  at the desired height and which are held in position by a small pinching-spring made for the purpose. Cross-wires are then placed transversely across the ring or band formed by the circular crown-wires and are wound around or tied to said band, then bent downward toward the head-size wire. After placing the head-size wire in position around the notches in the end of wire-holder  $l$  wind the cross-wires around or tie same to the said head-size wire and bend the ends of the cross-wires in the direction the brim requires. Now place the circular brim-wires in position and connect them with the cross-wires by twisting together or tying. This completes the construction of the hat-shape. Push up the shifting board  $a^3$  and the former will collapse and absolutely free the hat-frame. The former

may be then reset ready for the second hat by pushing the shifting board  $a^3$  down until it rests on collar  $a^5$  and commence as before. To form an oval crown, press down the shifting board  $a^3$  until the arms spread to the desired width of crown. Secure the shifting

board  $a^3$  in position by adjusting the collar  $a^5$  under and against the shifting board  $a^3$ . Adjust the slotted wire-holders  $k$  and  $l$  on the main arms  $b$  in the proper position and at whatever angle is required. All but two of the levers are used in forming an oval crown. On the two side main arms  $b$  the notches  $b^5$  in their upper ends are used to hold the oval crown-wire, this being the narrowest part of the crown formation. In making a round-crown hat-frame an adjustable top piece or crown-block  $x$  is used, which can be adjusted at any desired height by the set-screw  $x^2$ , securing same to the upright member  $a$ , which extends above the circular plate  $a^2$ . The top of the crown-block  $x$  is fluted to hold in position the cross-wires. In practice the cross-wires are placed in these grooves, then drawn downward and outward to the head-band, to which they are tied or otherwise fastened. The ends of said wires are then bent outward to form the rim, as shown in Fig. 1.

The improved features of this device are the rigid arms  $b'$ , provided with adjustable wire-holders which may be set at any desired point to hold a wire and securely locked or fastened in that position. After the former has been set up in any particular shape the main arms  $b$ , with all their connecting parts in position, can be removed from the circular plate  $a^2$  by removing the fulcrum  $h$ , numbered, and set aside for future use in filling duplicate orders. The main arms  $b$  being interchangeable, another set of arms can be set into the former and used on any shape.

In making a hat it is necessary to tilt the former for convenience, and provision has been made by having the base-block  $A^2$  hinged to table-top.

When a shape such as a turban is desired, in which the brim construction requires several circular wires at its perimeter, I employ a wire-holder  $i$ . (Shown in Figs. 6 and 7.)

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

1. A hat-frame-forming device comprising a suitable support, vertical arms centrally pivoted to the same about a common center, adjustable means carried by the arms for increasing the distance of the outer face of said arms from the center of the device, substantially horizontal arms pivoted to the vertical arms near their pivotal points and actuating means whereby the collapsing of the device entirely frees the finished hat-frame.

2. A hat-frame-forming device comprising a suitable support, vertical arms centrally pivoted to the same about a common center, adjustable means carried by the arms for increasing the distance of the outer face of said arms from the center of the device, substantially horizontal arms pivoted to the vertical arms near their pivotal points and means for moving the vertical arms inward and outward.



3. A hat-frame-forming device comprising a suitable support, vertical arms centrally pivoted to the same, adjustable wire-holders carried by the arms, and substantially horizontal arms pivoted to the vertical arms near their pivotal points the said horizontal arms carrying adjustable wire-holders.

4. A hat-frame-forming device comprising a suitable upright support a collar screwed thereto, vertical arms centrally pivoted to the collar and adapted to oscillate to and from the support, a sliding collar on the support adapted to oscillate the vertical arms, adjustable rigid wire-holders carried by the levers, substantially horizontal rigid adjustable arms pivoted to the vertical arms, and wire-holders carried on the horizontal arms.

5. A hat-frame-forming device comprising a suitable support, a collar secured thereon, upright notched vertical arms having curved lower ends, centrally pivoted to the collar and adapted to oscillate radially, a movable collar on the support and having recesses to receive the lower ends of the vertical arms, adjustable rigid wire-holders for the upper ends of the

vertical arms, substantially horizontal rigid arms, adjustable to the vertical arms near their pivotal points, adjustable wire-holders carried by the horizontal arms.

6. A hat-frame-forming device comprising 30  
a suitable upright support, a crown-block adjustable in said support, pivoted oscillating levers connected with the support and substantially horizontal arms, carrying adjustable wire-holders, and carried by the levers. 35

7. A hat-frame-forming device comprising a suitable upright support, pivoted oscillating levers connected with the support and substantially horizontal arms, carrying adjustable wire-holders and carried by the levers; the 40  
upright support adapted to turn in a base, the base hinged and a stop for holding the former in a tilted or upright position.

This specification signed and witnessed this 17th day of October, A. D. 1904.

EDWARD A. HOWE.

In presence of—

EDWARD VAN WINKLE,  
W. N. RICHARDSON.