

988,592.

2 SHEETS—SHEET 1.

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By

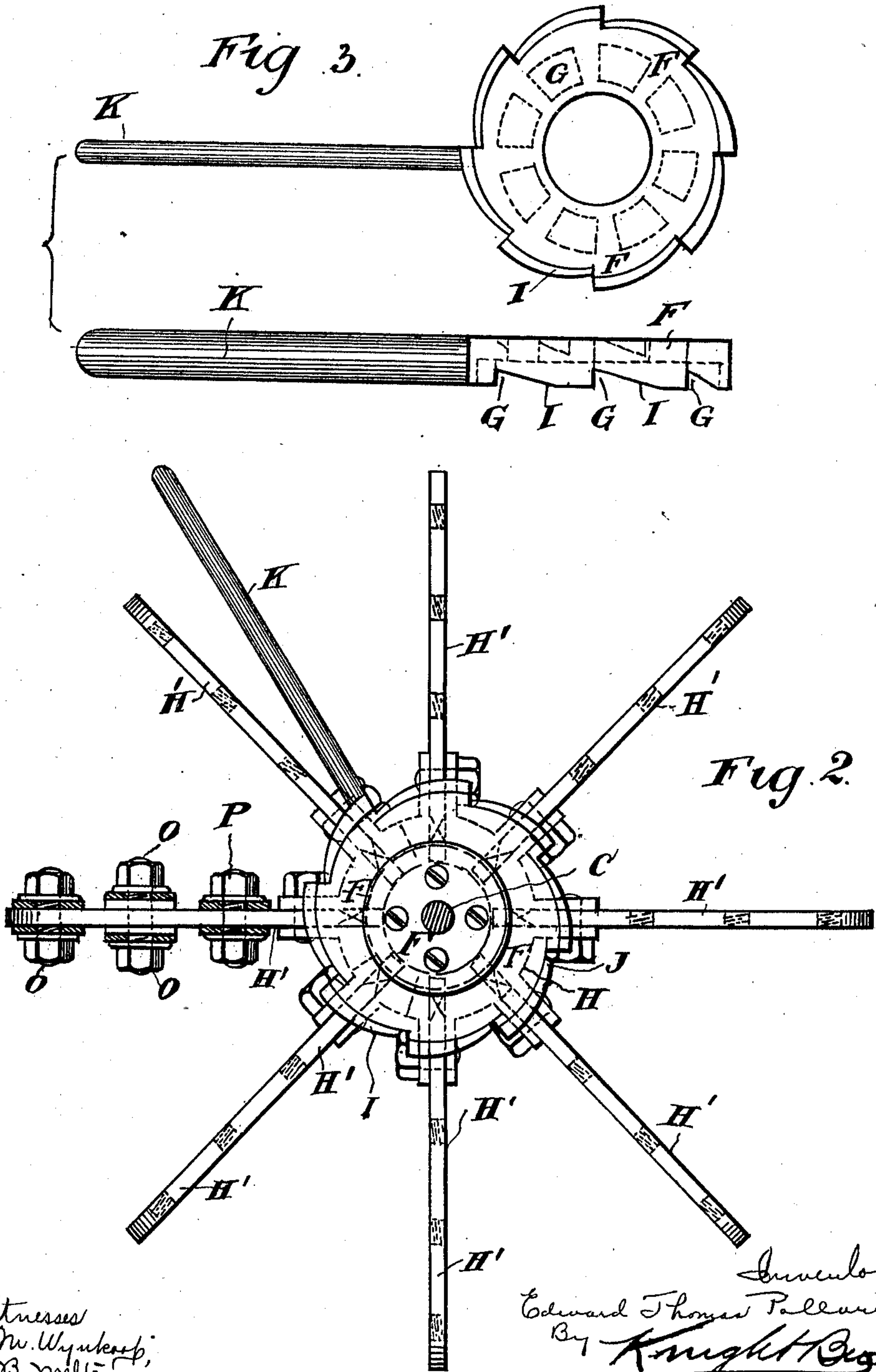
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E. T. POLLARD.  
SHAPING MACHINE FOR HATS.  
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2 SHEETS-SHEET 2.



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# UNITED STATES PATENT OFFICE.

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## SHAPING-MACHINE FOR HATS.

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Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed June 10, 1909. Serial No. 501,373.

*To all whom it may concern:*

Be it known that I, EDWARD THOMAS POLLARD, of 7<sup>E</sup> Hyde Park Mansions, Highbury, London, England, have invented certain new and useful Improvements in and Connected with Shaping-Machines for Hats and the Like, of which the following is a specification.

This invention relates to improvements in shaping machines for the production of wire frames for hats and the like, and has for its object to expedite the making of the same and to facilitate their removal after being formed, and so obtaining a much greater output, thereby reducing the cost of production.

The invention consists of an upright stand or support provided with a sole plate, and carrying a spindle, which has a removable top, with suitable cuts or notches over which the wire requisite for constituting the frame, or shape is carried, when the frame, or shape is to be formed with a crown. Around this stand, but independent of it, is fitted a circular disk, or cam plate, suitably notched or recessed on its underside, and formed on its outer edge with cam shaped surfaces, and having an operating lever forming part thereof. Immediately under this circular disk or cam plate and concentric with it is another circular disk, which is part of the aforesaid stand, formed with snugs, or eyes, to which a series of arms or levers are pivoted. These said arms or levers are formed with two sets of suitable projections, which engage with the notched or recessed underside and also with the cam shaped surfaces on the outer edge of the aforementioned cam plate. Bolted or otherwise connected to each of these arms or levers are two, three, or more adjustably slotted arms, or fingers, which are capable of being arranged at different heights and angles, and having hook ends to hold the wire, which constitutes the frame or shape during the formation thereof. In forming the frame or shape, the said wire is carried in the hollow of the hooks of such of these slotted fingers as are necessary to obtain the desired frame or shape, and when complete, and the frame or shape of the hat, or the like, is to be removed the fingers are all moved toward the center by means of the operating lever on the cam plate. This cam plate acts on the one set of projections of the arms or levers aforesaid, the said projections are

those which engage with the recesses on the underside of the cam plate. This action of the cam plate depresses the projections on the ends of the arms, which are beyond the points where the said arms are pivoted to the snugs or eyes, on the circular disk, which forms part of the stand aforesaid. The raising of these arms about their pivots causes all the fingers, which are fastened thereto, to move inward toward the center, thus allowing the frame or shape to be freely lifted off.

The cam shaped surfaces on the outer edge of the aforementioned cam plate are so formed that they are forced up against the other set of projections, on the arms or levers (which are pivoted to the stand), when the arms or levers are in their normal position, thus locking them. When the operating lever is moved this rotates the cam plate, thus tilting the said arms or levers upward, and throwing the last mentioned set of projections on the said arms or levers inward. As the cam plate rotates thus, the cam shaped surfaces on its outer edge so fall away, as to allow of the last mentioned set of projections moving inward without obstruction.

In order that my invention may be fully understood and readily carried into effect, I have hereunto appended two explanatory sheets of drawings, of which—

Figure 1 is part elevation and part vertical section of the stand or shaping machine embodying my invention. Fig. 2 is a plan and part horizontal section taken on the line *a, b*, Fig. 1, with the fingers removed. Fig. 3 is a plan with side view respectively of the cam and operating handle forming part of the mechanism hereafter more fully referred to and described.

The said stand B carries a circular disk, or cam plate F, having notches, or recesses G formed on its underside, as seen in Figs. 1 and 3, which engage with the one set of projections on the levers H<sup>1</sup>, so that when the cam plate F is rotated by means of the operating lever K, the aforesaid projections, on the levers H<sup>1</sup>, are depressed by the ratchet like nature of the notches G. Beneath this disk F is another disk H, forming part of the stand B, shown in dotted lines Figs. 1 and 2. This disk carries the snugs or eyes to which the arms or levers H<sup>1</sup> are pivoted. When these arms or levers H<sup>1</sup> are pivoted in positions, the projections



on their inner ends, which engage with the notches or recesses G in the cam plate F stand above this last mentioned disk H. Also on these same levers, when in the above mentioned position, the shoulders J on the levers H<sup>1</sup> are in contact with the cam shaped outer edge I of the cam plate J, the surface of contact being that part of the cam shaped surface farther away from the center. The shoulders J on the levers H<sup>1</sup> being thus prevented from moving inward, the levers H<sup>1</sup> cannot move upward, they are locked until the cam plate F is moved through the requisite arc, thus moving away the cam surfaces in contact with the shoulder J, and allowing the said shoulder to move unobstructed inward.

The notches or recesses G in cam plate F are designed ratchet fashion, to engage with the inmost projections on arms or levers H<sup>1</sup> so that when the cam plate F is moved through the above mentioned arc these projections are depressed, thus raising the outer ends of arms H<sup>1</sup> and moving the fingers L inward toward the center if the fingers L in Fig. 1 were thus moved toward the center, it will be seen that the wire form or shape of the hat or the like could be lifted off without obstruction.

The levers or arms H<sup>1</sup> are hinged or pivoted to the disk H forming part of stand B at the point M, while the lower or heel extensions H<sup>2</sup> are provided with adjusting screws N when the machine is in the locked position, as seen in Fig. 1, these screws N are adjusted by being screwed against the stand B thus forcing the shoulders J on arms H<sup>1</sup> on to the cam surface thus taking up any wear and preventing any play or shake in the levers H<sup>1</sup>.

The fingers L consisting of six for each arm are each formed with a horizontal slot L<sup>1</sup> as seen in Fig. 1, and a bolt or stud passes through the slot L<sup>1</sup> of the finger L connecting it to the arm H<sup>1</sup>, and a nut P retains it in position, as seen in Figs. 1 and 2. The object of the said slot L<sup>1</sup> is to enable the fingers L being raised or lowered to different heights and angles to suit the kind of frame required to be formed. The said fingers L have their upper extremities formed in the shape of a hook L<sup>2</sup> designed to hold the wire Q which constitutes the frame of the hat during the formation.

It will be seen in Fig. 2 that though the machine embodying my improvements is designed with eight arms or levers, a greater or less number may be used to suit various requirements.

Claims.

1. A device for forming wire-hat-frames

comprising a support, a plurality of radially disposed arms pivotally mounted on the support, said arms having projecting portions adjacent the fulcrums thereof; wire holding arms secured to said radial arms, a rotatable head having cam elements adapted to cooperate with said arm projections to raise or lower the radial arms to adjust the wire holding arms into and from position, and a means for actuating the rotatable head.

2. A device for forming wire-hat-frames comprising a support, a plurality of radially disposed arms pivotally mounted on the support and provided with projecting cam engaging members, wire holding arms adjustably secured to said radial arms, a rotatable head having two series of cam elements adapted to cooperate respectively with the radial arm projections to raise or lower the radial arms to adjust the wire holding arms into and from position, and a means for actuating the rotatable head.

3. A device for forming wire-hat-frames comprising a support, a plurality of radially disposed arms pivotally mounted on the support, said arms having two series of projecting portions disposed in different planes, wire holding arms adjustably mounted on said radial arms, a disk rotatable on the support and having cams on its periphery and underside adapted to cooperate respectively with the projecting portions on the radial arms to adjust the wire holding arms into and from position, and a lever for actuating said rotatable head.

4. A device for forming wire-hat-frames comprising a support, a plurality of radially disposed arms pivotally mounted on the support, said arms having vertical and substantially horizontal cam engaging surfaces, and depending members; wire holding arms adjustably mounted on said radial arms, a disk rotatably mounted on said support and having cams on its periphery and underside, adapted to cooperate respectively with the cam surfaces on the radial arms to adjust the wire holding arms into and from position, set screws on the depending portions of the radial arms adapted to cooperate with said support and secure the wire holding arms in position, a central and removable wire holder secured directly to the support, and a lever for actuating the rotatable disk.

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

EDWARD THOMAS POLLARD.

Witnesses:

JOHN LIDDLE,

JOHN TRAIN LIDDLE.