

No. 759,996.

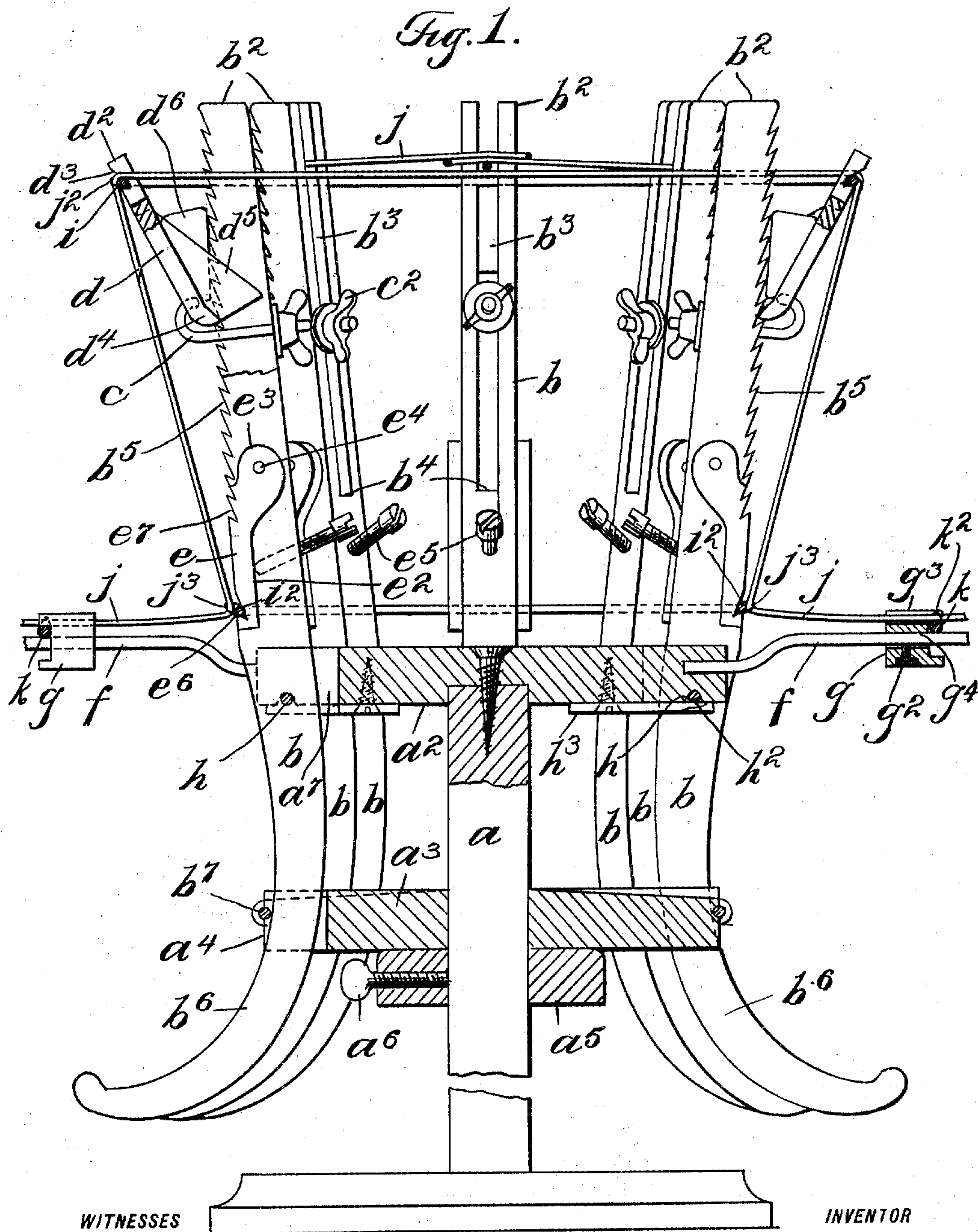
PATENTED MAY 17, 1904.

E. A. HOWE.
HAT FRAME FORMING DEVICE.

APPLICATION FILED DEC. 17, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES

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Fig. 2.

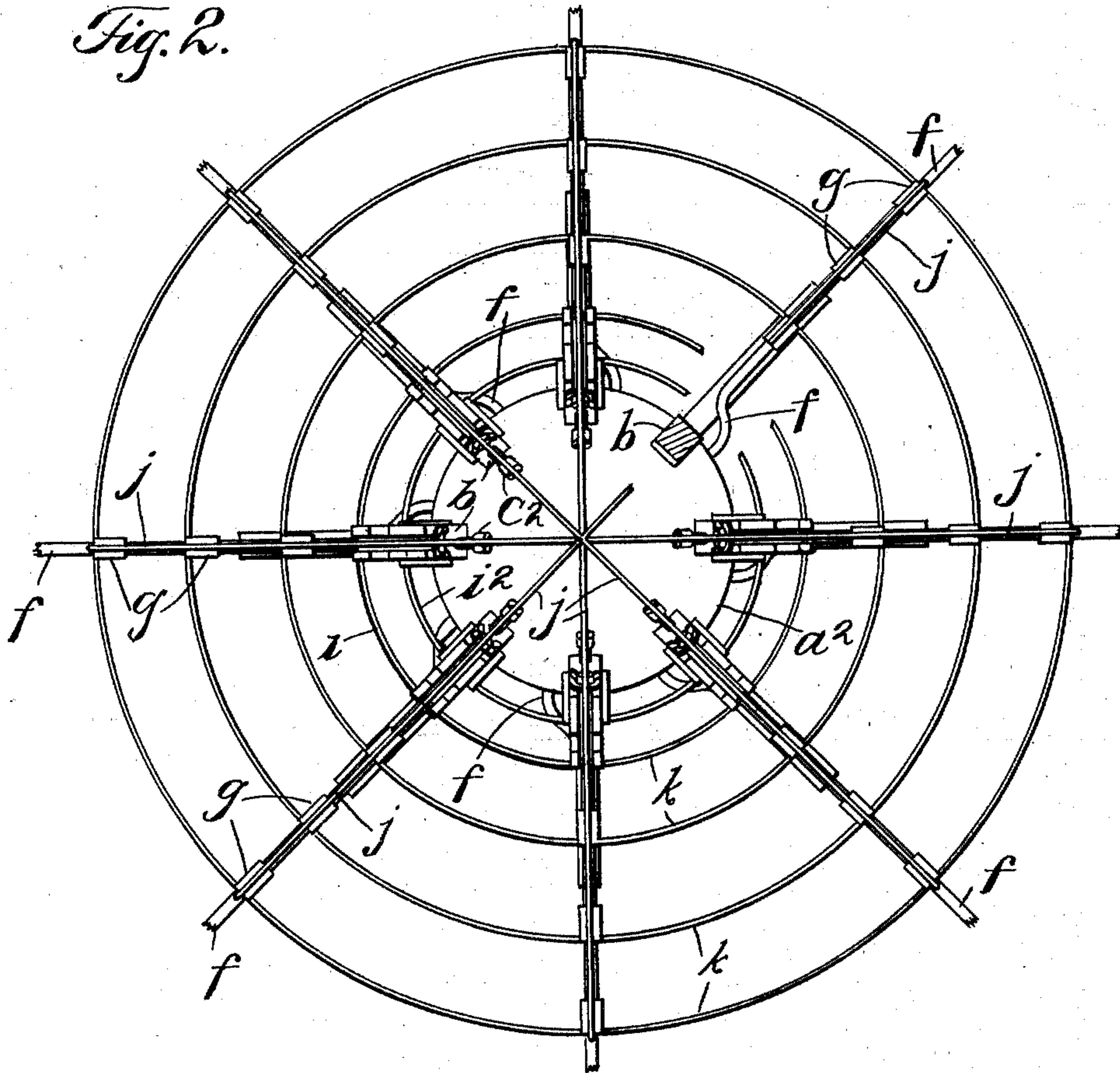


Fig. 3.

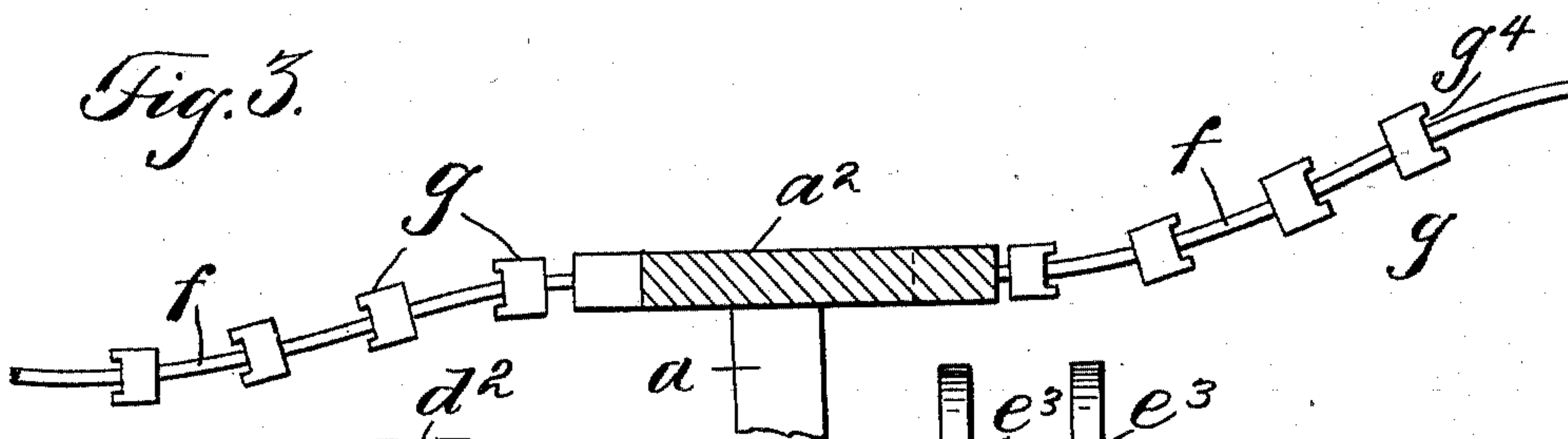


Fig. 4.

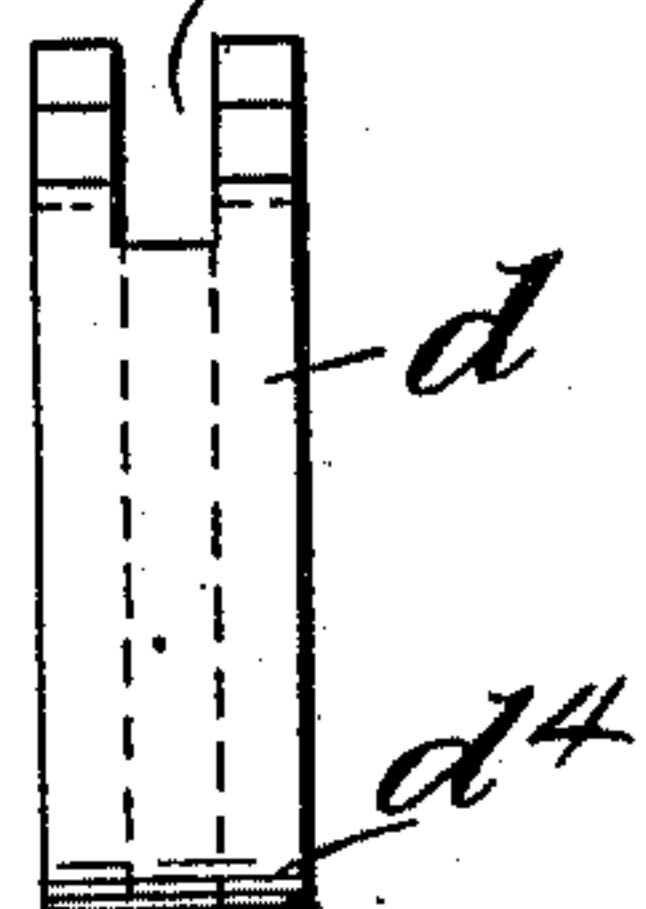
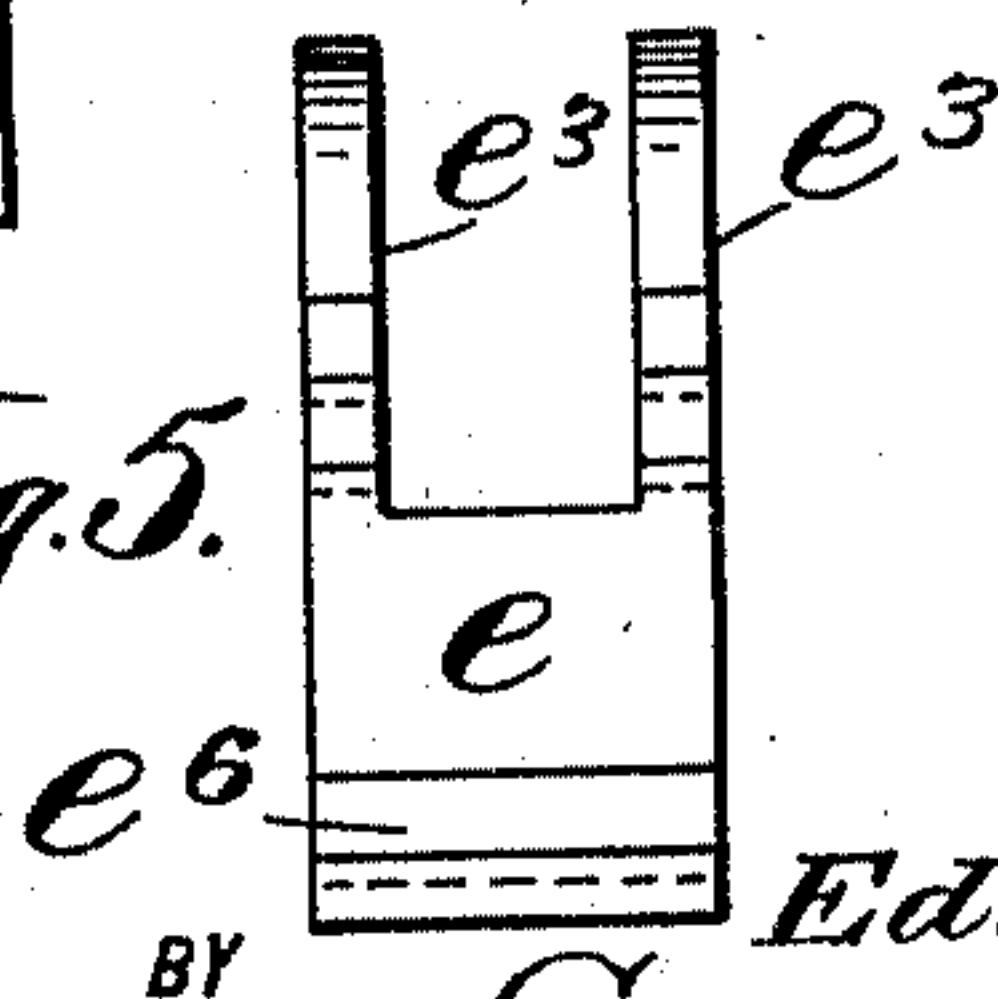


Fig. 5.



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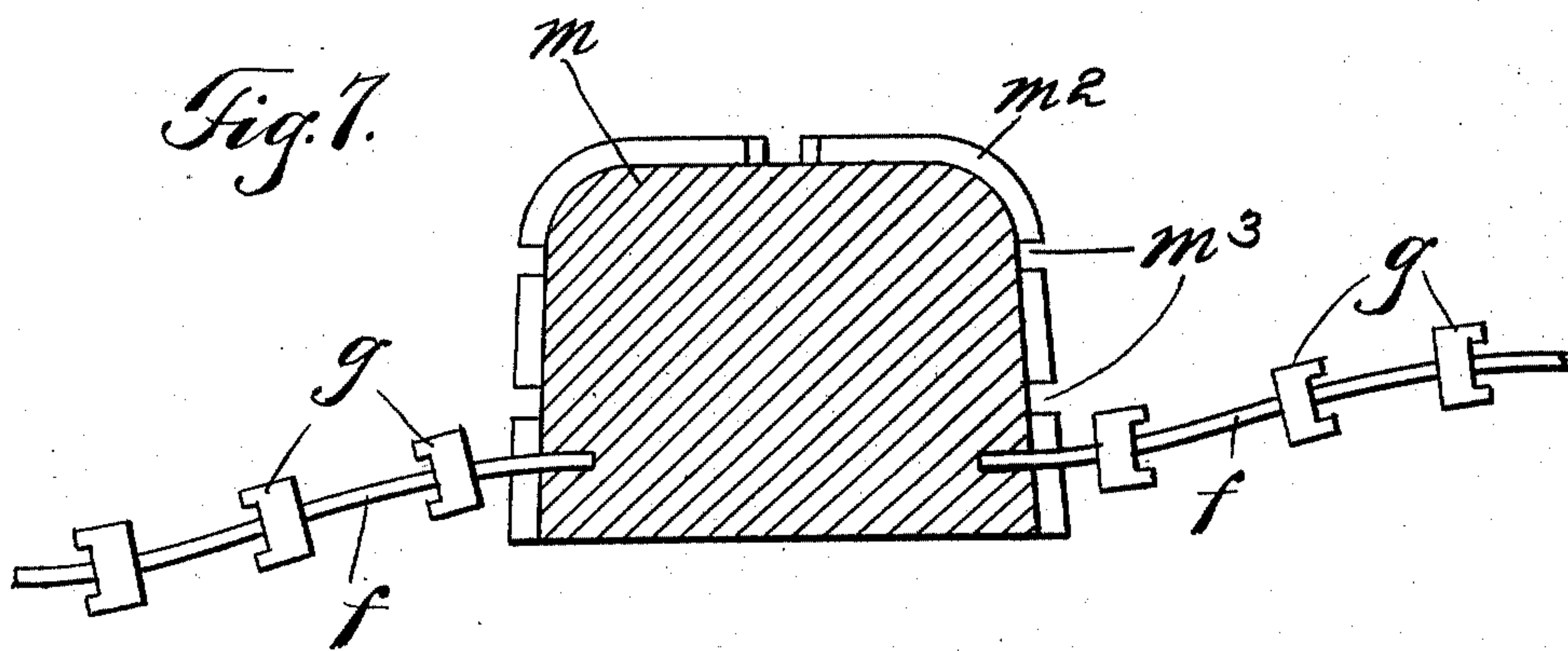
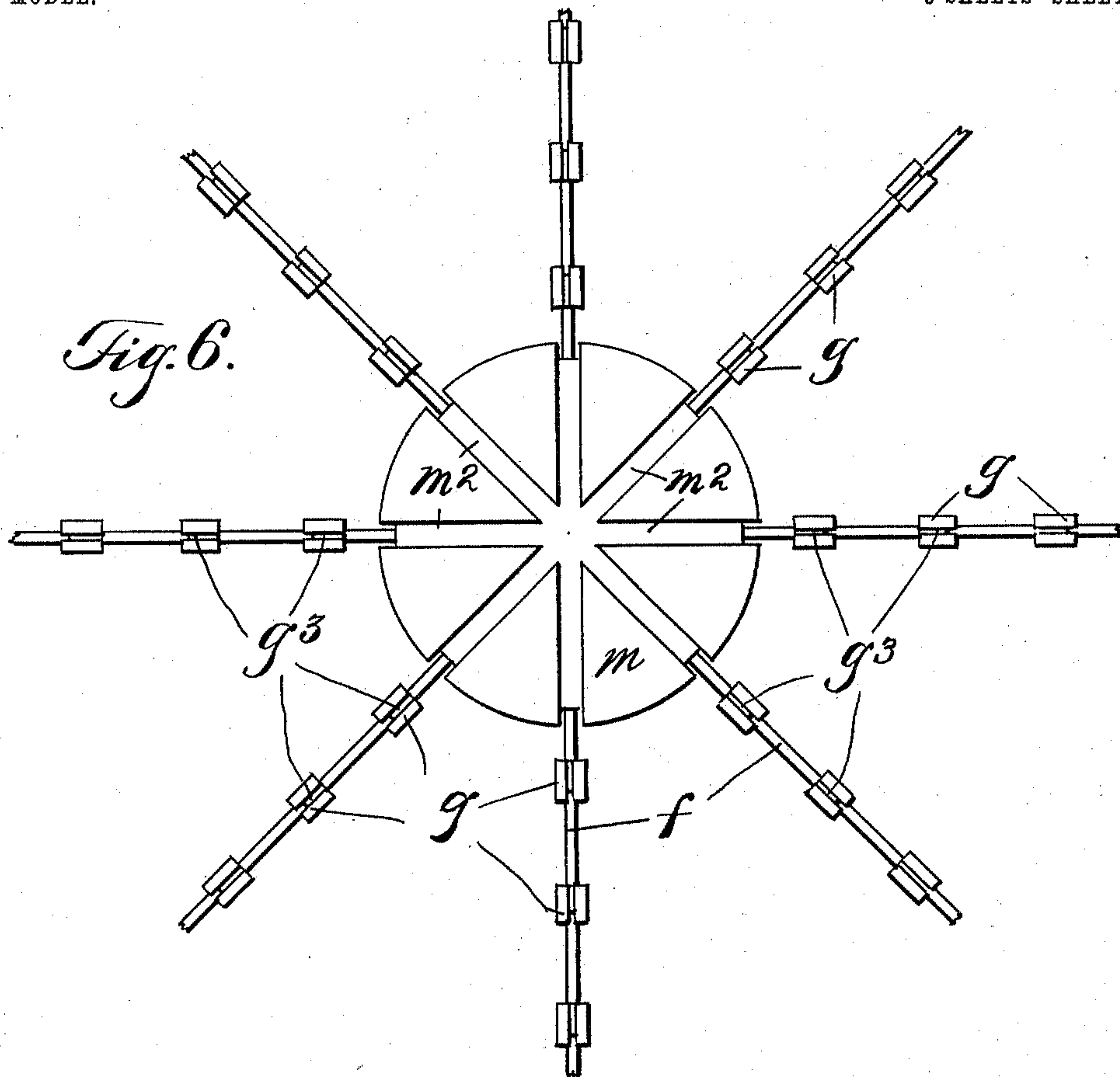
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3 SHEETS—SHEET 3.



WITNESSES

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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. 759,996, dated May 17, 1904.

Application filed December 17, 1903. Serial No. 185,473. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. HOWE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Hat-Frame-Forming Devices, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved device or former for use in the making of wire hat-frames for ladies' hats; and with this and other objects in view the invention consists in a device of the class specified constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a sectional side view of my improved wire-hat-frame-forming device; Fig. 2, a plan view thereof, part of the construction being shown in section and part broken away; Fig. 3, a view similar to Fig. 1, showing a detail of the construction. Figs. 4 and 5 are face views of different details of the construction which I employ; Fig. 6, a plan view of a modified form of my improvement, and Fig. 7 a sectional side view thereof.

In the practice of my invention I provide a suitable base or support with which is connected in any desired manner an upright member a , on the top of which, in the construction shown in the drawings, is secured a circular plate a^2 , and mounted on and vertically movable on the upright member a is a supplemental plate 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 recesses a^4 , in each of which is placed a vertically-arranged arm b , eight of which are employed in the construction shown, and the upper end portions b^2 of these arms are provided with radially-arranged slots b^3 , which extend downwardly in the form of construction shown to a predetermined point b^4 , and the outer sides of the upper end portions b^3 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 end 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 a wire or band 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 upper end portions b^2 of the arms b are each provided with a hook c , the shank of which passes inwardly through the slot b^3 in said arm and is provided with a thumb-nut c^2 , and each of the said arms is also provided with an adjusting device d , a face or front view of which is given in Fig. 4 and the upper end of which is slotted, as shown at d^2 , and provided in its face or outer side with a notch or recess d^3 , and the lower end thereof is provided with a nose d^4 , adapted to fit in the recesses b^5 , and the inner side portions thereof are provided with wings or guide-plates d^5 , which overlap the sides of the upper end portion b^2 of the arm b , with which the adjusting device is connected, and in practice the said device is held in place by the hook c , as clearly shown in Fig. 1, and a wedge-shaped device d^6 is inserted between it and the arm to hold it in any desired position. The adjusting devices d are intended to adjust or regulate the size of the crown of a hat-frame, and other adjusting devices e are employed for

the purpose of regulating or adjusting the head-band of the hat-frame. The adjusting devices e consist of a block adapted to fit in a corresponding recess e^2 , with which each of the arms b is provided, and the block is provided with ears e^3 , which overlap the sides of the arm or arms and are connected therewith by a pin or bolt e^4 , and as thus constructed the adjusting devices e are free to swing radially, and each of the arms b is provided with a set-screw e^5 , which passes radially therethrough and is adapted to bear on the adjusting device e and to force the lower end thereof outwardly, and each of said adjusting devices is provided in its lower end with a notch or recess e^6 , and, as shown in the drawings, other notches or recesses e^7 are formed therein at or near the top thereof.

The lower ends of the adjusting devices e or of the recesses e^2 are preferably slightly above the plate a^2 , and said plate a^2 in the form of construction shown is provided with a plurality of radial arms f , equaling in number the arms b , and these arms f are composed of flexible wire or rods which may be bent into any desired shape and will retain the shape or form in which they are bent. Each of the arms f is provided with a plurality of holders g , which are adjustable longitudinally thereof, and these holders g are provided with set-screws g^2 , by which they may be adjusted to any desired point on the arms f , and each of said blocks is also provided in the upper side thereof with a slot or recess g^3 and in the outer end thereof with a recess g^4 . In the form of construction shown one of the arms f is secured in the plate a^2 adjacent to each of the arms b , and in practice the said arms f are bent laterally, as shown in Fig. 2, so as to be in the same vertical plane with the arms b .

In the form of construction shown the arms b are held in the recesses a^7 in the block a^2 by a ring wire or rod h , secured in a groove h^2 in the bottom of said plate or block by means of plates or other keepers h^3 , and the ring wire or rod passes through said arms b ; but this connection may be made in any desired manner, all that is necessary being to connect said arms b with the plate or block a^2 , so that said arms will be free to swing radially.

In making a lady's hat-frame on this device wire similar to that usually employed for this purpose is employed, and the adjusting devices d having been adjusted to the desired point or according to the size of the top of the hat-frame to be formed a wire i is passed around said devices in the notches or recesses d^3 , and the ends thereof are secured in any desired manner. Another wire i^2 is passed around the lower ends of the adjusting devices e and the ends secured in any desired manner. This wire forms a ring or band which fixes the size of the head-band of the hat-frame, and in order to produce the desired size of said head-band the devices e may

be adjusted by means of the set-screws e^2 . Radially-arranged wires j are then passed transversely across the ring or band i and over the top thereof and are tied to said ring or band, as shown at j^2 . The ends of the wires j are then carried downwardly to the ring or band i^2 and are tied thereto, as shown at j^3 , and the said ends of the said wires are then bent outwardly over the arms f and through the notches or recesses g^3 . Other wires k are passed around the holders g in the recesses g^4 , and the ends of the wires j are tied thereto by means of fine wire, as shown at k^2 . The wire rings or bands i and i^2 and the wires j form the crown of the hat-frame, and the wire rings or bands k and the wires j , which extend radially thereof, form the rim of the hat-frame, and the rim of the hat-frame may be given any desired shape in cross-section by bending the flexible arms f , as shown in Fig. 3. After the hat-frame has been formed it may be removed from the former device by loosening the thumb-nuts e^2 and swing the adjusting devices d inwardly by moving the plate or block a^3 upwardly, which operation throws the upper end portions b^2 of the arms b inwardly, and by moving the blocks g inwardly on the arms f .

The adjusting devices d and e are not absolutely essential in making all styles and forms of hat-frames, as it will be apparent that in some cases the crown rings or bands i and i^2 may be simply wound on the upper end portions b^2 of the arms b , and in such cases all that is necessary is to remove the adjusting devices d and e or detach them from the arms b . In passing the wires j radially across the top portion of the former they are passed through the slots b^3 in the arms b or in the top portions b^2 thereof, and also through the slots d^2 in the adjusting devices d , and this holds said wires in proper position and prevents them from sliding or moving about on the top rim or band i before they are tied thereto, and the notches or recesses g^3 in the holders g serve for a similar purpose or prevent the wires j from moving laterally on the wire rings or bands k .

My invention is not limited to the method herein described for connecting the wires j with the wire rings or bands i , i^2 , and k ; but with a machine constructed as herein shown and described the method of tying said wires to said rings or bands is the most practical.

Any suitable material may be employed in the construction of my improved hat-frame former; but I prefer to make the arms f of flexible material for the purpose hereinbefore described. It will be apparent, however, that various changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages, and I reserve the right to make all such alterations therein as

fairly come within the scope of the invention thereof.

The radially-projecting arms f are not an absolutely essential feature in this invention.

5 When it is not desired to make the rim of a hat or of a hat-frame of irregular shape, which is done by bending said arms, any suitable annular support may be employed or provided or substituted for the radially-projecting arms f , and with which suitable holders may be connected in order to support the wires or wire rings k , in which event the wires j may be connected with said wires or wire rings k , as herein shown and described, and the holders employed for the wires or wirings k will be so formed as to receive the wires j and hold them in proper position, and it will also be seen that the radially-projecting flexible arms f in the construction shown and described in effect form an annular support which in- closes the arms b and with which the holders g are connected.

In a prior application filed by me September 25, 1903, Serial No. 174,587, I have shown and described a hat-frame former involving some of the principal features shown and described in this case; but the hat-frame former described and claimed in the application referred to is intended for use in forming what are known as "wound-wire" frames, the wires of the frame where they cross each other being twisted or wound together. The former described and claimed in this application is intended for use in making tied-wire frames for hats, the wires of the frame where they cross each other being tied together, and a wound-wire frame, or a frame in which the wires are wound together where they cross, cannot be made on the former described and claimed in this case.

My invention is also not limited to the use of any particular means, shape, or form of device for making the crown portion of the hat-frame when the flexible and radially-projecting arms f are employed. The said radially-projecting and flexible arms f constitute in a hat-frame former of the class herein described one of the principal features of my invention, the object thereof being to produce a hat-frame having a rim of any desired shape in cross-section, this object being attained by bending the arms f into the desired shape, and my invention involves any style, shape, or form of a device for forming the crown portion of a hat-frame in connection with which radially-projecting and flexible arms are employed for the purpose herein specified, and in Figs. 6 and 7 I have shown an ordinary hat-block m , provided with the radially-projecting and flexible arms f and having wire-holders g mounted thereon, and it will be apparent that the crown portion of the hat-frame may be wound on the block m and the rim portion thereof formed on the

radially-projecting and flexible arms f in the same manner as hereinbefore described.

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, vertically-arranged and radially-movable arms connected therewith, means for swinging the upper end portions of said arms outwardly and inwardly and holding the same at any desired point, radially-projecting arms arranged at a predetermined distance below the tops of the first-named arms, and wire-holders mounted on said radially-projecting arms, substantially as shown and described.

2. A hat-frame-forming device, comprising a suitable support, vertically-arranged and radially-movable arms connected therewith, means for swinging the upper end portions of said arms outwardly and inwardly and holding the same at any desired point, radially-projecting arms arranged at a predetermined distance below the tops of the first-named arms, and wire-holders mounted on said radially-projecting arms and adjustable thereon, substantially as shown and described.

3. In a hat-frame-forming device, a support, vertically-arranged and radially-movable arms connected therewith, means for swinging the upper end portions of said arms outwardly and inwardly and holding them at any desired point, radially-projecting arms arranged at a predetermined distance below the tops of the first-named arms and composed of flexible material and wire-holders mounted on said radially-projecting arms and movable thereon, substantially as shown and described.

4. A hat-frame-forming device, comprising a suitable support, vertically-arranged and radially-adjustable arms connected therewith, radially-movable adjusting devices connected with said arms near their upper ends, radially-movable adjusting devices connected with said arms below said first-named adjusting devices, radially-projecting flexible arms arranged below said last-named adjusting devices, and wire-holding devices movable on said last-named arms, substantially as shown and described.

5. A hat-frame-forming device, comprising a support, vertically-arranged and radially-movable arms connected with said support and slotted longitudinally and radially of their upper ends, means for adjusting said arms radially, means for securing wires around the upper end portions of said arms near the tops thereof and at a predetermined distance below the tops thereof, and radially-projecting flexible arms provided with wire-holders longitudinally adjustable thereon, substantially as shown and described.

6. In a hat-frame-forming device, a support, vertically-arranged and radially-movable arms

connected therewith, means for adjusting said arms radially, said arms being also slotted radially and longitudinally of their upper ends and provided in their outer sides with recesses, radially-movable adjusting devices connected with said arms near their upper ends, other radially-movable adjusting devices connected with said arms at a predetermined distance below the first-named adjusting devices, and radially-projecting flexible arms provided with longitudinally-adjustable wire-holders, substantially as shown and described.

7. In a hat-frame-forming device, a support, vertically-arranged and radially-movable and adjustable arms connected therewith and adapted to form a support for the crown portion of a hat-frame, and an annularly-arranged device or devices inclosing said arms at a predetermined distance below the top thereof and adapted to serve as a support or supports for the rim portion of a hat-frame, substantially as shown and described.

8. A hat-frame device, comprising a suitable support, vertically-arranged and radially-movable and adjustable arms connected therewith, and an annularly-arranged device or de-

vices inclosing said arms at a predetermined distance below the tops thereof, substantially as shown and described.

9. A device intended as a former for wire hat-frames, and comprising a top portion around which the crown portion of the hat-frame is formed, and radially-projecting and flexible arms connected with said crown portion and over which the rim of the hat-frame is formed, substantially as shown and described.

10. A device intended as a former for wire hat-frames, and comprising a top portion around which the crown portion of the hat-frame is formed, and radially-projecting and flexible arms connected with said crown portion and over which the rim of the hat-frame is formed, said arms being provided with adjustable wire-holders, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 15th day of December, 1903.

EDWARD A. HOWE.

Witnesses:

F. A. STEWART,
C. E. MULREANY.