

No. 779,831.

PATENTED JAN. 10, 1905.

D. D. BEATTY.
HAT FRAME MACHINE.
APPLICATION FILED MAR. 12, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

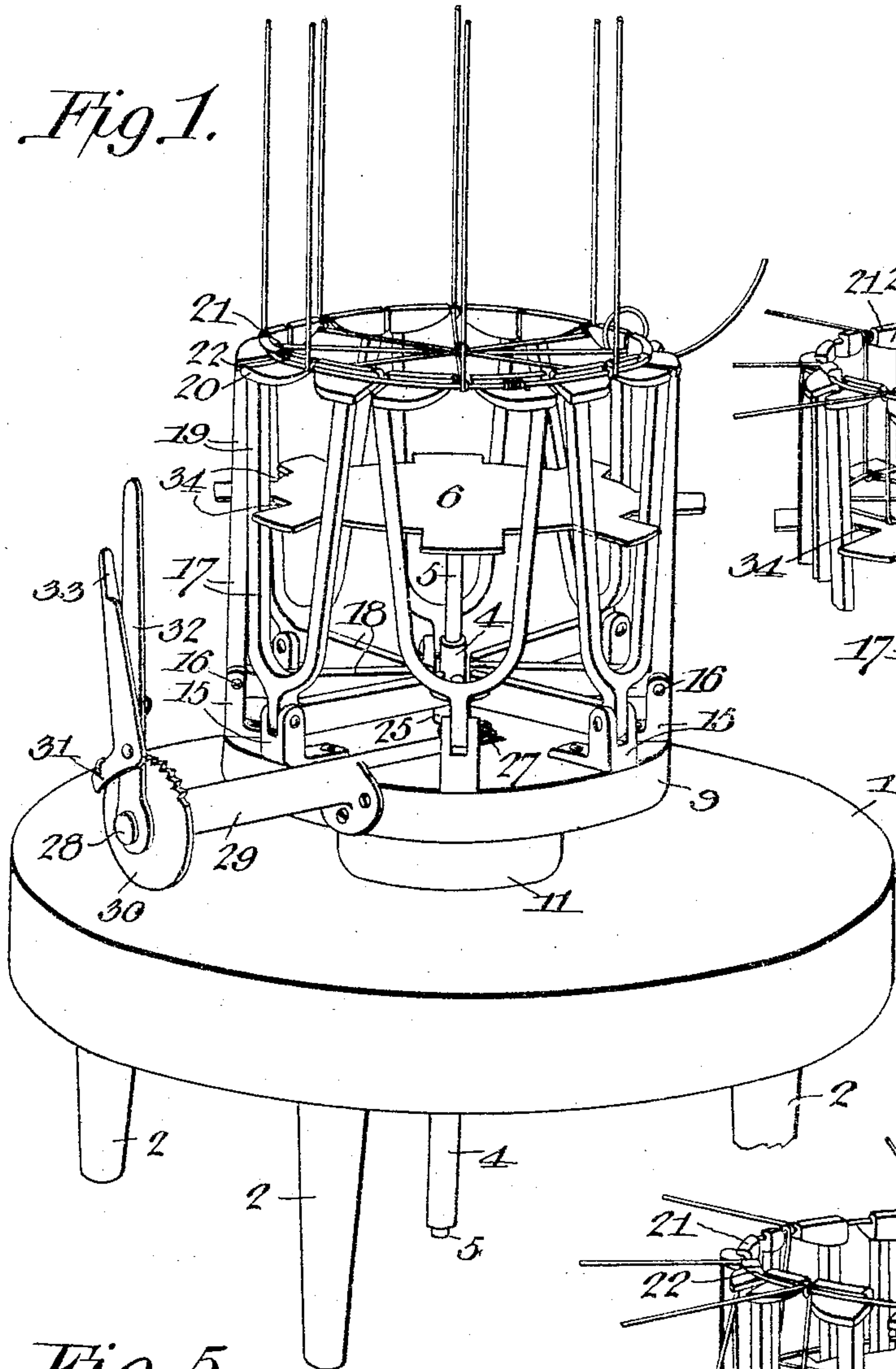


Fig. 4.

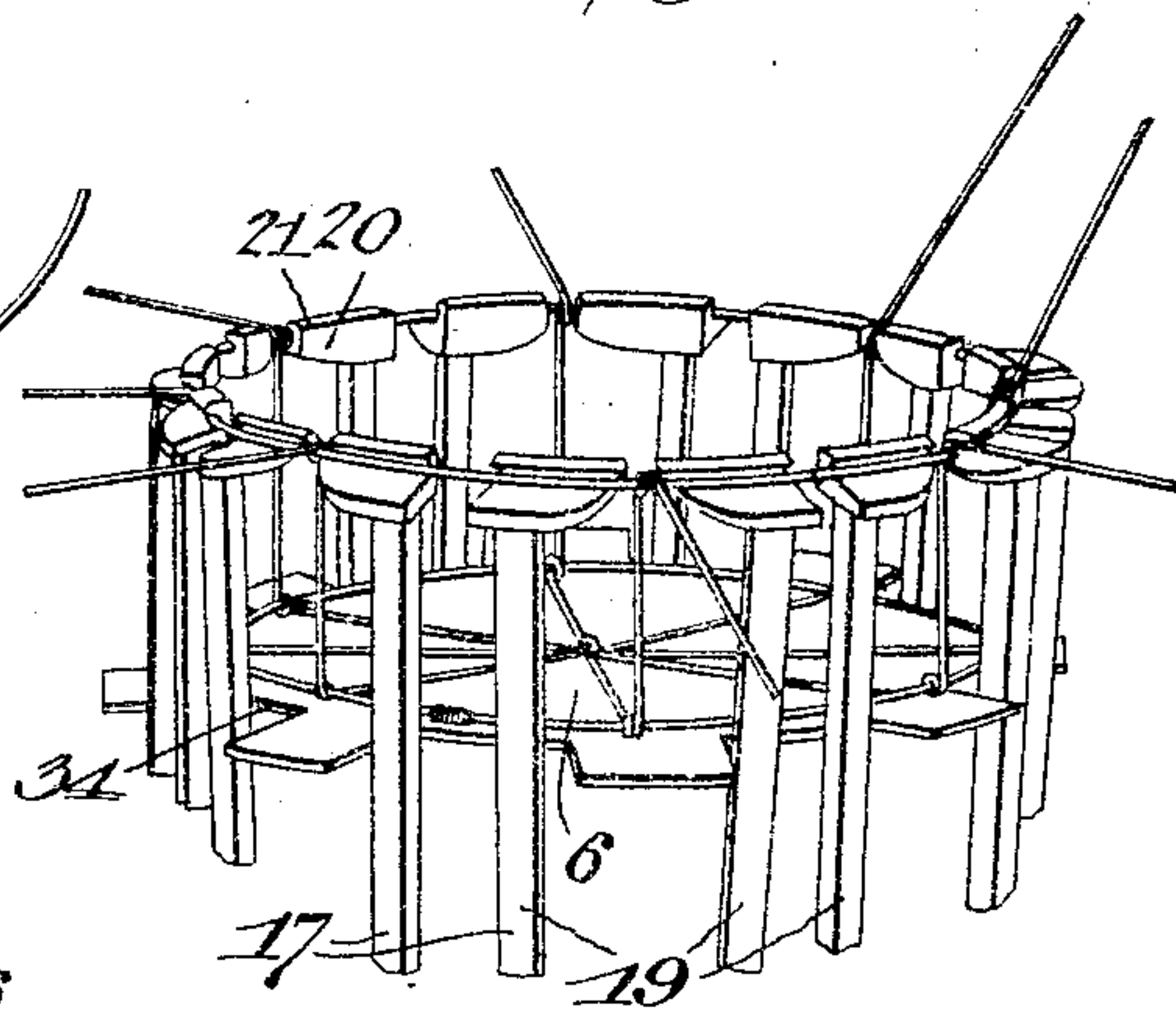
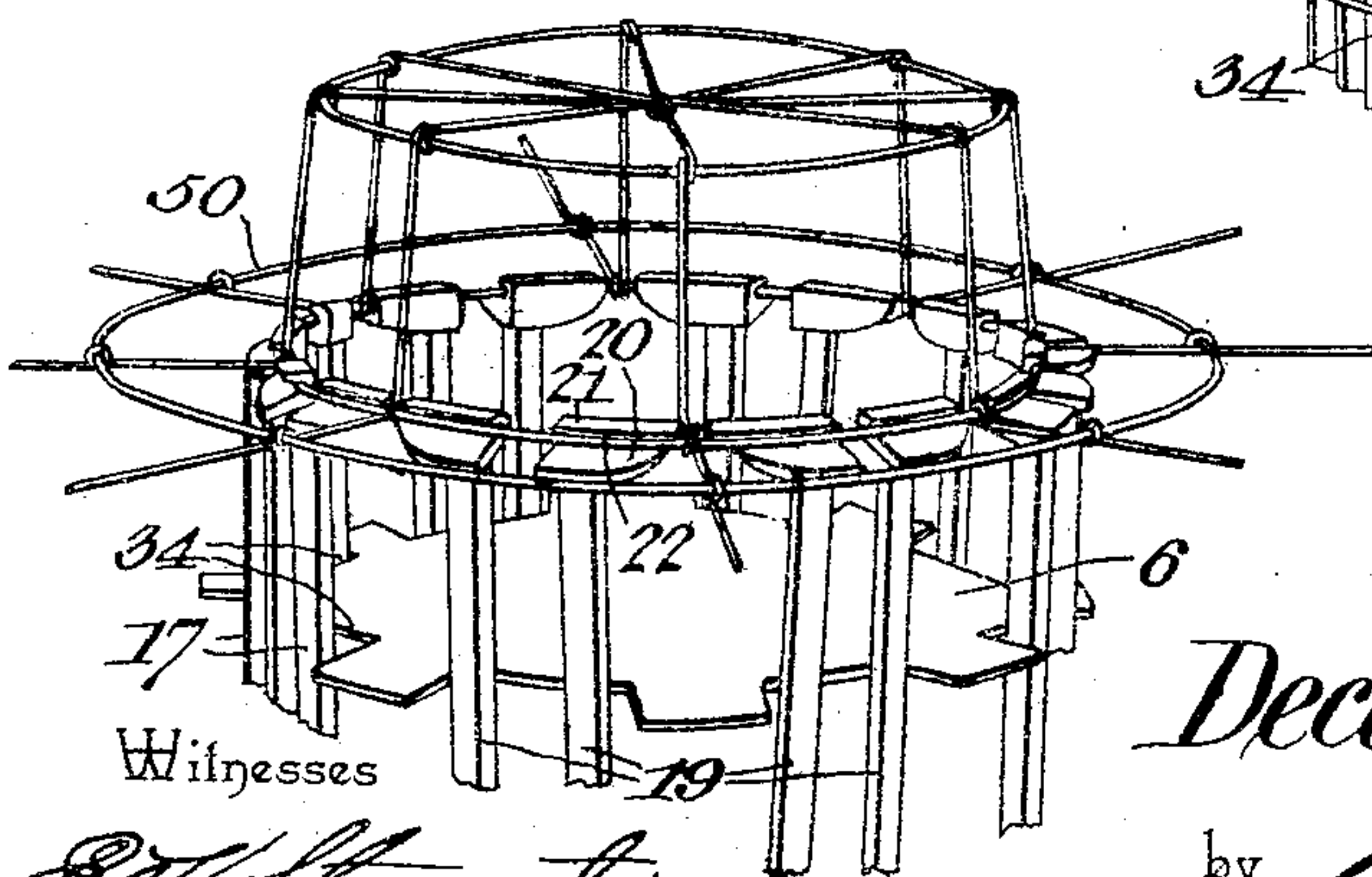


Fig. 5.



Witnesses

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Fig. 6.

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2 SHEETS—SHEET 2.

Fig. 2.

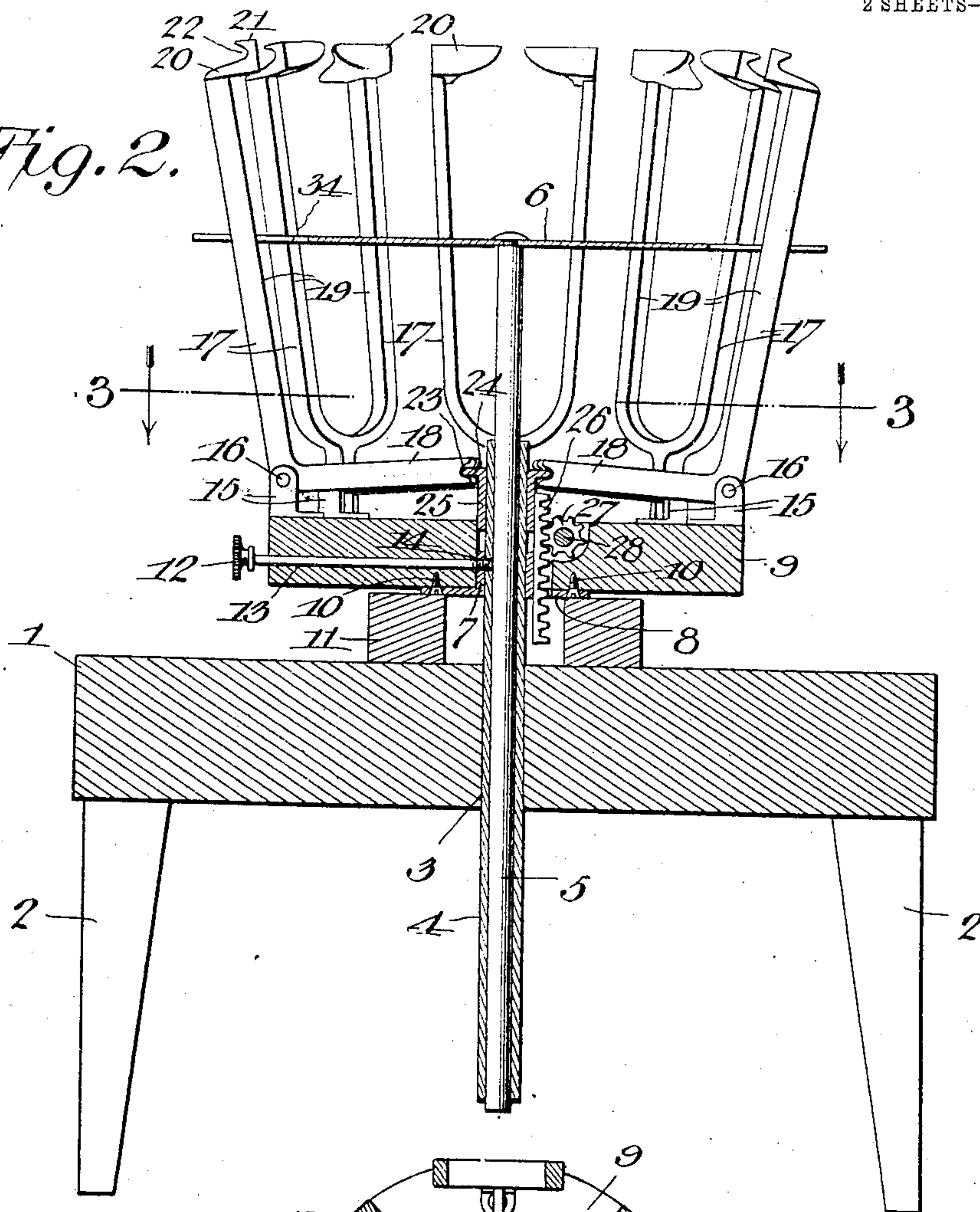
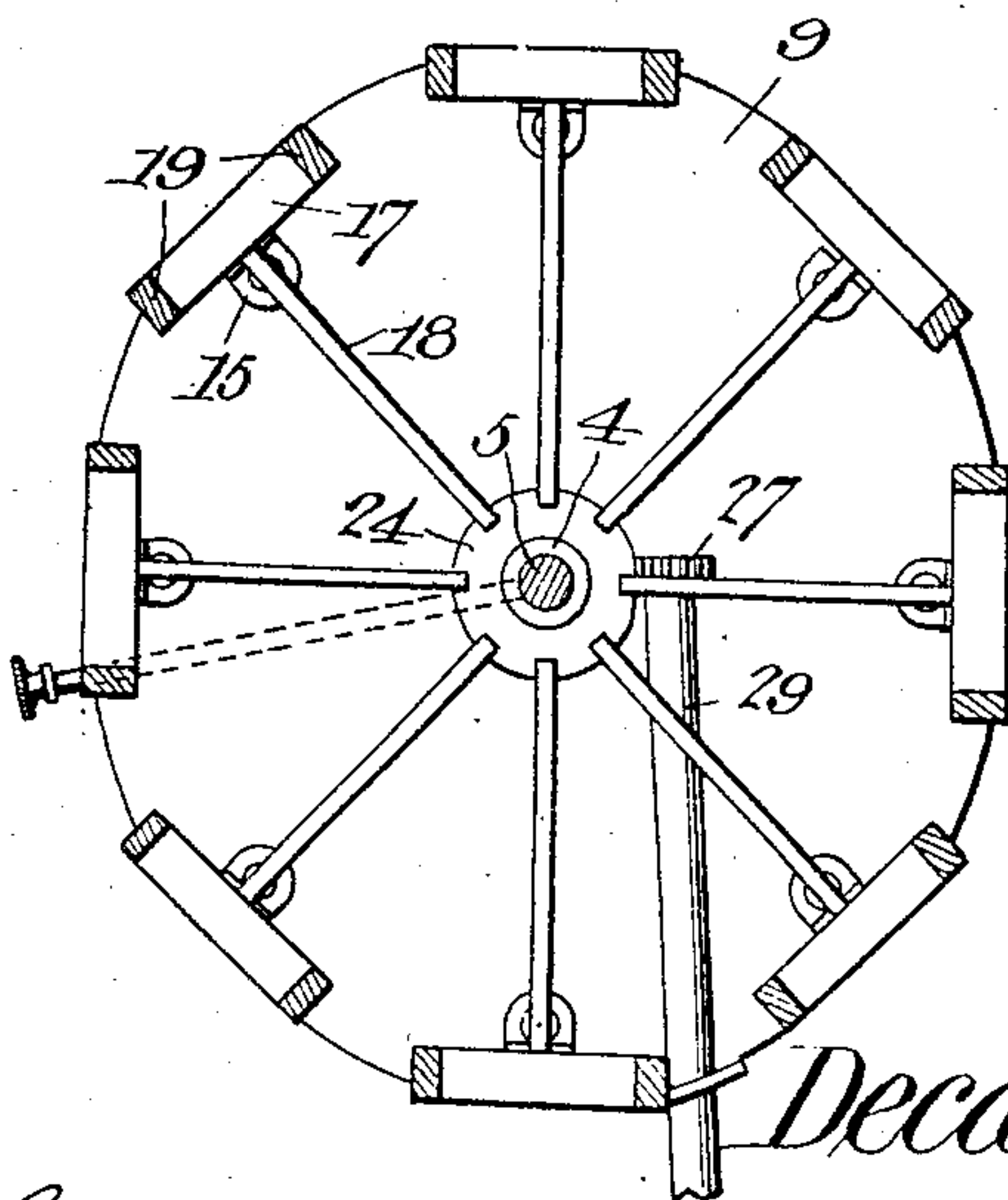


Fig. 3.



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UNITED STATES PATENT OFFICE.

DECATUR D. BEATTY, OF GRASS VALLEY, CALIFORNIA.

HAT-FRAME MACHINE.

SPECIFICATION forming part of Letters Patent No. 779,831, dated January 10, 1905.

Application filed March 12, 1904. Serial No. 197,807.

To all whom it may concern:

Be it known that I, DECATUR D. BEATTY, a citizen of the United States, residing at Grass Valley, in the county of Nevada and State of California, have invented a new and useful Hat-Frame Machine, of which the following is a specification.

This invention relates to machines for making wire hat-frames; and it has for its object to provide a device of this class which shall be simple in construction, easily manipulated, efficient in operation, and by means of which hat-frames of various sizes and shapes may be easily, quickly, and conveniently produced.

With these and other ends in view the invention consists in the improved construction, arrangement, and combination of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention, it being understood, however, that I do not thereby limit myself to the precise structural details therein exhibited, but reserve the right to any changes, alterations, and modifications that lie within the scope of the invention and which may be resorted to without departing from the spirit or sacrificing the utility of the same.

In said drawings, Figure 1 is a perspective view of a device constructed in accordance with the principles of my invention, showing the same in the position occupied in the first step of the manufacture of a hat-frame. Fig. 2 is a vertical sectional view of the machine. Fig. 3 is a horizontal sectional view taken on the line 3-3 in Fig. 2. Fig. 4 is a perspective view showing the upper part of the machine in the position occupied in the second step of the process of manufacturing a hat-frame. Fig. 5 is a perspective view showing the upper part of the machine and a hat-frame in the third step of manufacture. Fig. 6 is a perspective view of the upper part of the machine, illustrating the manner of using the same for the purpose of manufacturing a bell-crown hat-frame.

Corresponding parts in the several figures are indicated by similar numerals of reference.

In the construction of my improved hat-frame machine is comprised a bench or table 1, preferably raised upon legs 2 and having a perforation 3, in which is fitted a tube 4, affording a bearing for a spindle 5, the upper end of which carries a platform 6.

7 designates a sleeve fitted upon the tube 4, which latter is revoluble in the perforation 3 of the table, and said sleeve is provided at its lower edge with an annular flange 8, supporting a block 9, which is secured to said flange by means of set-screws 10.

11 designates a supporting-ring which is secured upon the table 1 concentrically with the perforation 3 and which supports the flange 8 of the sleeve 7.

12 is a set-screw extending through an opening 13 in the block 9, through an opening 14 in the sleeve 7, and through a corresponding opening in the tube 4, the inner end of said set-screw bearing against the spindle or rod 5, which may thus be secured at any desired adjustment relatively to the tube 4. It will thus be seen that the block 9, with its related parts, is revoluble with the tube 4 and that the spindle or rod carrying the platform 6 has a wide range of adjustment.

The block 9 is preferably elliptical in shape, its major diameter being from one-half to one inch in excess of its minor diameter, corresponding with the ordinary oval or elliptical shape of a hat-frame. Arranged equidistantly around the circumference of the block 9 are a plurality of brackets 15, said brackets affording bearings for shafts or pins 16, upon which are pivotally mounted the stretching members 17, each of which comprises an inwardly-extending arm 18 and one or more upwardly-extending arms 19. In the accompanying drawings each of the stretching members is provided with two upwardly-extending divergent arms 19; but it is to be understood that a single arm or more than two arms may be employed when desired without departing from my invention. Each of the arms 19 carries at its upper end

an inwardly - extending hat-ring-supporting plate 20, having at its inner end a segmental flange 21, the outer edge of which has a groove or recess 22.

5 The inwardly - extending arms 18 of the stretching members are provided at their inner ends with notches 23, engaging an annular flange 24 of a sleeve 25, which is loosely mounted upon the tube 4. Suitably connect-
 10 ed with the sleeve 25 is a rack 26, engaging a pinion 27, mounted upon a shaft 28, which extends through a recess or perforation in the block 9 and through a tubular bearing 29, secured exteriorly to said block. Said tubular
 15 bearing carries at its outer end a ratchet member 30, engaged by a pawl 31 upon a lever 32, which is securely connected with the shaft 28. The pawl 31 is spring-actuated, and it has a handle 33, by means of which it may be re-
 20 leased from engagement with the ratchet member 30. Thus by compressing the pawl-handle 33 and the lever 32 the pawl will be disengaged from the ratchet member, and the shaft 28 may be turned in either direction,
 25 thus causing the sleeve 25 to be raised or lowered by the pinion 27 engaging the rack 26. By thus raising the sleeve 25 the inner ends of the arms 18, engaging the flange upon said
 30 sleeve, will be elevated, thus forcing the upwardly-extending arms 19 of the stretching member 17 in an outward direction. When the sleeve 25 is lowered, the operation is reversed, and the upper ends of the arms 19 of the stretching members will be moved radially
 35 in the direction of each other.

It will be observed that the block 9, with all its related parts, is revoluble with relation to the table and that the rack-bar 26 is easily
 40 accommodated within the ring or annular support 11.

Wire hat-frames of the class which are manufactured by means of my improved machine are made up of a plurality of rings or so-called
 45 "crown-wires" and rib-wires intersecting the same and connected therewith by bending or folding around them. In the manufacture of a hat-frame crown-wires of suitable size are provided. The platform 6 of the device is ad-
 50 justed at a suitable distance from the upper ends of the arms 19 of the stretching members to form a hat-crown of the desired height, the height of the hat-crown being equal to the distance between the said platform and the upper sides of the plate 20. By manipulating
 55 the shaft 28 the stretching members 17 are rocked upon their fulcra, bringing the upper ends of the arms 19 in the direction of each other, and one of the rings or crown-wires is then placed upon the plates 20. The stretch-
 60 ing members are now expanded, thus causing the segmental grooved flanges 21 to engage the crown-wire, which is thereby stretched or strained in an outward direction and retained

securely, while the rib-wires are wrapped around diagonally opposite points of said
 65 crown-wire, the last rib-wire placed in position being wrapped around the remaining rib-wires, and thus connecting them securely at the point of intersection. The arms 19 of the
 70 stretching members form gages, enabling the operator to wrap the rib-wires upon the crown-wires at equidistant points, said rib-wires being adjusted either between the individual stretching members or between the arms 19
 75 of individual stretching members, as may be preferred. After being wrapped around the crown-wire the rib-wires are left in an up-
 standing position, as clearly shown in Fig. 1, where the first step of the operation is illus-
 80 trated. The shaft 28 is now manipulated to release the crown-wire, which is now permitted to drop down upon the platform 6, after which another crown-wire is placed in position, the
 stretching members are expanded, and the ends of the rib-wires are twisted around the
 85 crown-wire now held by the stretching members, the ends of the rib-wires being permitted to extend radially from the crown-wires. The latter is now released, and the
 partly-completed frame is removed from the
 90 machine and inverted, the lower crown-wire being again placed in engagement with stretching members, whereby the hat-frame is securely held, while a brim-wire (designated 50)
 95 is made fast to the hat-frame by twisting the ends of the rib-wires around said brim-wire, the latter being meanwhile held by the hand of the operator. This having been accom-
 100 plished the projecting ends of the rib-wires are cut off and the hat-frame is finished.

During the process of manufacture the operator may sit or stand in front of the machine, which latter is rotated by hand as the operation progresses. It is obvious that any
 105 desired number of crown-wires may be used by moving the platform 6 step by step in a downward direction, each downward movement being equal to the distance that the
 crown-wires are to be spaced apart.

It will be observed that the platform 6 is
 110 provided with radial notches 34 for the accommodation of the vertical arms 19 for the stretching members, said platform extending beyond said stretching members, so as to afford a supporting-surface exteriorly of the
 115 latter. When it is desired to manufacture what is known as a "bell-crown" hat-frame—that is, a hat-frame in which the uppermost crown-wire of the crown is larger than the
 120 one at the inner edge of the brim—I first connect the rib-wires with said large crown-wire. When after this first step the partly-made frame is disconnected from the stretching
 125 members and inverted, it is placed upon the supporting-platform 6 exteriorly of the stretching members, while a smaller crown-wire is

placed in position to have the rib-wires wrapped around it. This has been clearly illustrated in Fig. 6 of the drawings, by reference to which the method of making a bell-crown hat-frame will be readily understood.

It will be observed from the foregoing that the machine of my invention is capable of being utilized in the manufacture of hat-frames of different sizes and shapes. The device is simple in construction and may be operated without the exercise of great skill. The blocks or bracket members 20 at the upper ends of the arms 19 of the stretching members might be dispensed with by simply forming exterior grooves in the upper ends of said arms 19; but the construction herein shown and described is greatly to be preferred, for the reason that said blocks may be made of such a size that when spaced apart to the limit of the machine the distance between them will not be excessive. Hence by giving to said blocks the proper curvature or conformation the crown-wire will retain its smooth curvature and will be held with a degree of firmness which enables the rib-wires to be twisted around it without drawing it out of shape. Again, the said blocks form a convenient support upon which the crown-wire which is to be operated upon may be readily placed before distending the arms 19, so that the wire will naturally fall into engagement with the grooves 22 without being guided by the hand of the operator, which is obviously a great convenience and one which will result in considerable saving of time.

Having thus described my invention, I claim—

1. In a hat-frame machine, a plurality of hat-frame-ring-supporting plates, and radially-movable supporting means for said plates.

2. In a hat-frame machine, a plurality of radially-movable hat-ring-supporting plates.

3. In a hat-frame machine, a plurality of radially-distensible hat-frame-ring-supporting plates having ring-engaging means.

4. In a hat-frame machine, supporting means and circumferentially-disposed distensible plates having ring-engaging flanges.

5. In a hat-frame machine, radially-movable members having hat-ring-supporting plates provided with exteriorly-grooved flanges.

6. In a hat-frame machine, circumferentially-disposed members having radially-movable free ends provided with supporting-plates having segmental flanges.

7. In a hat-frame machine, circumferentially-disposed members having radially-movable free ends provided with plates having exteriorly-grooved segmental flanges.

8. In a hat-frame machine, circumferentially-disposed members having radially-mov-

able free ends, supporting-plates carried thereby, and segmental grooved flanges upon said plates.

9. In a hat-frame machine, circumferentially-disposed stretching members, and a supporting-platform vertically adjustable independently of said stretching members.

10. In a hat-frame machine, a supporting-block, a platform axially supported above said block, and stretching members connected pivotally with the block and having radially-movable free ends independent of the platform.

11. In a hat-frame machine, a supporting-block, circumferentially-disposed stretching members connected pivotally with said block, ring-supporting plates at the free ends of said stretcher members, and a vertically-adjustable crown-supporting platform independent of the stretching members.

12. In a hat-frame machine, a revoluble supporting-block, stretching members disposed circumferentially upon said block and having radially-movable free ends, a vertically-adjustable axial spindle, and a platform carried by said spindle.

13. In a hat-frame machine, a revoluble supporting-block, stretching members disposed circumferentially upon said block and having radially-movable free ends, a vertically-adjustable axial spindle and a platform carried by said spindle and having notches for the accommodation of the stretching members.

14. In a hat-frame machine, a rotary supporting-block, stretching members connected pivotally with said block and having upwardly-extending supporting-arms and inwardly-extending adjusting-arms provided with notches at their inner ends, and a vertically-adjustable sleeve having a flange engaging the inner notched ends of the adjusting-arms.

15. In a hat-frame machine, a rotary supporting-block, circumferentially-disposed stretching members connecting with said block and having upwardly-extending supporting-arms and inwardly-extending adjusting-arms provided with notches at their inner ends, a sleeve disposed axially with relation to the supporting-block and having a flange engaging the notches in the inner ends of the supporting-arms, means for vertically adjusting said sleeve, and means for securing said sleeve at the desired adjustment.

16. In a hat-frame machine, a rotary supporting-block, circumferentially-disposed stretching members connected with said block, a tube extending vertically and axially through said block, a suitable bearing for said tube, a sleeve upon said tube having a flange connected with the supporting-block, annular supporting means for the latter, means for radially adjusting the free ends of the stretching members, a rod vertically adjustable with-

in the tube extending through the supporting-block, and a platform carried by said rod.

17. In a hat-frame machine, a supporting-table, a tube extending through and rotatable with relation to said table, a supporting-block connected with said tube, annular supporting means for said block surrounding said tube, a rod vertically adjustable in the latter, a platform at the upper end of said rod,
10 circumferentially-disposed stretching mem-

bers, and means for adjusting said stretching members and for securing them at the desired adjustment.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DECATUR D. BEATTY.

Witnesses:

EDW. R. BURKE,

FRED C. CRAWFORD.