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A. KINDERMANN.
HAT FRAME MACHINE.
APPLICATION FILED MAY 8, 1906.

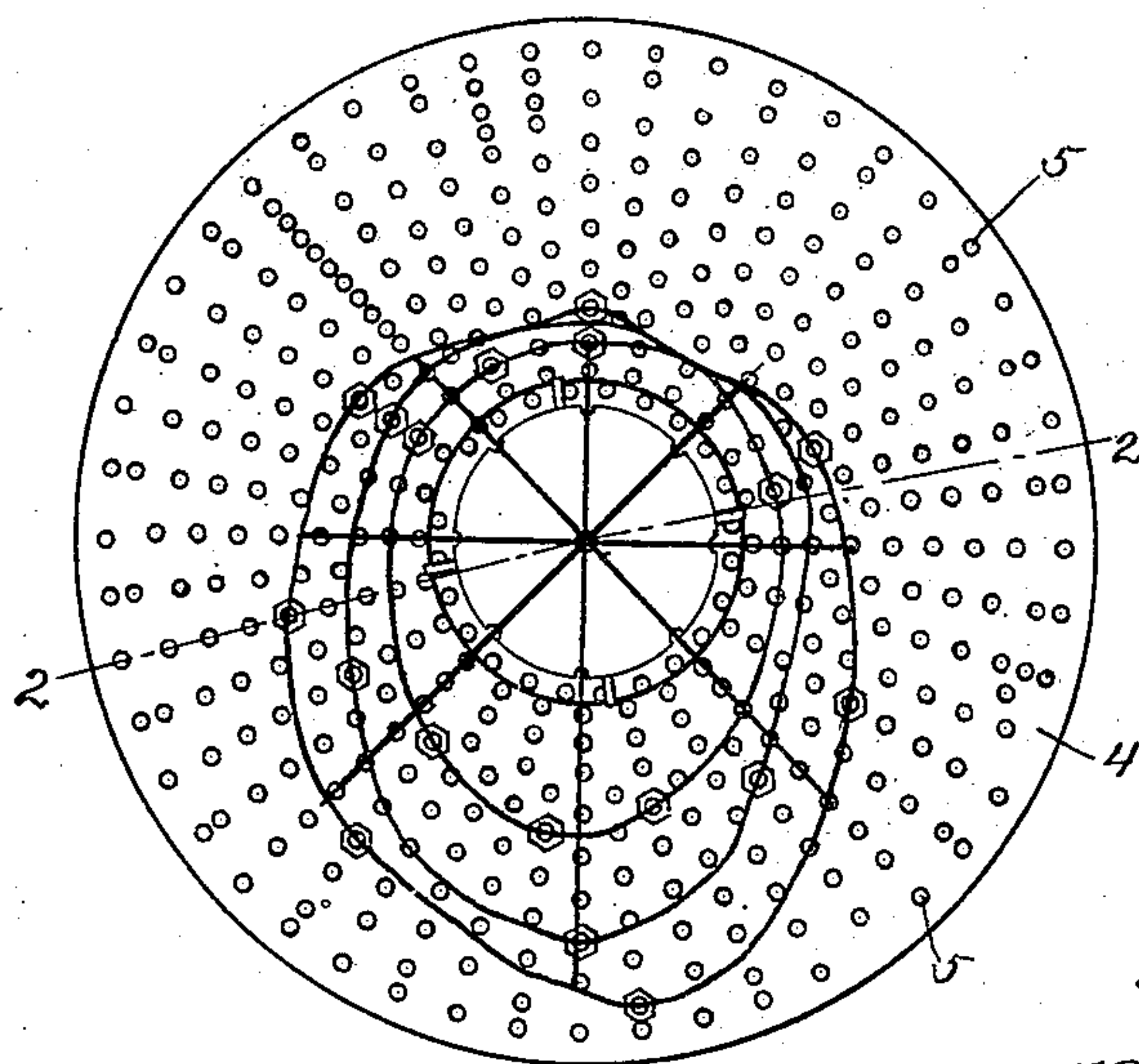


Fig. 1.

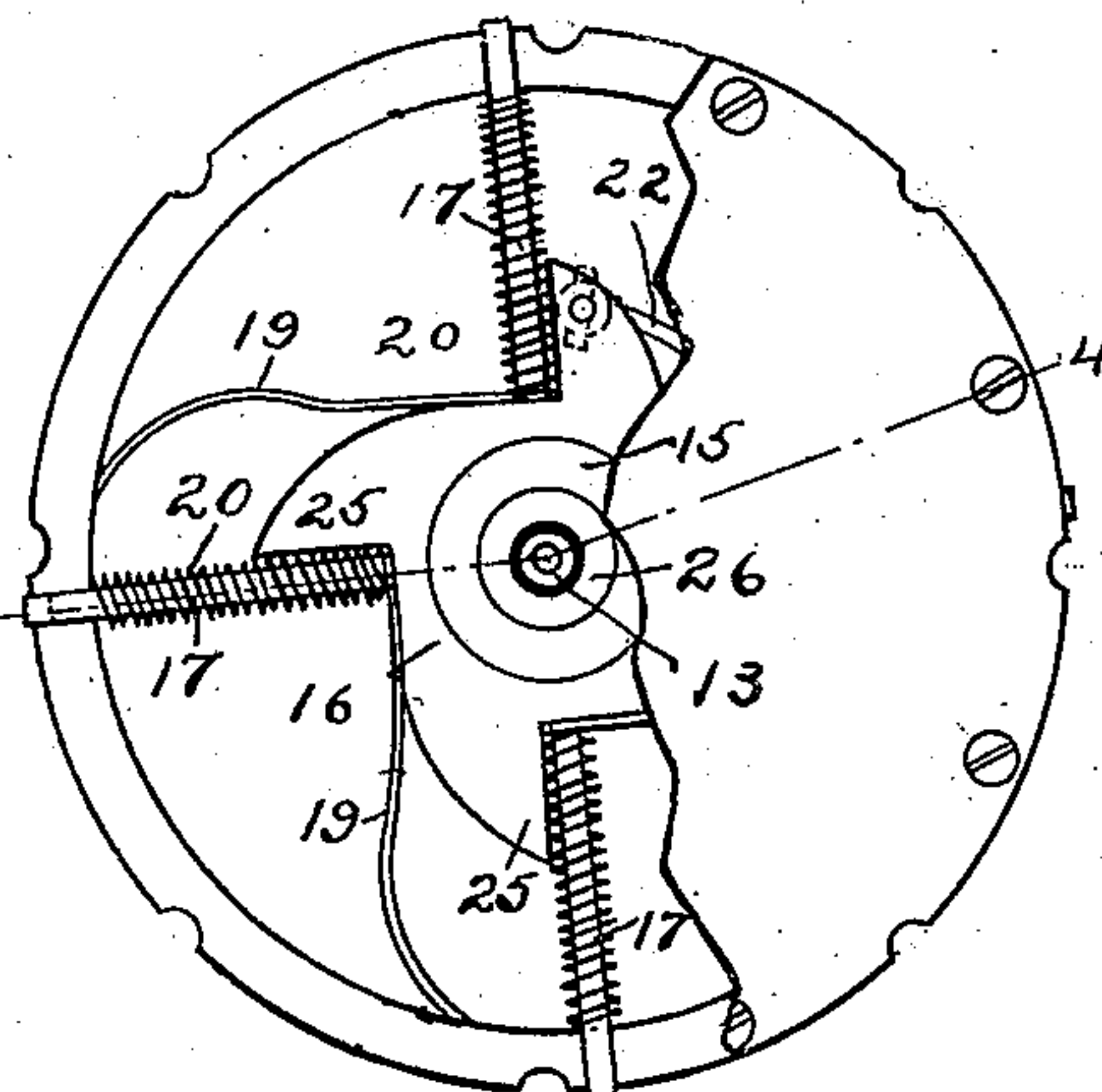


Fig. 3.

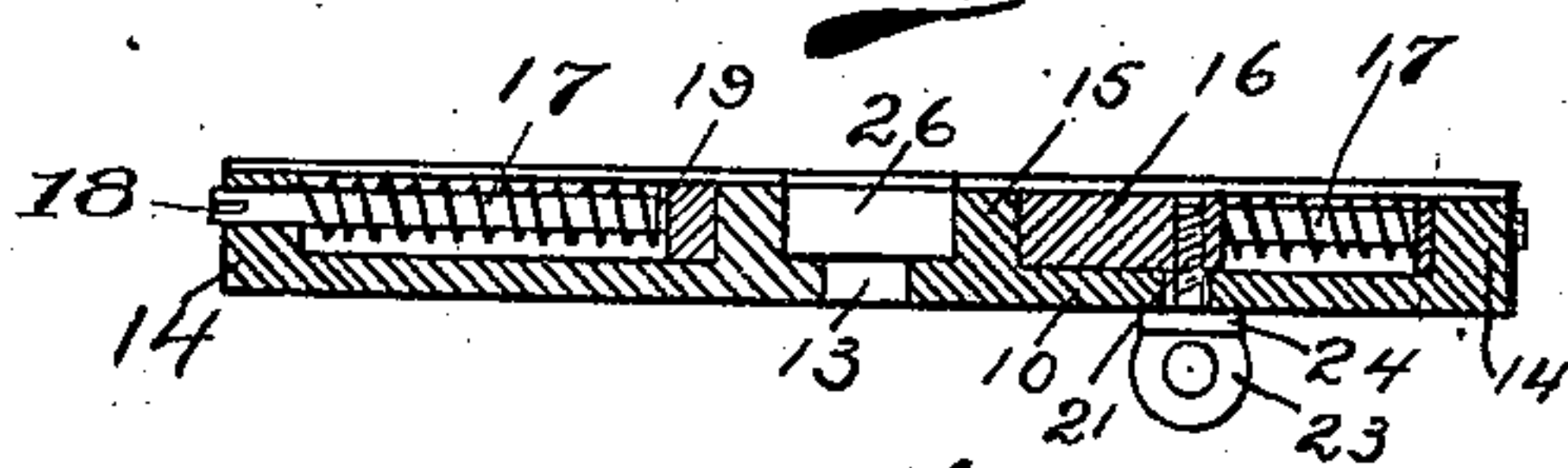


Fig. 4.

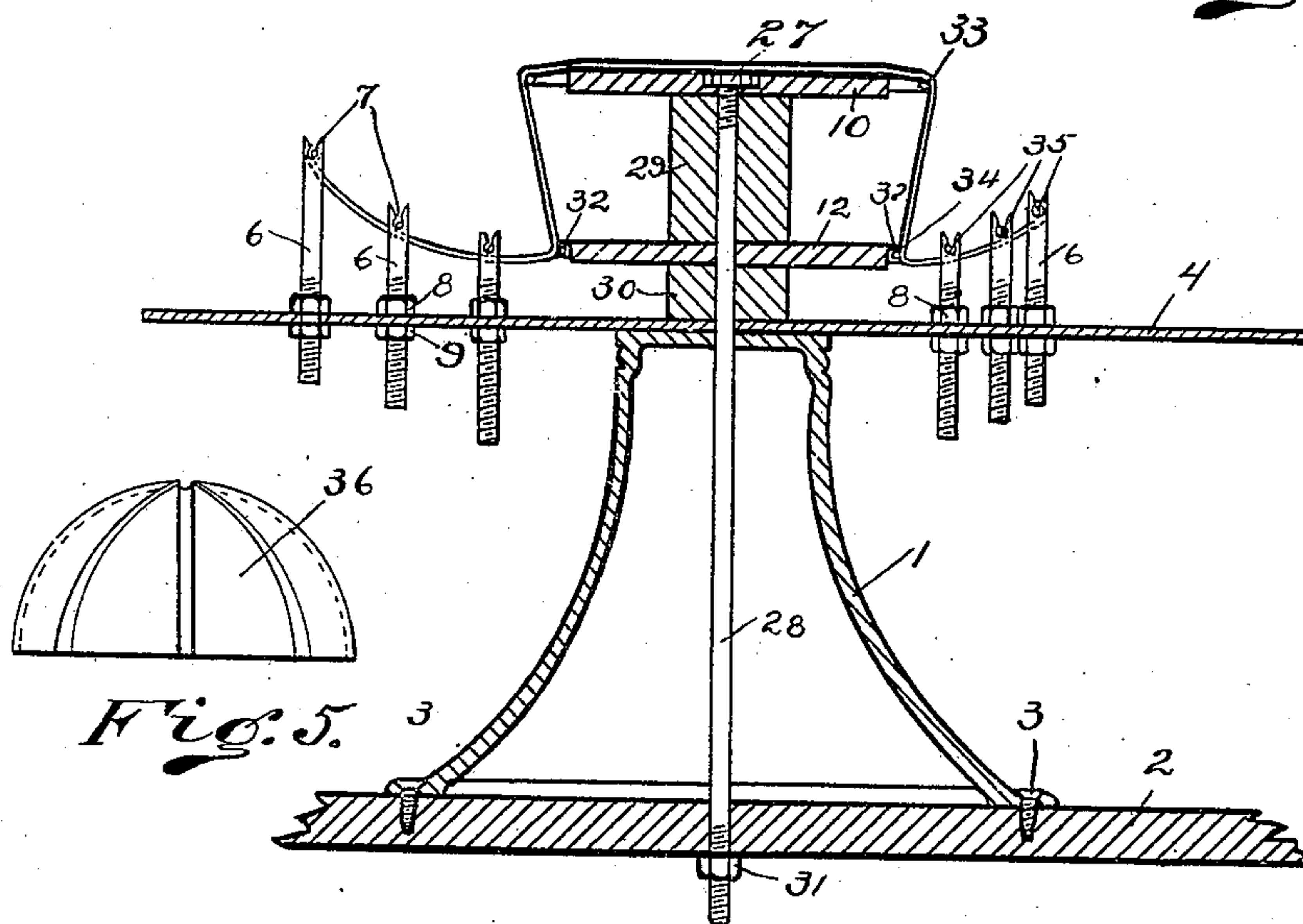


Fig. 5.

Fig. 2

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AUGUST KINDERMANN, OF CINCINNATI, OHIO.

HAT-FRAME MACHINE.

No. 848,467.

Specification of Letters Patent.

Patented March 26, 1907.

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To all whom it may concern:

Be it known that I, AUGUST KINDERMANN, a citizen of the United States, residing in Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Hat-Frame Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a machine consisting of a metal framework designed to receive the round-and-round and cross wires for the construction of any desired design of a wire frame for ladies' hats; and it consists of that certain novel construction and arrangement of parts to be hereinafter particularly pointed out and claimed, whereby the machine may be cheaply and easily constructed and any desired hat-frame built thereon, no matter how irregular or peculiar in contour and shape and in which the machine may be readily altered or changed for the construction of any other desired shape of hat-frame.

In the drawings, Figure 1 is a top plan view of my improved machine. Fig. 2 is a vertical section taken on the lines 2 2 of Fig. 1. Fig. 3 is a plan view, with the top plate partly broken away, of the mechanism for extending the fingers for holding the round-and-round crown-wires. Fig. 4 is a vertical section of same, taken on the lines 4 4 of Fig. 3. Fig. 5 is a side elevation of the form-block for the construction of a semispherical crown.

1 is a standard, preferably mounted on a table 2 and secured thereto by screws 3 3, and on this standard is horizontally mounted the plate 4. This plate is provided with a large number of openings 5, arranged in concentric circles, and through these openings are passed the upright posts 6 6. A very large number of openings are provided, so that the posts 6 6 may be disposed in any desired position on the table. These posts are of sufficient length to extend any desired height from the table, and the upper ends of the posts are notched at 7 to conveniently hold the round-and-round wires of the hat-frame. The posts 6 are screw-threaded, and nuts 8 9 bearing above and below the plate hold the posts in any desired position of vertical adjustment.

For holding the wires of the top of the crown portion of the hat-frame I provide the disk 10. This disk is provided with a cen-

tral aperture 13 and the annular flanges 14 and 15, and mounted loosely on the annular flange 15 is the cam-plate 16.

17 17 are rods or fingers, the outer ends of which are provided with notches 18, and these rods are radially disposed on the disk 10 with their outer ends extending out through openings in the flange 14. To the inner ends of these rods is riveted or otherwise secured flat springs 19 19, the outer ends of which bear against the inner surface of the flange 14. Coiled springs 20 20 are mounted on the rods 17 and bear between the flange 14 and the inner ends of the springs 19.

21 is a screw, secured to the cam-plate 16 and passing down through a slot 22 in the disk 10. This pin is provided with the adjusting-head 23, which bears on the washer 24. By loosening the pin the cam-plate can be rotated and the cam-surfaces of the plates will extend the fingers or rods 17 to the extent of the height of the cam-surfaces 25. The slot 22 is only long enough to permit the cam-plate to be rotated to carry the fingers to the height of the cam-surfaces, and when the fingers are to be left extended the cam-plate is secured in that position by tightening the screw 21.

In the upper disk 10 a recess 26 is provided to receive the nut 27 on the end of the rod 28. 12 is a disk provided with fingers 32, similar to the fingers 19, for supporting the head-wire of the hat-frame; but as it is not necessary to extend these fingers the mechanism provided for the disk 10 is omitted, and the two disks are separated from each other by the block 29, and the lower disk 12 is raised above the plate 4 by the block 30.

I provide a series of blocks 29 of different heights for the varying heights of crowns to be formed on the machine, and I also provide disks of varying sizes for the diameter of the crowns.

To hold the parts together, I extend the rod 28 down through the table 2 and clamp them by the nut 31.

It will be readily understood that a hat-frame of any desired shape may be readily constructed on my machine when same has been properly adjusted.

A wire-form is first made by hand of any desired shape, and then the rods 6 6 are set up to hold the round-and-round wires of the brim. Disks 10 and 12 of the proper diameter for the crown are selected, and if a bell-crown shape is the one to be formed the fin-

gers on the upper disk 10 are extended, and a block 29 of the proper height for the crown is selected and the parts secured together as above described. The crown-wire 33 is first
 5 put on, then the head-wire 34, and then the round-and-round brim-wires 35. The cross-wires are then extended across the crown and secured by a wrapping of fine wire at the intersection of each round-and-round wire.

10 In order to remove the bell-crown shape, the screw 23 is loosened and the cam-plate brought back to its normal position, the coiled springs at once withdrawing the fingers within the periphery of the disk.

15 It is sometimes desired to form a semi-spherical crown, and in that event I provide the semispherical form 36, which is secured by the rod 28 in the same way that the disk 10 and block 29 are secured.

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

1. In a hat-frame machine, a horizontal plate, with a series of openings therethrough,
 25 arranged in concentric circles, vertical posts mounted in said openings, with nuts for holding same at the desired height, and horizon-

tal arms secured above the plane of the horizontal plate to hold the crown-wires.

2. In a hat-frame machine, a horizontal 30 plate, with a series of openings therethrough, arranged in concentric circles, vertical posts mounted in said openings, with nuts for holding same at the desired height, a disk mounted above said plate, a cam-plate thereon, 35 with horizontal arms to receive the crown-wire, and means for rotating the cam-plate to extend said horizontal arms for bell-crown shapes.

3. In a hat-frame machine, a horizontal 40 plate, with a series of openings therethrough, arranged in concentric circles, vertical posts mounted in said openings, with nuts for holding same at the desired height, a flanged disk 45 mounted above said plate, a cam-plate with a series of cams thereon, mounted within the flange of said disk, and radial arms extended by said cam-plate as same is rotated with springs to return the arms to normal position.

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