

J. A. SCHWARTZ.
WIRE HAT FRAME MAKING MACHINE.
APPLICATION FILED SEPT. 12, 1910.

989,303.

Patented Apr. 11, 1911.

2 SHEETS—SHEET 1.

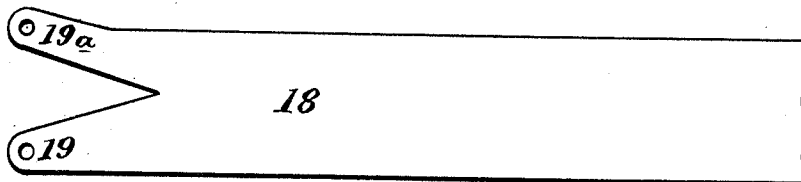
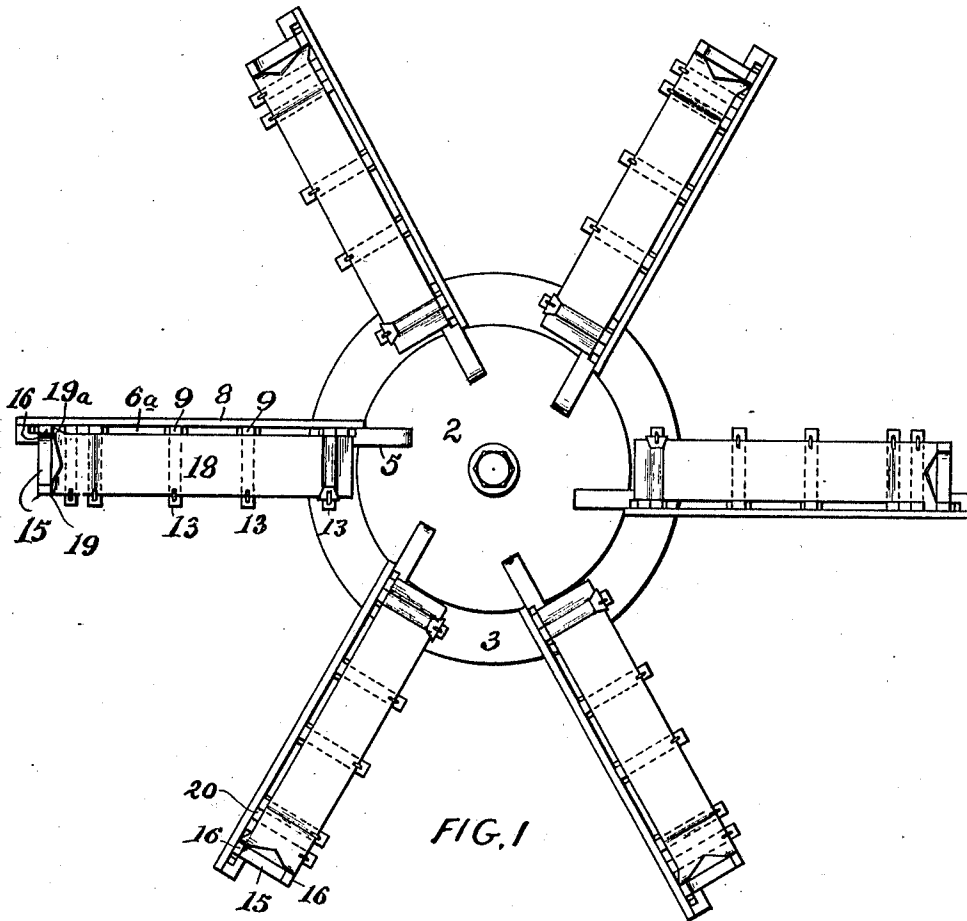


FIG. 2

Inventor
Joseph A. Schwartz

Witnesses
Daniel Webster, Jr.
E. H. T. Barlow.

By

[Signature]

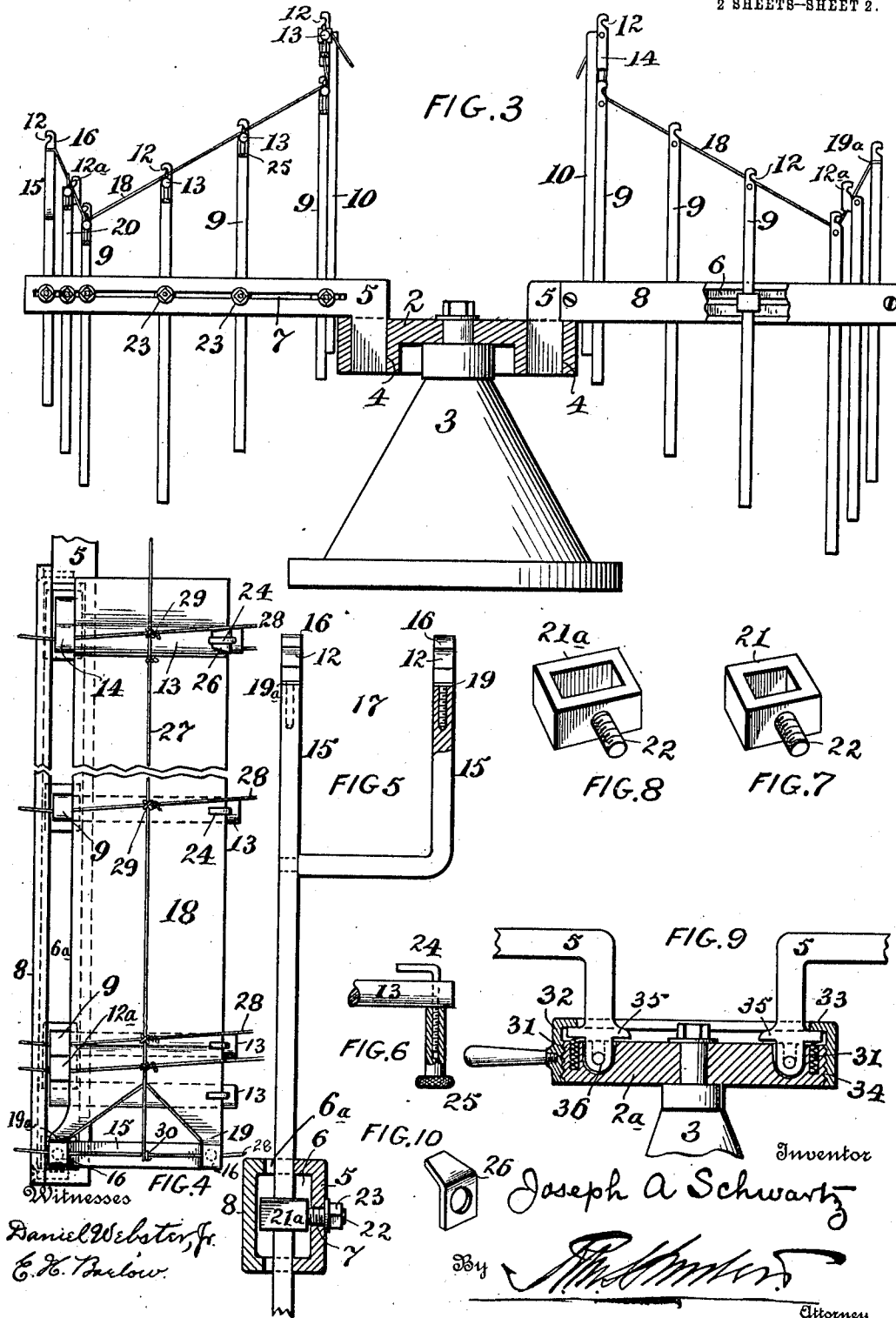
Attorney

J. A. SCHWARTZ.
WIRE HAT FRAME MAKING MACHINE.
APPLICATION FILED SEPT. 12, 1910.

989,303.

Patented Apr. 11, 1911.

2 SHEETS-SHEET 2.



UNITED STATES PATENT OFFICE

JOSEPH A. SCHWARTZ, OF PHILADELPHIA, PENNSYLVANIA.

WIRE-HAT-FRAME-MAKING MACHINE.

989,303.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed September 12, 1910. Serial No. 581,720.

To all whom it may concern:

Be it known that I, JOSEPH A. SCHWARTZ, a citizen of the United States, and a resident of the city of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Wire-Hat-Frame-Making Machines, of which the following is a specification.

My invention has reference to wire hat frame making machines and consists of certain improvements which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

The object of my invention is to provide a suitable construction of machine for the making of wire hat frames by the general method employed in making wire hat frames on plaster of Paris blocks but with capacity of making an infinite number of different shaped frames to suit the changing of the styles.

My object is also to provide in such machine capacity for making wire hat frames with deep rims, a feature which has not been possible with plaster of Paris blocks.

My invention consists of certain features of construction which are clearly illustrated in the drawings, fully described in the specification and more specifically defined in the claims.

Figure 1 is a plan view of a machine embodying my invention; Fig. 2 is a plan view of one of the radial plates forming a part of the block; Fig. 3 is a cross sectional elevation of my improved machine; Fig. 4 is a plan view of the structure of one of the radial arms and its connections; Fig. 5 is a cross section of one of the radial arms and an elevation of the outermost vertical bar; Fig. 6 is a sectional elevation of detail in connection with the vertical bar; Figs. 7 and 8 are perspective views of the bar clamps; Fig. 9 is a sectional elevation of a modification of the supporting means for the radial arm; and Fig. 10 is a perspective view of an angular washer used on my machine.

2 is a turn-table and is pivoted upon a base 3. The turn-table may have sockets 4 for receiving the inner ends of radial arms 5 of which there is preferably six, but I do not restrict myself to the number of these arms. The radial arms 5 are recessed at the back as at 6 and provided with a longitudinal slot 7. The upper and lower part of the arms are notched to form longitudinal slots

6^a when the back plate 8 is secured in position.

21 and 21^a are a series of clamps which are arranged within the recessed portion 6 of the radial arms and have screw threaded portions 22 which extend through the slot 7 of said arms, and nuts 23 are arranged upon the screws for drawing the clamping portions into the recess. The vertical bars 9 extend downward through the slots 6^a and through clamps 21 and by means of said clamps are drawn tightly against the arm so as to be held in any vertical adjustment desired. In the matter of the vertical bars 9 and 10 at the innermost ends of the radial arms 5, I employ a clamp 21^a (Fig. 8) which has a wider slot so as to simultaneously clamp both bars, the said bars resting against each other, as will be clearly understood by reference to Fig. 3. It will also be necessary in making some forms of hat brims to bring the bars 15 and 20 close together, and in which case one of the double clamps 21^a would be employed instead of the single clamps, this being a mere matter of detail and dependent upon the shape of the hat frame to be made.

All of the vertical bars 9, 10 and 20 are each provided at the top with notches to form hook portions, said hook portions being shown in the bars 9 and 10 at 12 in the bars 20 at 12^a, and said bars are also provided with lateral arms or supports 13 which may be provided at the outer ends with L shaped clamping hooks 24 which may be drawn down toward the arms by nuts 25 (Fig. 6).

The innermost bar 10 of each of the radial arms has its upper end 14 made with an overhand so that the arm 13 and the hook 12 thereof come immediately over the adjacent bar 9 and its hook and lateral arm, said construction being clearly shown in Fig. 3. This enables the upright part of the crown of the hat to be made vertical.

The outermost bar 15 is made bifurcated, as shown in Fig. 5, whereby there is a space 17 formed between the forked upper end. The upper ends of the bar are provided with notched or hook shaped portions 16 which are screwed down into place. 18 is a sheet metal plate which is held to the several lateral supports or arms 13 by the clamps 24 and the inner end of this plate is bent over the uppermost arm 13 of the bar 10 and may be clamped thereon by one of the clamps 24

supplemented, if desired, by an angular washer 26 constructed and arranged as illustrated more particularly in Figs. 4 and 10. The outermost end of the sheet metal plate 18 is bifurcated, as indicated in Figs. 2 and 4. The ends 19 and 19^a have apertures by which they are clamped in position upon the ends of the two upper parts of the bifurcated bar 15 by means of the clamping hook shaped part 16, as clearly indicated in Figs. 4 and 5. It will be noted that the end 19^a of the plate 18 is extended beyond the normal edge of the plate, the object being to reach the top of the main portion of the bar 15, which is arranged in line with the remaining bars, and hence to one side of the lateral edge of the sheet metal plate 18. These plates 18 of the several arms provide surfaces which correspond to the surfaces of a plaster of Paris hat frame block, and act as guides for the wires employed in making the hat frame, said wires being indicated at 27, 28, 29 and 30 in Fig. 4.

Where the outer rim of the hat frame is to have considerable depth and vertical shape, as indicated in Fig. 3, it is necessary to employ a bar 20 between the bars 9 and 15, otherwise the rim of the hat frame would not be of sufficient strength, and for this purpose the bar 20 has the hooked portion 12^a offset with respect to the laterally protecting arm or support 13, so that when the plate 18 rests against the lateral arm 13, the hook portion 12^a will be arranged inward with respect to the inner face of the plate, as shown in Fig. 3 so as to receive and hold the horizontal wire which is to be incorporated in the hat frame.

In employing my improved hat frame block machine, I arrange the several bars, 9, 10 and 15, with or without the bar 20 as the case may require, upon the radial arm with the hooks 12 arranged so as to provide the right shape of the hat with respect to the horizontal wires. The sheet metal plate 18 is then bent and clamped to the arms 13 and to the outermost bar 15, as previously described. Each of the radial arms 5 has its bars adjusted in proper position, and it is pointed out that these bars on one radial arm need not be adjusted in the same relation as the bars on another radial arm, as it is manifestly evident that the hat need not be circular and need not be symmetrical as to height all around. Whatever the shape desired may be, it is insured by the proper adjustment of the bars for receiving the horizontal wires. After the adjustment, the horizontal wires 28 (Fig. 4) are hooked around the hooks 12 of the corresponding bars of each radial arm. The cross or radial wires 27 are then twisted about the outermost wire 28 as a point between the two hook shaped clamps 16, as indicated at 30 in Fig. 4, and it is then bent upon the remaining

wires 28 and attached to them by the tying wires 29 and the extreme opposite end of said wire 27 is secured to the outermost wire 28 by being similarly twisted about it at the outermost part of the diametrically opposite radial arm and corresponding to what is indicated in 30 in Fig. 4. The plates 18 act as surfaces for supporting the wires 27 and at the same time acting as guides for the operator in introducing and operating upon the tying in wires 29 in a manner corresponding to the surfaces of the plaster of Paris hat blocks.

When the hat frame is finished, it may be disconnected from the hook portions 12 and 12^a by being sprung therefrom, or if desired, this disengaging operation may be facilitated by making the radial arms 5 adjustable so as to swing the upper ends of the vertical bars toward the center of the machine to a slight extent to disengage the hooks from the horizontal wires 28. Any suitable mechanism may be employed for this purpose and by way of illustration, the construction shown in Fig. 9 may be used. In this case, the radial arms 5 are hinged to the turn-table 2^a at 36 and have outwardly extending lugs acted upon by springs 31 to oscillate the arms 5 toward each other and toward the center of the machine. Feet 35 coöperating with the turn-table act to limit the inward movement of the arms 5. A ring 34 is screwed upon the outer part of the turn-table 2^a and is provided with an inwardly directed flange 32 which extends over the lugs on the radial arms 5 so that when the ring 34 is screwed down, the arms 5 are brought into their operative position for making the hat frame, but when the ring 34 is screwed upward, the springs 31 are allowed to act upon the arms to force them toward each other and release the hat frame.

While I have shown my improved apparatus in the form which is adapted for good commercial practice, I do not restrict myself to the details, as these may be modified in various ways without departing from the spirit of the invention.

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

1. In a wire hat frame machine, the combination of a plurality of radial arms, a plurality of vertical bars adjustably secured to each of the radial arms and each having a hook at its upper end and a lateral transverse arm at a distance below the hook, and radial sheet metal plates supported by and secured to the transverse arms and bent to the radial shape of the hat frame to be formed.

2. In a wire hat frame machine, the combination of a plurality of radial arms, a plurality of vertical bars adjustably secured to each of the radial arms and each having a

hook at its upper end and a lateral transverse arm at a distance below the hook and the vertical bars next to the innermost vertical bars being arranged below the transverse arms and hooked portions thereof, and separate radial sheet metal plates respectively supported by and secured to the transverse arms of the vertical bars of the plurality of radial arms and bent to the radial shape of the hat frame to be formed.

3. In a wire hat frame machine, the combination of a plurality of radial arms, a plurality of vertical bars adjustably secured to each of the radial arms and each having a hook at its upper end and a lateral transverse arm at a distance below the hook, sheet metal plates secured to the transverse arms, and clamping means for adjustably clamping the vertical bars to the radial arms.

4. In a wire hat frame machine, the combination of a plurality of radial arms, a plurality of vertical bars adjustably secured to each of the radial arms and each having a hook at its upper end and a lateral transverse arm at a distance below the hook, sheet metal plates secured to the transverse arms and made bifurcated at their outer ends where they connect with the outermost vertical bars, means for securing the plates to the transverse arms, and clamping means for adjustably clamping the vertical bars to the radial arms.

5. In a wire hat frame machine, the combination of a plurality of radial arms, a plurality of vertical bars adjustably secured to each of the radial arms and each having a hook at its upper end in the same radial plane and a lateral transverse arm at a distance below the hook and the outermost vertical bars also having a second hook to one side of the first mentioned hook to form a horizontal space between the hooks, and sheet metal plates secured to the transverse arms.

6. In a wire hat frame machine, the combination of a plurality of radial guide frames, a plurality of vertical bars for each radial guide frame and each bar having an outwardly directed hook at its upper end and a lateral support slightly below the level of the hook, adjustable clamping devices for clamping said bars in the radial guide frame both vertically and radially, and a sheet metal plate for each set of the bars supported upon the lateral supports thereof.

7. In a wire hat frame machine, the combination of a plurality of radial guide frames, a plurality of vertical bars for each radial guide frame and each bar having an outwardly directed hook at its upper end and a lateral support slightly below the level of the hook, adjustable clamping devices for clamping said bars in the radial guide frame both vertically and radially, an outer bifurcated bar having two hooked por-

tions for each radial guide frame, means to clamp it in position, and a sheet metal plate for each set of the bars supported upon the lateral supports thereof and having its end bifurcated and the bifurcated parts respectively to the two hooked shaped parts of the bifurcated outer bar.

8. In a wire hat frame machine, the combination of a plurality of radial guide frames, a plurality of vertical bars for each radial guide frame and each bar having an outwardly directed hook at its upper end and a lateral support slightly below the level of the hook, adjustable clamping devices for clamping said bars in the radial guide frame both vertically and radially, an outer bifurcated bar having two hooked portions for each radial guide frame, means to clamp it in position, a sheet metal plate for each set of the bars supported upon the lateral supports thereof and having its end bifurcated and the bifurcated parts respectively secured to the two hooked shaped parts of the bifurcated outer bar, and separate means on each bar for securing the plate to the lateral supports thereof.

9. In a wire hat frame, the combination of a plurality of radial guide frames, with a radial sheet metal plate arranged above each of the guide frames and bent into a shape corresponding to the cross section of the hat frame to be made from the crown outwardly, adjusting devices secured to each of the radial guide frames for holding the respective plates in position and shape and provided with means adjacent to the plates for holding the horizontal hat wires close to the plates during the operation of making a hat frame.

10. In a wire hat frame machine, the combination of a plurality of radial guide frames, with a radial sheet metal plate arranged above each of the guide frames and bent into a shape corresponding to the cross section of the hat frame to be made from the crown outwardly, adjusting devices secured to each of the radial guide frames for holding the respective plates in position and shape and provided with means adjacent to the plates for holding the horizontal hat wires close to the plates during the operation of making a hat frame, and means operating upon the radial guide frames for moving the plurality of plates radially toward each other when it is desired to remove the finished wire hat frame.

11. In a wire hat frame machine, a wire supporting and guiding bar consisting of a vertical bar having at its top a notch to form a hook and a laterally extending arm immediately below the hook, combined with a radial sheet metal plate supported by the arm.

12. In a wire hat frame machine, a wire supporting and guiding bar consisting of

a vertical bar having at its top a notch to form a hook and a laterally extending arm immediately below the hook combined with clamping means on the free end of the arm and a radial sheet metal plate clamped to the arm by the clamping means.

13. In a wire hat frame machine, a wire supporting and guiding bar consisting of a vertical bar having at its top an overhanging part formed with a hooked top and a lateral arm immediately below the hook and said hook and arm being out of alinement with the lower part of the vertical bar combined with a vertical bar sliding against the lower part of the first mentioned bar so as to be under the overhanging part of the same and the upper end of the last mentioned bar being also provided with a hook portion, clamping means for clamping the two bars in adjustment to regulate the distance of the two hooked portions one above the other, and a radial plate structure supported by the lateral arm.

14. In a wire hat frame machine, a plurality of wire supporting and guiding bars each consisting of a vertical bar bifurcated at the top and each of the bifurcated parts

having outwardly directed notches to form hooks said bars being arranged approximately in a circle.

15. In a wire hat frame machine, a wire supporting and guiding bar consisting of a vertical bar bifurcated at the top and each of the bifurcated parts combined with clamping ends having outwardly directed notches to form hooks, and a radial guiding plate bifurcated at its ends and said ends secured upon said clamping ends of the bars.

16. In a wire hat frame machine, a wire supporting and guiding bar consisting of a vertical bar bifurcated at the top and each of the bifurcated parts combined with clamping ends screwed thereto and having outwardly directed notches to form hooks, and a radial guiding plate bifurcated at its ends and said ends secured upon said clamping ends of the bars.

In testimony of which invention, I hereunto set my hand.

JOSEPH A. SCHWARTZ.

Witnesses:

R. M. HUNTER,
HORACE D. REEVE.