S. MANN.

HAT FRAME MACHINE.

APPLICATION FILED APR. 7, 1910.

970,935.

Patented Sept. 20, 1910.

3 SHEETS—SHEET 1.

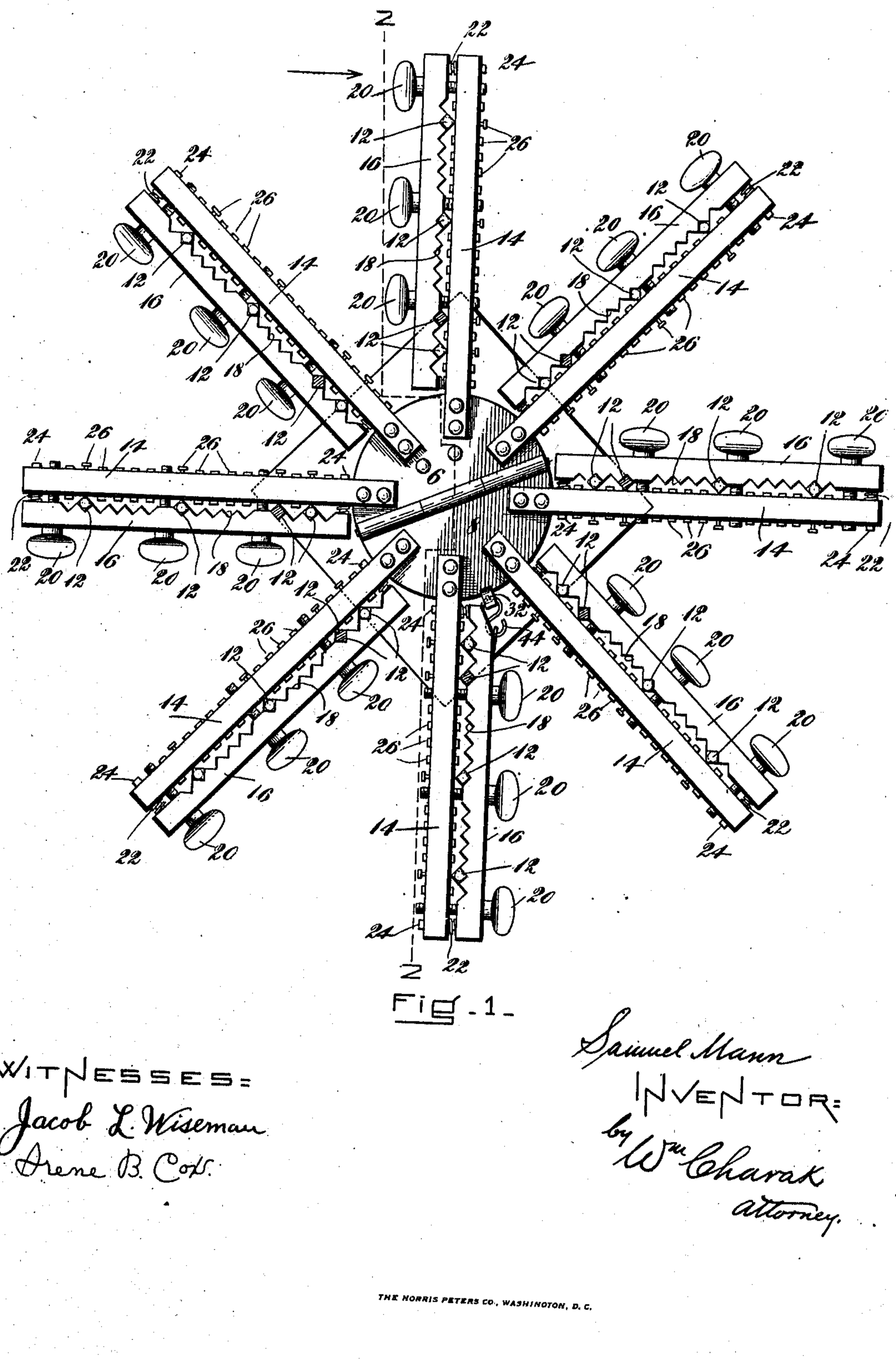

Fig. 1.

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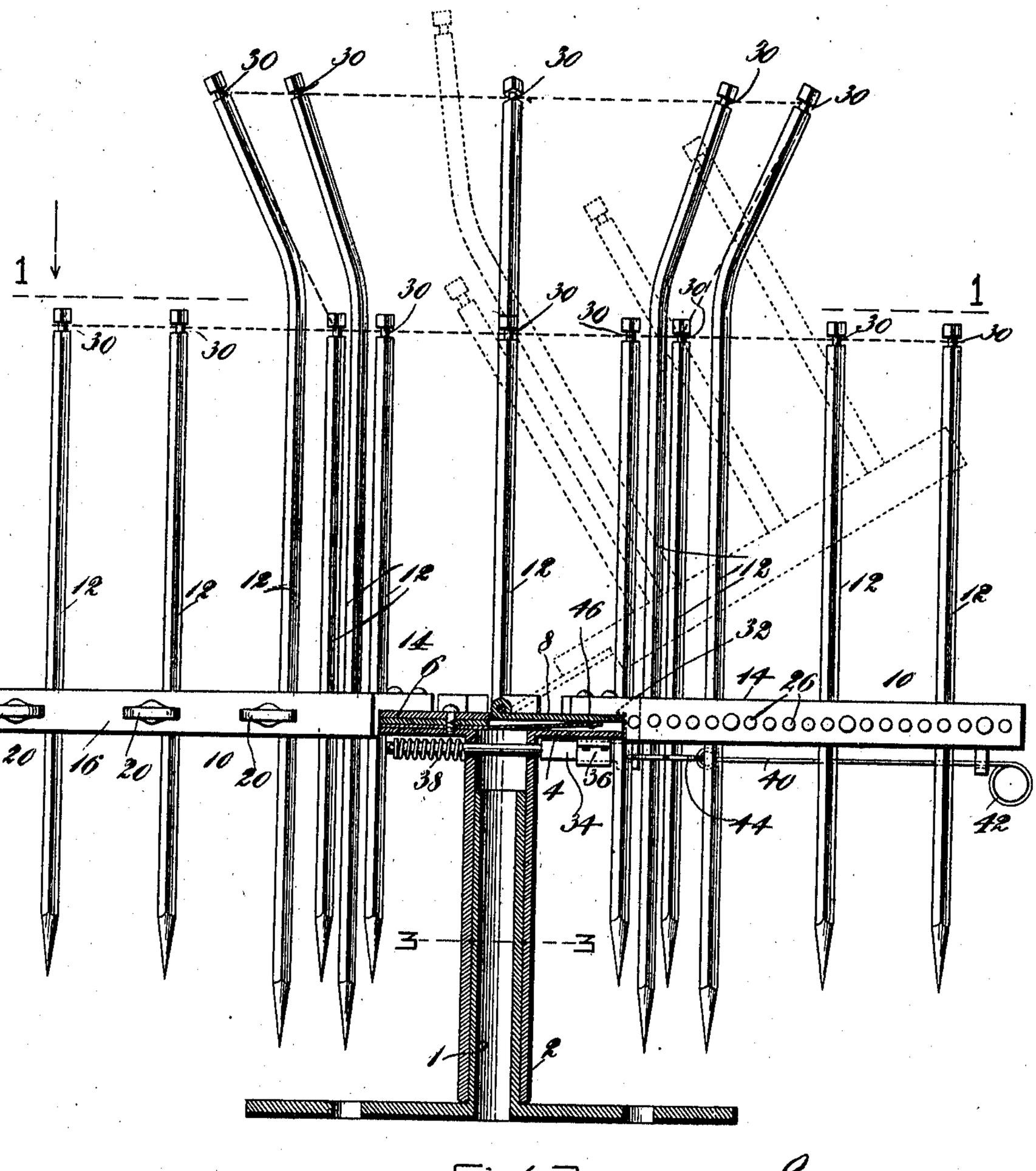

Fig. 2.

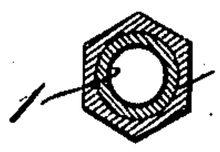

Fig. 3.

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3 SHEETS—SHEET 3.

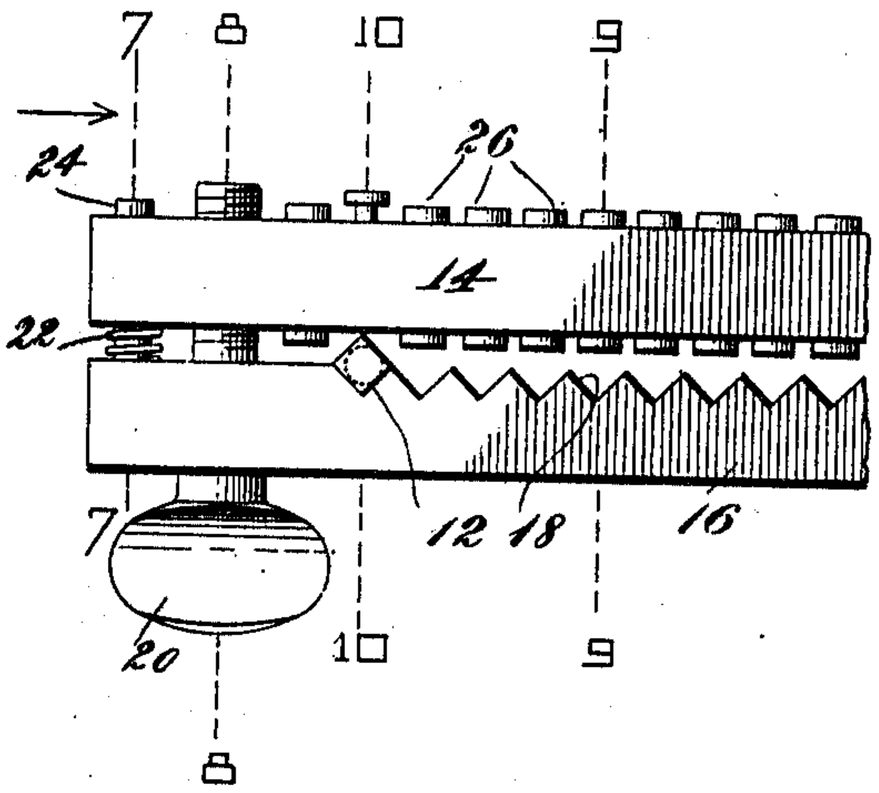

Fig. 4.

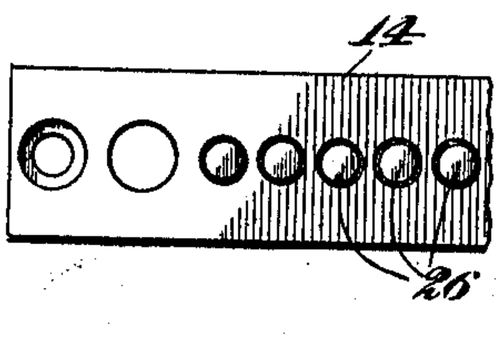

Fig. 5.

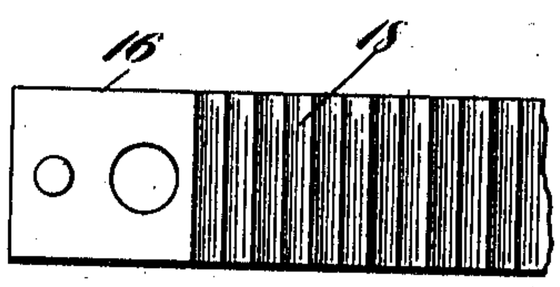

Fig. 6.

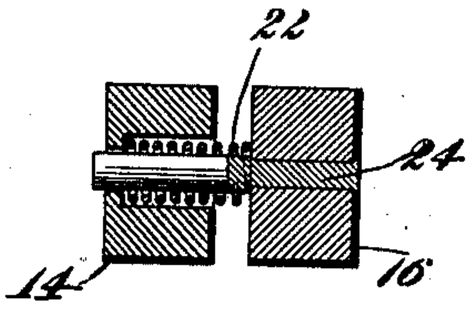

Fig. 7.

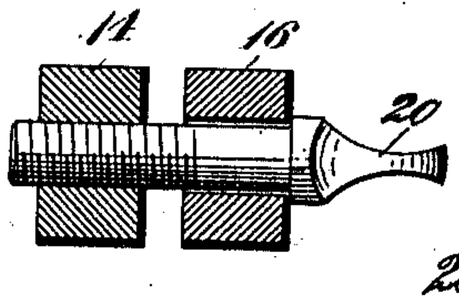

Fig. 8.

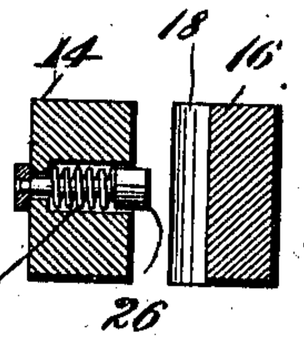

Fig. 9.

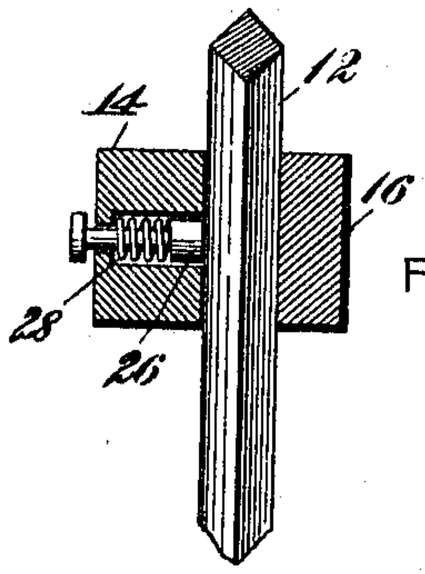

Fig. 10.

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UNITED STATES PATENT OFFICE.

SAMUEL MANN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO IDEAL HAT FRAME MACHINE COMPANY, A CORPORATION OF MASSACHUSETTS.

HAT-FRAME MACHINE.

970,935. Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed April 7, 1910. Serial No. 554,070.

To all whom it may concern:

Be it known that I, SAMUEL MANN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Hat-Frame Machines, of which the following is a specification.

This invention relates to machines for forming skeleton hat frames of wire.

One object of the invention is to provide a forming machine for wire hat frames, which may be more readily and quickly adjusted with precision to any style or shape of hat than has heretofore been possible, and when once adjusted may be secured in such adjusted position so that the adjustment will remain for any desired number of hat frames, thereby enabling the operator to produce the frames rapidly and uniformly; and to quickly change from one style or shape of hat frame to another, and accurately adjust the machine therefor.

With the above object in view, a feature of the invention in its broader aspects contemplates the provision of wire-supporting members adjustably mounted in guiding means, and means which automatically hold the supporting members in adjusted position, together with means for securing the supporting members against vertical movement during the process of manipulating the wires in the formation of a hat frame.

In the present embodiment of the invention individual yielding means coöperate with each wire-supporting member to automatically hold the supporting member in adjusted position, yet allowing it to be moved freely to adjust it to fit the particular style of frame which is to be set up. This enables the operator to quickly adjust the supporting members with exceeding nicety to fit the frame-work, and obviates the necessity of setting a screw or bolt against each supporting member to hold it in adjusted position. After the supporting members have all been adjusted as desired they are clamped in their guides and secured against displacement while the hat frame is being built upon them.

Furthermore, the invention comprises in addition to the features already referred to, various combinations and arrangements of parts as well as certain details of construction which will be hereinafter fully described and will be defined in the claims.

The invention will be readily understood from the following description and an inspection of the accompanying drawings, in which—

Figure 1 is a sectional plan view taken on the line 1—1 in Fig. 2; Fig. 2 is a vertical section taken on the line 2—2 in Fig. 1; Fig. 3 is a horizontal section taken on the line 3—3 in Fig. 2; Fig. 4 is a fragmentary plan of a guide for the wire-supporting members; Figs. 5 and 6 are elevational views of the inner faces of the guide members; and Figs. 7, 8, 9 and 10 are vertical sections taken on the lines 7—7, 8—8, 9—9, and 10—10, respectively, in Fig. 4.

As shown in the drawings the machine comprises a cylindrical supporting standard or column 1, which may be secured to a bench or other suitable support. Mounted to rotate upon column 1 is a sleeve 2, at the upper end of which is a base or head 4. This base comprises a fixed portion 6, and a movable portion 8 which is formed by a plate hinged to the fixed portion, the two constituting a collapsible two-part base or head. Mounted upon the base or head is a radially arranged series of guides 10, for the wire supporting members 12. Each guide comprises an arm 14, secured to the base, there being eight in the present instance, four of which are secured to the fixed portion 6 and four are secured to the movable portion 8. Opposing each arm 14 and carried thereby is a bar 16, provided with grooves or channels 18, which, in the present instance, are substantially right-angled to fit the rectangular supporting members 12, although any other shape of supporting member and channel may be employed.

The bar 14 is provided with threaded holes for receiving clamping screws 20 carried by the arm 16, of which there are three to each bar. By means of the screws 20 the bars 14 are drawn toward their supporting arms to clamp and secure the wire-supporting members in adjusted position. In order to keep the guide members separated to enable the pointed lower ends of the wire-supporting members to be easily inserted in their proper places, springs 22 are inserted between the guide members and carried by pins 24 secured in the arms 16 and projecting through the bars 14, two of these springs being provided for each guide.

In order to enable the wire-supporting members to be quickly and accurately adjusted and to automatically hold them in adjusted position, spring pressed plungers 26 are provided, one for each supporting member. The plungers are suitably mounted in the bars 14 opposite the grooves 18 and are pressed outwardly by the springs 28. The clamping screws 20 are so adjusted that the pointed ends of the supporting members 12 may be forced through the guides, and so that the ends of the plungers will exert sufficient pressure upon said members to hold them against the bars and sustain them in any adjusted position. The wire-supporting members are formed with a circumferential wire-receiving groove 30 at their upper ends, and they may be readily pushed up or down in the guides so that each groove 30 will correspond exactly to the position of the particular portion of the hat frame which it is to hold. When the supporting members are adjusted the plungers hold them until they are secured against further movement by being clamped between the two guide members by the clamping screws 20. The machine is now ready to receive the wires for the formation of the frame.

After the frame is completed it is desirable to remove it from the machine without disturbing the adjustment of the wire-supporting members. To this end the portion of the machine mounted upon the movable portion of the base is tilted upwardly into the dotted line position shown in Fig. 2. For the purpose of holding the movable portion of the plate 8 in its normal position, a latch or hook 32 is provided, mounted on one end of the plunger 34 guided by a trap 36 on the under side of the fixed base 6, and passing through holes in the sleeve 2. A spring 38 embraces the other end of the plunger and tends to keep the latch in engaging position. In order to withdraw the latch from engagement with the plate 8, a rod 40 is provided having a finger-hold or loop 42 at one end, and connected at its other end to a link 44, which in turn is connected to the latch. When the wire frame is completed, the rod 40 is pulled toward the right, whereupon the latch is withdrawn from engagement with the plate 8, and said plate may be tilted into the dotted line position shown in Fig. 2. To aid the plate in its upward movement, when the base is collapsed, a spring 46 may be provided secured to the stationary portion 6 of the base and bearing against the under side of said plate. After the wire frame is removed from the machine the movable portion is pushed down and the catch 32 secures it in position ready for making another frame.

From the construction above set forth it will be observed that the necessity of manipulating a set screw or bolt for holding each separate member during the operation of adjusting the wire-supporting members to fit any particular style of hat, is entirely obviated, and the operator is enabled to adjust the machine much more quickly and accurately; and when adjusted to then secure all the supporting members against displacement during the operations incident to the formation of a hat frame. Furthermore, by having the head or base mounted to rotate, all portions of the machine can be brought into convenient position for the operator to handle.

While I have illustrated and described a preferred embodiment of the invention, I am aware that many modifications can be made by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction shown and described, but

What I claim is:—

1. In a hat frame machine, a series of guides, a series of wire-supporting members held vertically in each guide, individual means for yieldingly clamping each supporting member against the guide, and means for securing the supporting members against movement.

2. In a hat frame machine, a series of guides, a series of wire-supporting members for each guide, spring pressed means on each guide for automatically holding said supporting members in upright position yet allowing them to be adjusted vertically, and means for securing the supporting members in adjusted position.

3. In a hat frame machine, a series of guides provided with transverse grooves, a series of wire-supporting members located in said grooves, and individual means for yieldingly clamping each supporting member in its groove.

4. In a hat frame machine, a series of guides provided with transverse grooves, a series of wire-supporting members located in said grooves, individual means for yieldingly clamping each supporting member in its groove, and means for securing the supporting members against vertical movement.

5. In a hat frame machine, a series of radially arranged guides, a series of wire-supporting members held vertically in each guide, individual means for yieldingly holding each supporting member against the guide to allow vertical adjustment of said member, and means for securing the supporting members against vertical movement.

6. In a hat frame machine, a series of radially arranged guides, a series of wire-supporting members for each guide, spring pressed plungers for yieldingly holding the separate members against the guides to al-

low vertical adjustment thereof, and means for securing the supporting members against vertical movement.

7. In a hat frame machine, a guide comprising a pair of opposed bars, one of said bars being provided with guiding means, a series of wire-supporting members coöperating with said guiding means, and spring pressed means for yieldingly holding said supporting members in said guiding means, and allowing vertical movement thereof.

8. In a hat frame machine, a guide comprising a pair of opposed bars, one of said bars having a series of transverse grooves in its inner face, a series of spring pressed plungers carried by the other of said bars, means for drawing said bars together, and means for opposing the drawing together of said bars.

9. In a hat frame machine, the combination of a base, a series of guides comprising arms carried by said base, a bar carried by each arm, one member of each guide being provided with grooves on its inner face, means for drawing said guide members together, and means for separating them.

10. In a hat frame machine, the combination of a base, a series of guides comprising arms carried by said base, a bar carried by each arm, one member of each guide being provided with grooves on its inner face, a series of wire-supporting members for each guide, individual means for yieldingly holding each supporting member in its guide, means for drawing said guide members together, and means tending to separate them.

11. In a hat frame machine, a series of radially arranged guides, each guide being composed of a pair of opposed bars, a series of wire-supporting members for each guide, individual means for yieldingly holding each supporting member in its guide so that it may be adjusted vertically, means for clamping the bars against said supporting members to secure them in adjusted position, and yielding means opposed to the action of said clamping means.

12. In a hat frame machine, the combination of a standard, a base mounted to rotate thereon, a series of radially arranged guides carried by said base, a series of wire-supporting members, individual means for yieldingly holding the wire supporting members in said guides and enabling them to be adjusted vertically and automatically held in adjusted position, and means for securing the supporting members against vertical movement.

13. In a hat frame machine, the combination of a standard, a base mounted to rotate thereon, a plate hinged to said base, a plurality of guides mounted on said base and plate, a plunger carrying a latch engaging the upper face of the plate for holding the plate against the base, a spring surrounding the plunger and tending normally to retain the latch in holding position, and means for withdrawing the latch to free the plate to enable the latter to be tilted.

14. In a hat frame machine, the combination of a standard, a two-part base mounted to rotate thereon, a spring pressed latch for holding the members of said two-part base in operative relation, means for withdrawing said latch from its holding position, a leaf spring tending normally to collapse said base, a series of guides carried by said base, and wire-supporting members yieldingly held in said guides.

In testimony whereof I have affixed my signature, in presence of witnesses.

SAMUEL MANN.

Witnesses:
WM. CHARAK,
HIRAM J. COOPER,
IRENE B. COX.