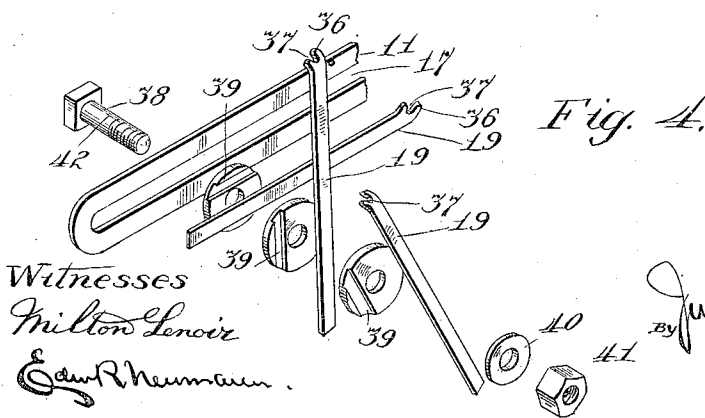
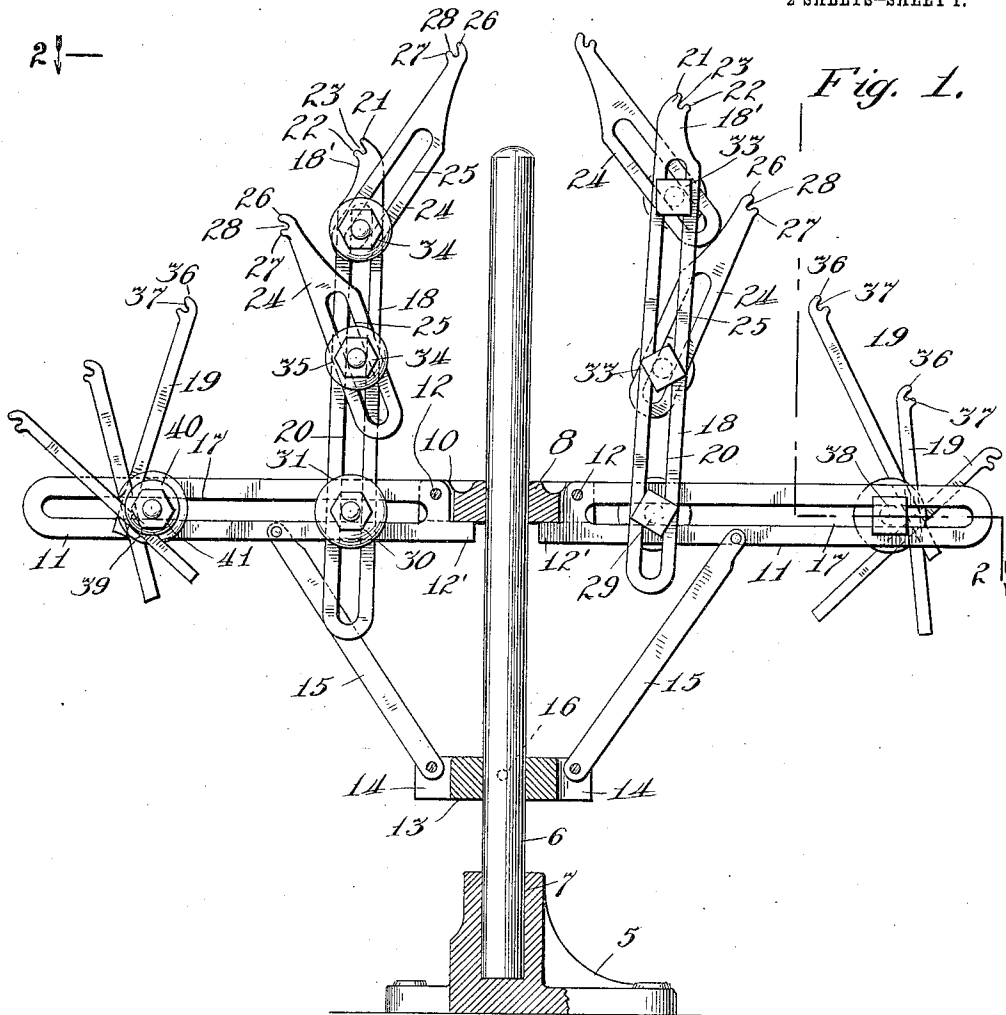


J. NATTENHEIMER.
HAT FRAME FORMING DEVICE.
APPLICATION FILED DEC. 12, 1911.

1,046,006.

Patented Dec. 3, 1912.

2 SHEETS-SHEET 1.

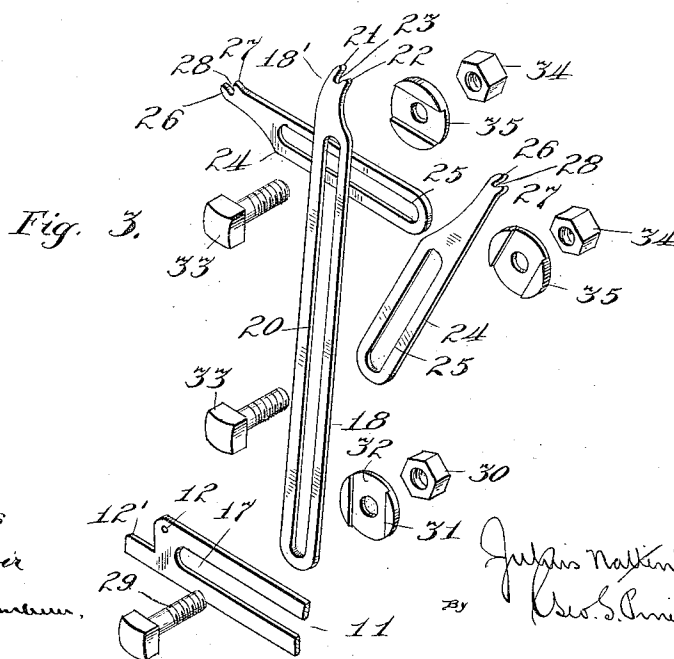
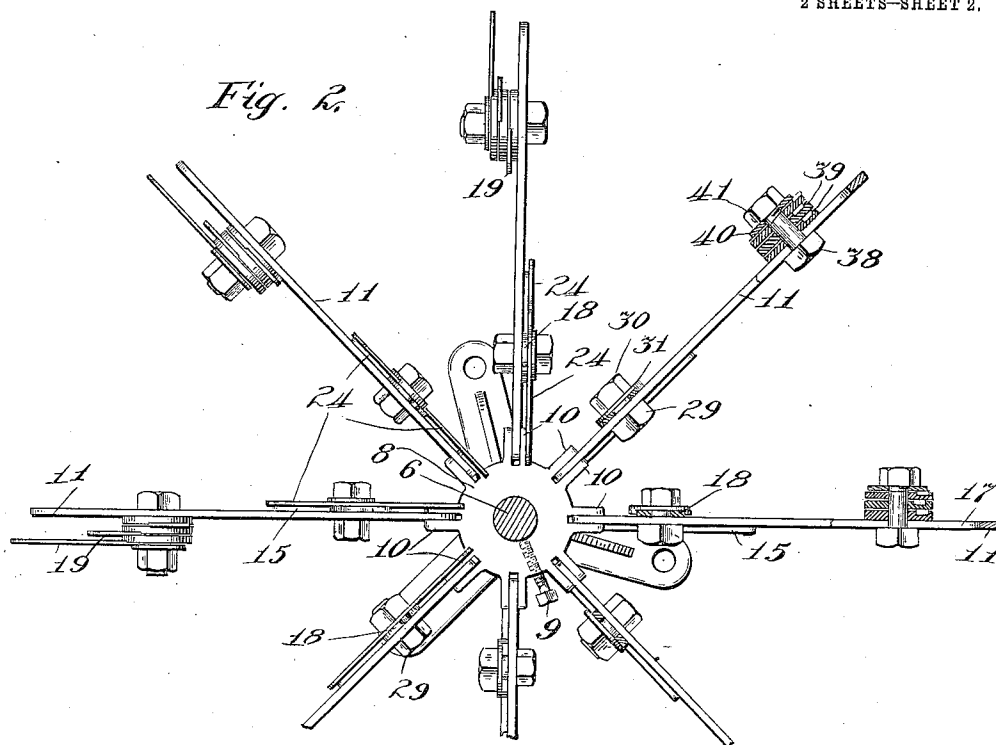


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1,046,006.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JULIUS NATTENHEIMER, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO E. EIGER & BROS., OF CHICAGO, ILLINOIS, COPARTNERS.

HAT-FRAME-FORMING DEVICE.

1,046,006.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed December 12, 1911. Serial No. 665,364.

To all whom it may concern:

Be it known that I, JULIUS NATTENHEIMER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hat-Frame-Forming Devices, of which the following is a specification.

My invention relates to hat-frame forming devices and its general object is to provide more simplified and more efficient construction and operation.

The invention may be considered as an improvement of the mechanism shown and described in my Patent No. 881257, of March 10, 1908.

More in detail the important objects of the invention are to provide improved construction and arrangement of main radial arms and wire supporting arms and fingers; to provide improved means for enabling adjustment to be made more readily and efficiently between the wire supporting arms and main arms and between the wire supporting arms and the wire supporting fingers; to provide improved pivot connection between the main arms and a supporting standard; and to provide improved means for enabling the main arms to be swung simultaneously upwardly and inwardly to release the various wire supporting arms and fingers from a built up wire frame.

In the accompanying drawings which clearly illustrate my invention: Figure 1 is a vertical sectional view of the device; Fig. 2, is a view looking from plane 2—2, Fig. 1; Fig. 3, is a perspective view of a main arm, a wire supporting arm, wire supporting fingers, and the connecting bolt mechanisms, the parts being shown horizontally separated but in normal vertical alinement, and Fig. 4 is a similar perspective view of a main arm, wire supporting fingers, and connecting bolt and washer mechanisms.

The support for the device comprises a base 5, and a vertical cylindrical rod 6 rotatable in a socket 7 in the base. The rod receives a block 8 which may be shifted up and down thereon and locked in any position as by a set screw 9. This block is cylindrical and extending radially from its periphery are pairs of vertical pivot ears 10, 10. A flat supporting arm 11 is pivoted at its upper inner corner 12 to each pair of ears 11 and at its lower inner corner the extension

12' is provided to abut against the lower face of the block 8 to thus normally hold the arm in horizontal radial position. These supporting arms may have different lengths or may be of uniform length as shown.

Below block 8, another block 13 is slidable on rod 6 and has pairs of ears 14, 14 equal in number to and parallel with the ears 10, 10 on block 8. A link 15 pivots at its lower end to each pair of ears 14, 14 and extends upwardly and outwardly and is pivoted at its upper end to one of the main supporting arms 11 at an intermediate point thereof. When block 8 is moved upwardly from the position shown in Fig. 1 the main arms 11 will be simultaneously swung upwardly and inwardly. A set screw 16 may be provided for the block 13 to hold it in position.

Each arm 11 has a longitudinal slot 17 extending substantially its entire length for accommodating bolts for securing wire supporting arms 18 and 19. The arms 18 are long and flat and each has a longitudinal slot 20 extending substantially its entire length, the upper end 18' being contracted and terminating in prongs 21 and 22 with a wire receiving notch 23 between them. Adjustable on each wire supporting arm 18 are one or more wire supporting fingers 24 which have the same shape as the arms and which may be of any length, each arm having a slot 25 and prongs 26 and 27 at its end forming a wire holding notch 28. Referring particularly to Fig. 3 each wire supporting arm 18 is locked in adjusted position to its main supporting arm by a bolt 29, nut 30, and washer 31, the washer having the diametral groove 32 for receiving the arm 18. In a similar manner the fingers 24 are rigidly held in adjusted positions by bolts, 33, nuts 34, and washers 35.

The wire supporting arms 19 are not slotted but like the arms 18 they terminate in prongs 36 and wire holding slots 37. The arrangement for adjusting and securing these arms 19 on the main arms 11 is best shown in Fig. 4. A bolt 38 extends through the slot 17 of the main arm and carries a plurality of round washers each having a chordal slot 39 for receiving one of the arms 19, the slots being as wide as the arms but of slightly less depth than the thickness of the arms. A washer 40 engages against the outermost arm and a nut 41 threading on the end of the bolt engages this washer to se-

curely clamp the various arms between the washers. Upon slight loosening of the nut the various arms can be set as desired and friction will hold them until the nut is finally tightened and the arms locked in final position. The shank of the bolt may be flattened as shown at 42 to prevent turning thereof in the slot of the main arm when the nut is tightened.

10 The arms 19 may be at the outer ends of the main arms 11 and the arms 18 at the inner ends as shown, or they may be arranged in any other way. When the arms and fingers are set the wire is applied to the prongs and slots of the arms and fingers to form the desired frame whereupon the lower block 13 is raised and the main arms swung to carry the ends of the wire supporting arms and fingers away from the wires so that the form is released. After removal of the form the arms 11 are again lowered until they are locked in horizontal position by engagement of their extensions 12' with the block 8. The block 13 is then locked by its set screw 16 so that the arms 11 cannot swing when the wire is being applied to build up the form.

I do not desire to be limited to the precise construction and arrangement shown and described as changes and modifications are

possible which would come within the scope of my invention.

I therefore claim the following:

In a hat frame machine, the combination of a vertical supporting rod, a block 35 secured to said rod and having radial slots, radial arms pivoted at their inner ends to said block in said slots, an extension 12' at the inner end of each arm normally abutting against the lower side of said block so that the arms are held in horizontal position, a collar slidable on said supporting rod below said block and having radial slots, links pivoted at their lower ends to the collar in said slots and pivoted at their upper ends to the respective arms whereby upward movement of said collar will effect a simultaneous upward swing of said radial arms, supporting arms adjustably pivoted to said radial arms, and a plurality of fingers 50 adjustably pivoted to each of said supporting arms.

In witness whereof I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

JULIUS NATTENHEIMER.

Witnesses:

EDW. R. NEWMANN,
JULIUS M. KAHN.