

No. 770,813.

PATENTED SEPT. 27, 1904.

H. W. LARSSON.  
WHIP MAKING MACHINE.  
APPLICATION FILED APR. 13, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

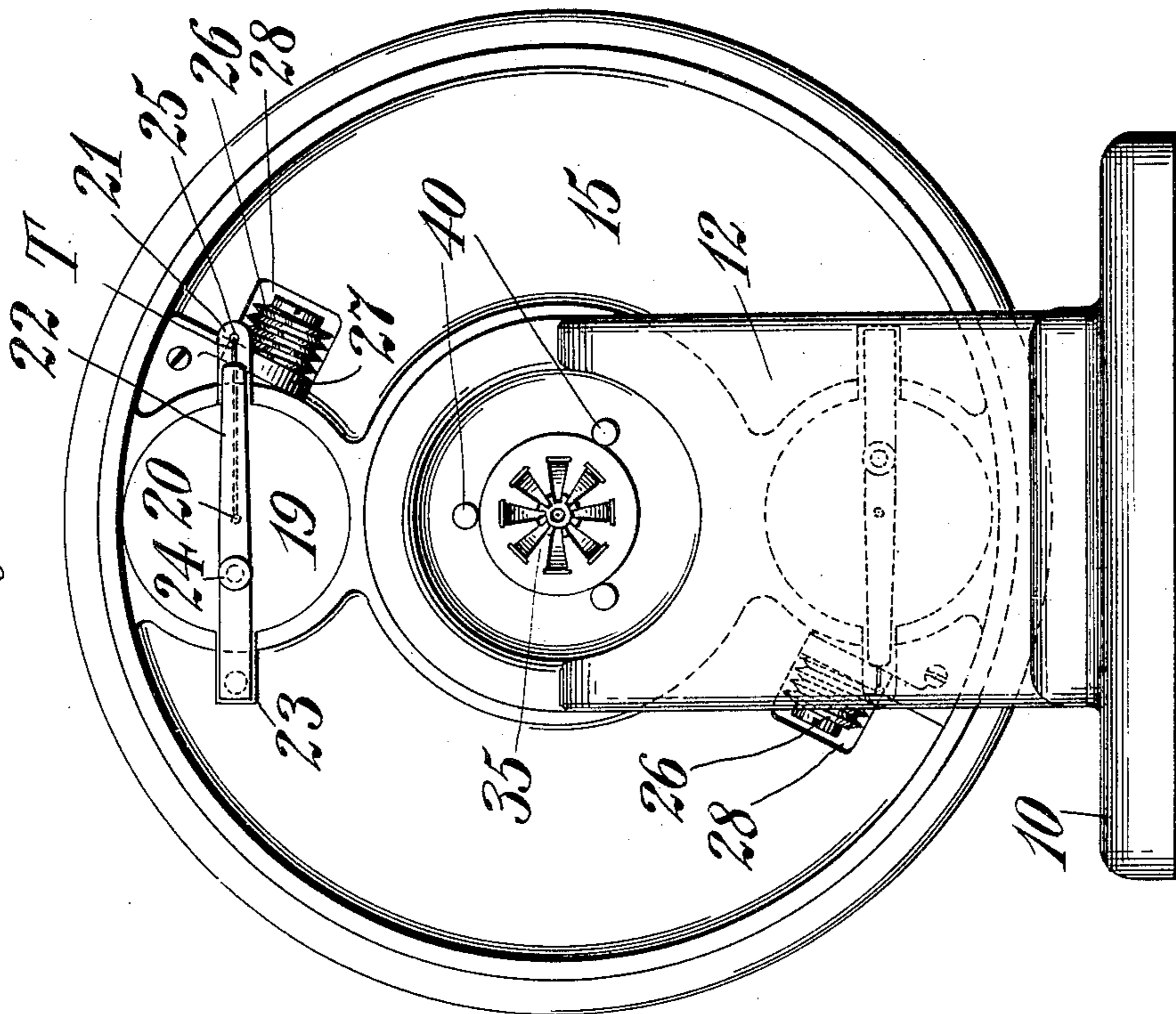
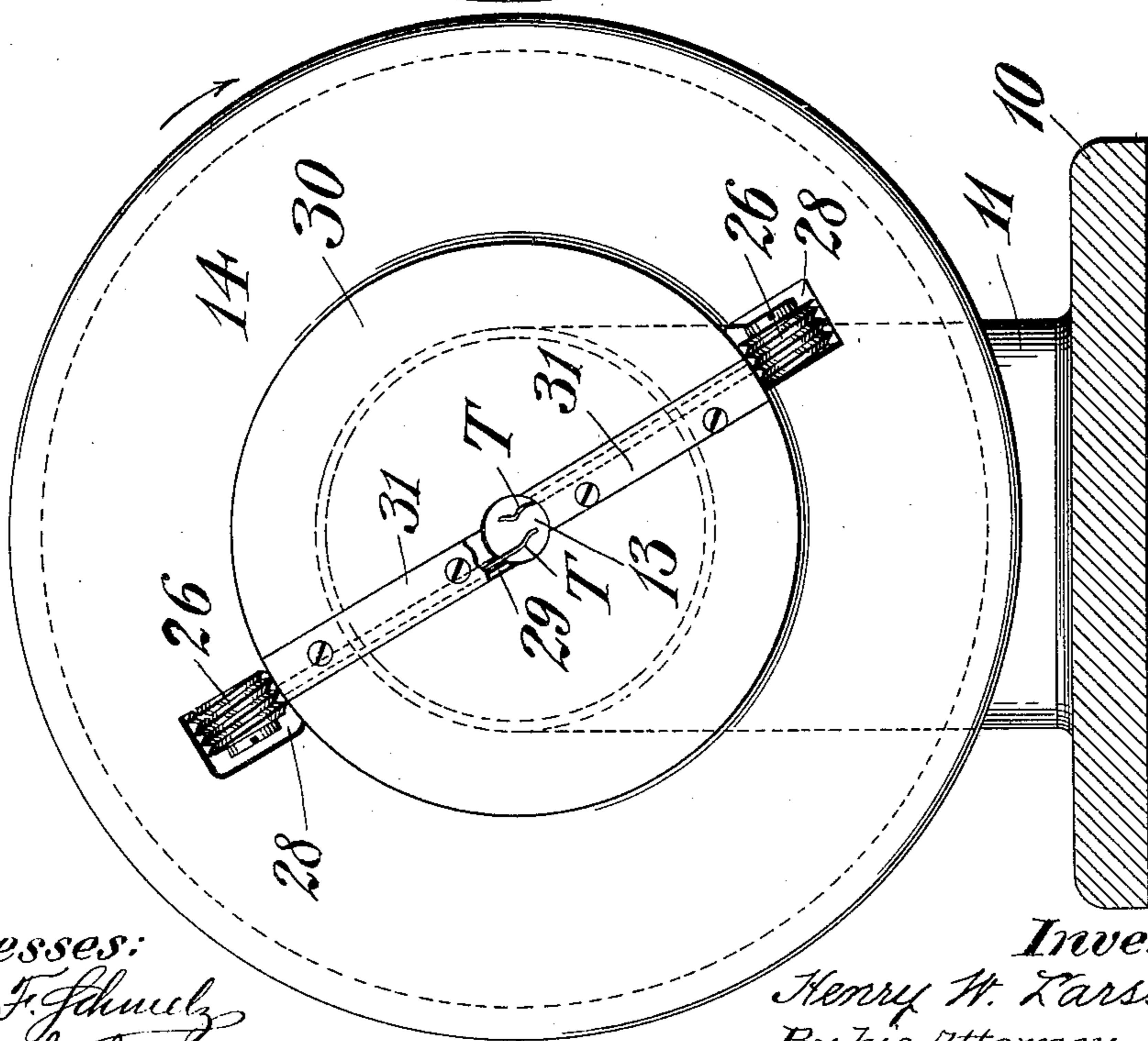


Fig. 2.



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Inventor:  
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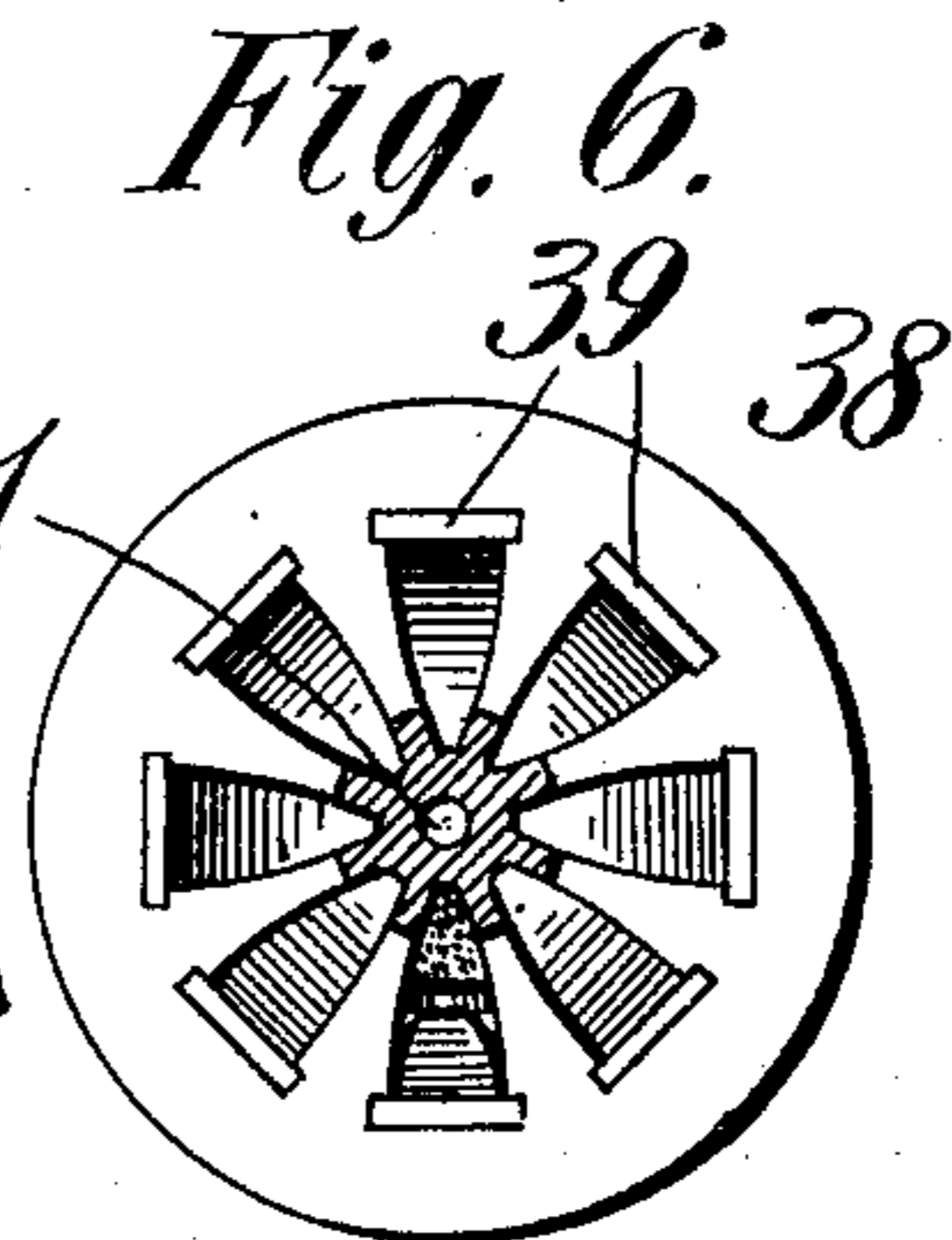
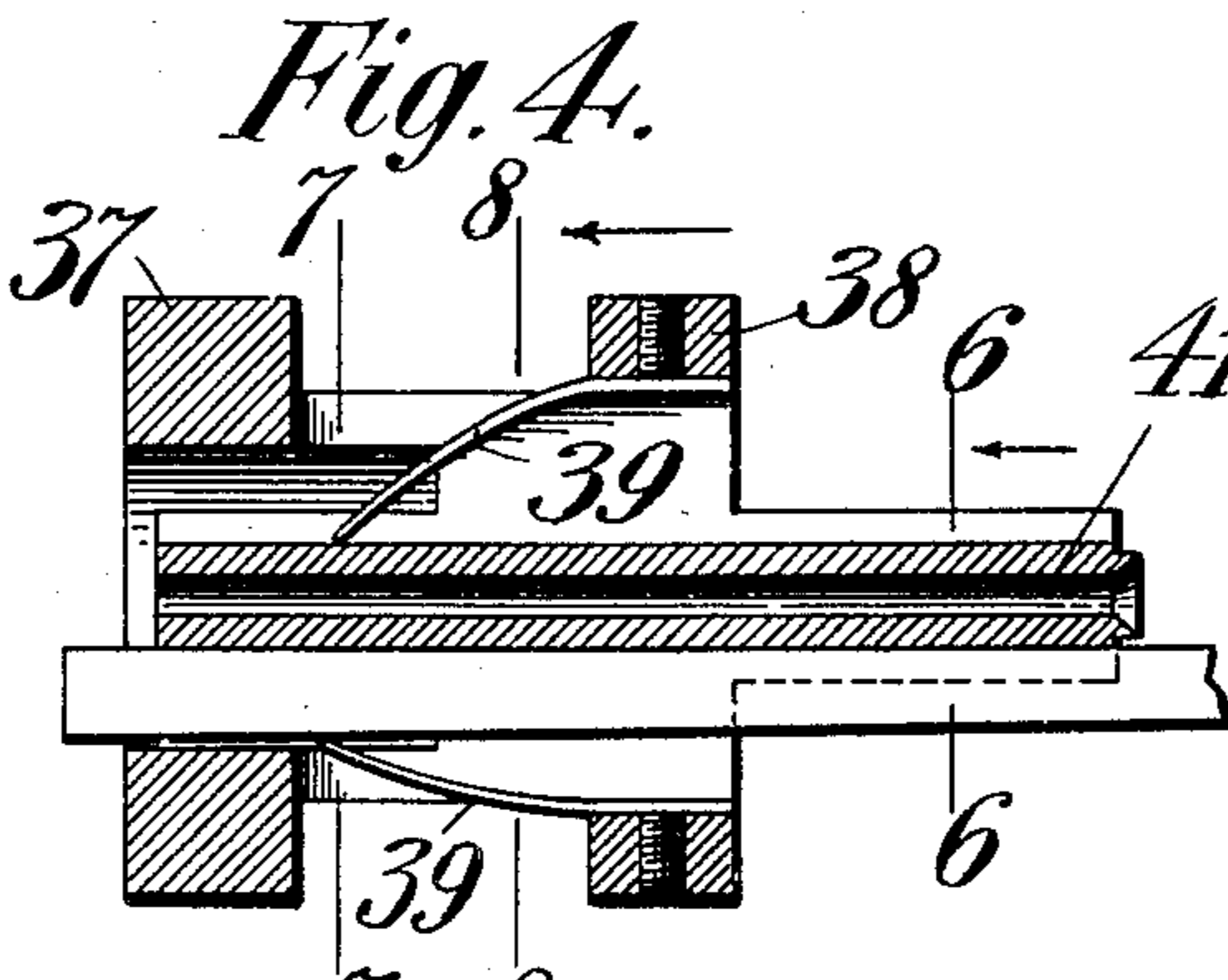
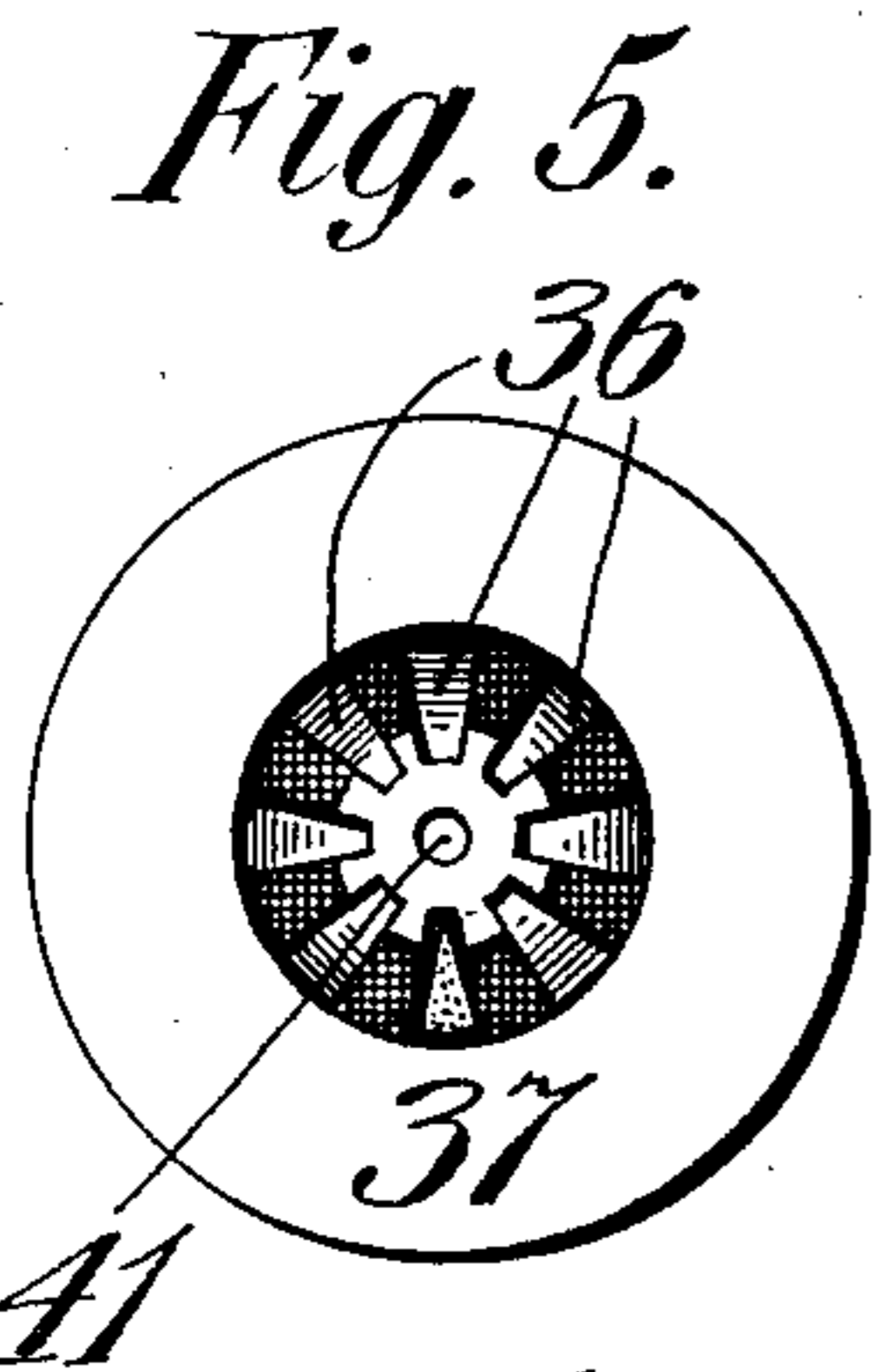
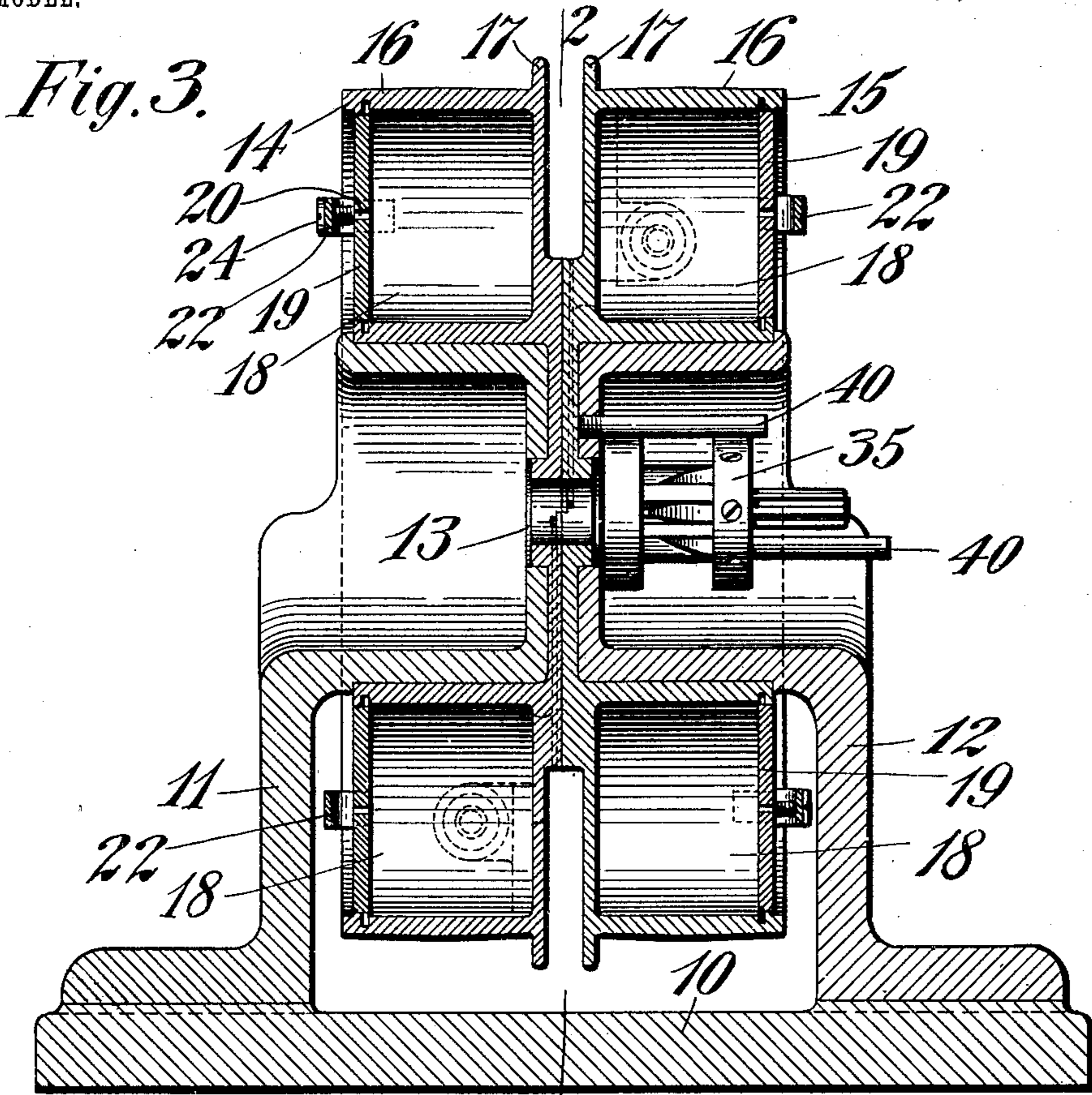
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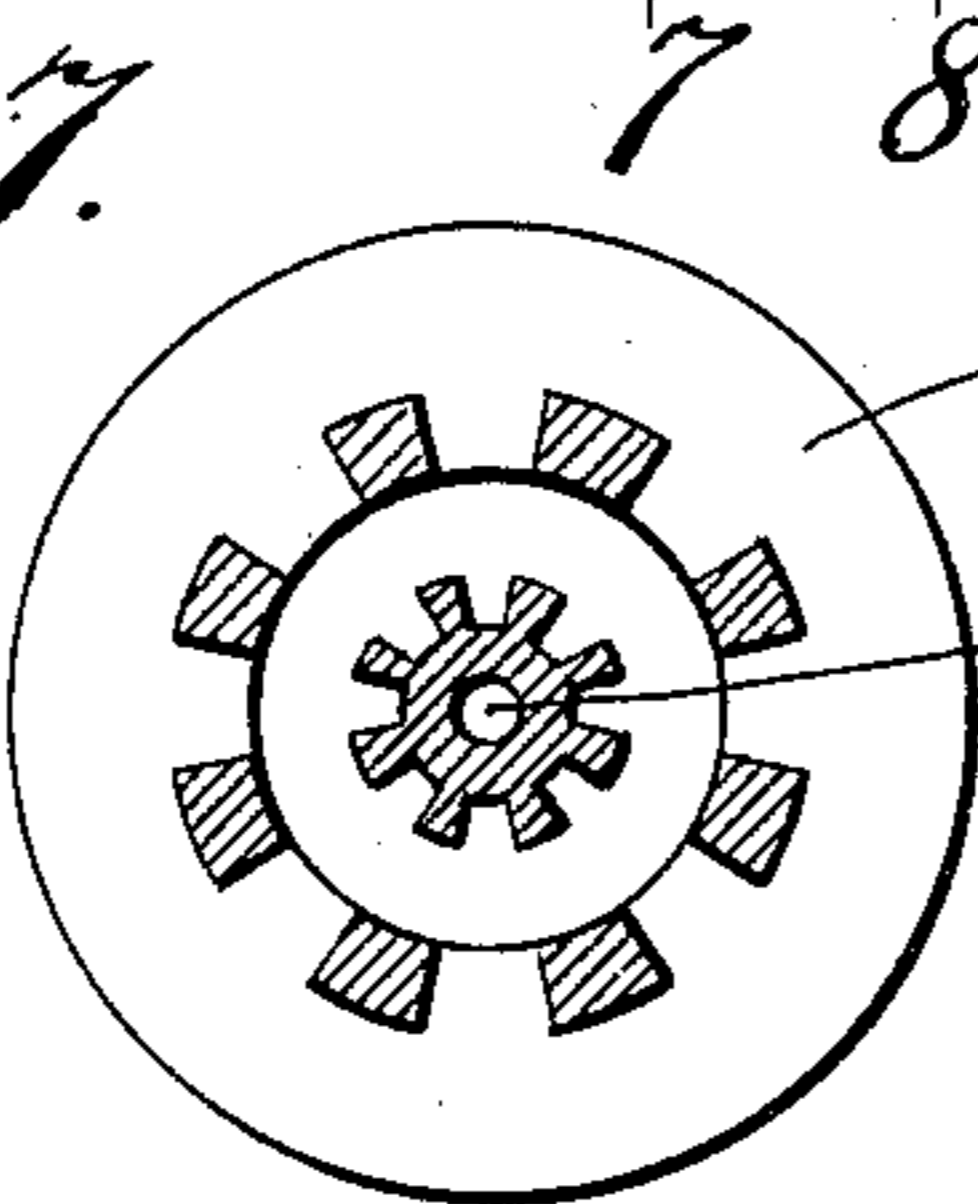
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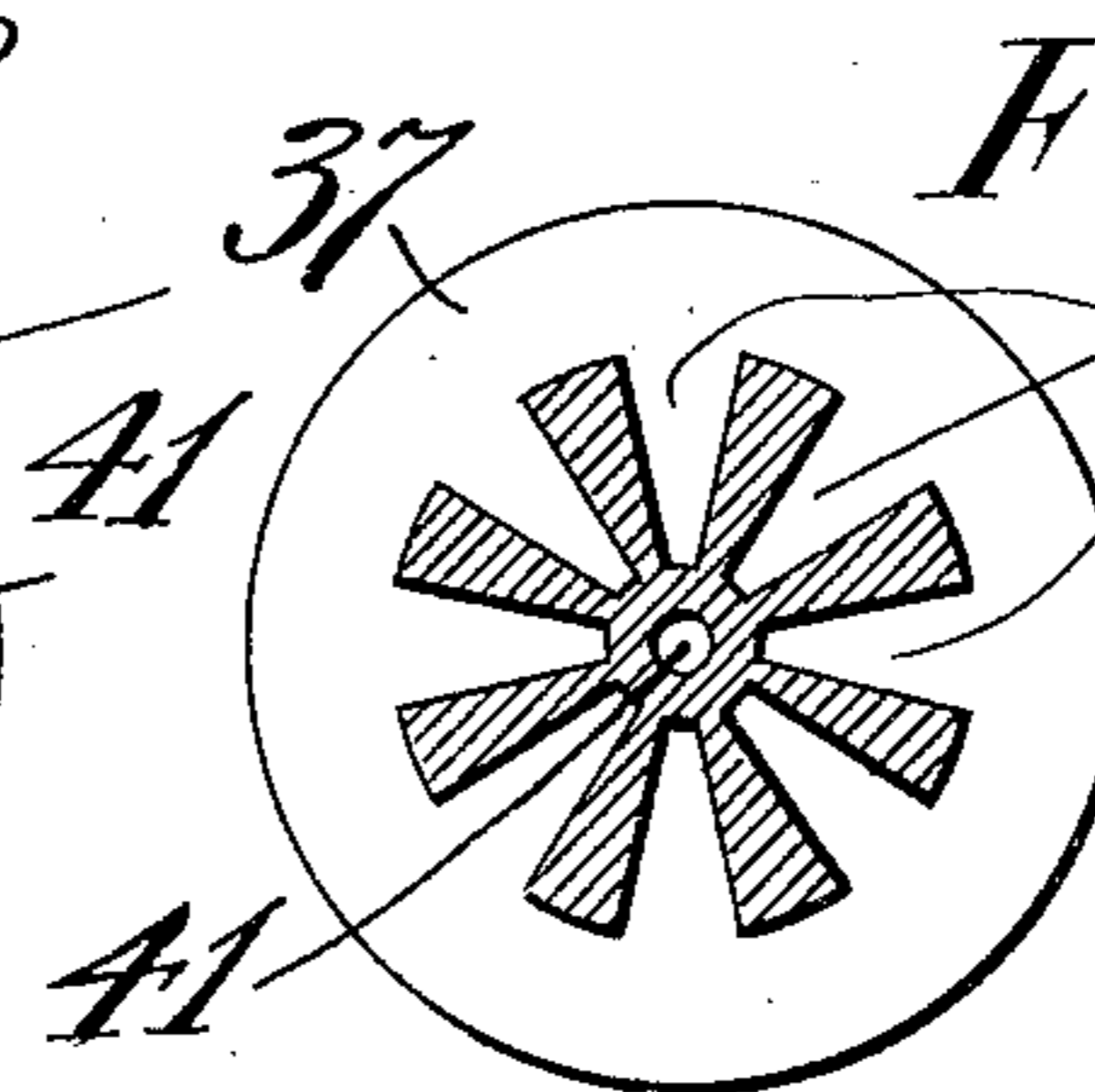
2 SHEETS—SHEET 2.



*Fig. 7.*



*Fig. 8.*



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# UNITED STATES PATENT OFFICE.

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## WHIP-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 770,813, dated September 27, 1904.

Application filed April 13, 1903. Serial No. 152,447. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY W. LARSSON, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Whip-Making Machines, of which the following is a full, clear, and exact description.

This invention relates to whip-making machines, and more especially to that class thereof which are employed in joining or binding together sections or strips, a number of which are combined to form a whip, these strips being substantially uniform in cross-section and triangular in form and disposed around a common center—for instance, such as may be produced in the machine illustrated in the Letters Patent of the United States granted to me March 4, 1902, Nos. 694,868 and 694,869.

My invention has for one of its objects to provide an improved mechanism whereby twine or a similar article may be firmly and tightly wound around the whip-sections.

My invention has, furthermore, for its object to provide the combination, with a twine-carrier, of tensioning devices for the thread or twine, such tensioning devices comprising one or more members whereby the passage of the twine therethrough may be frictioned in the required manner.

My invention has, furthermore, for its object the provision of two or more twine-carriers mounted for rotative movement in opposite directions, while the object to be wound may be disposed in alinement with the axis of rotation of the twine-carriers and may be maintained against rotation, although it may be moved endwise through the machine during the operation of winding.

A further object of my invention may be carried out in the improved construction of a support and guide whereby the several whip sections or strips which may have been glued at their meeting faces may be positioned relatively to each other and properly assembled during their passage through the twine carriers and winders.

The invention consists in the constructions, arrangements, and combinations of parts, all

substantially as hereinafter described, and set forth in the claims.

This improved whip-making machine is fully illustrated in the accompanying drawings, in which—

Figure 1 represents an end view of my improved machine. Fig. 2 illustrates a vertical section on line 2 2 of Fig. 3. Fig. 3 is a central longitudinal section of the machine. Figs. 4 to 8, inclusive, illustrate in detail the construction of my improved blank holder and guide, namely: Fig. 4 is a central longitudinal section thereof, one strip of ratan being shown in position therein. Fig. 5 is an end view looking from the left of Fig. 4. Fig. 6 is a cross-section on line 6 6 of Fig. 4. Fig. 7 is a section on line 7 7 of Fig. 4. Fig. 8 is a section on line 8 8 of Fig. 4.

As has above been stated, a machine forming the subject-matter of my present invention is especially adapted for firmly binding or joining together strips or sections, a number of which are combined to form a whip, and while in ordinary cases it may be sufficient to use a single thread for performing this function I preferably employ a plurality of threads passing around the object in opposite directions, so as to neutralize and avoid all tendency of rotation on the part of the whip or other article to be wound and held by the winding-string. Furthermore, it should be stated at this time that it is immaterial in carrying my invention into practice how many sets of such twine-carriers are used, the machine shown in the accompanying drawings having two of such sets, each set comprising a pair of twine-carrying pockets, so that the blank is wound by four individual strands, two of which are wound about the blank in one direction, while the other two are wound in the opposite direction, crossing the first set of strands. Likewise it is immaterial to the proper operation of my machine whether the blank-supporting member is stationary, as the same might be mounted for rotation relative to the twine-carrier, or the blank-holder and the twine-carrier may be moved in opposite directions, as will be readily understood.

In the accompanying drawings, in which

similar characters denote similar parts, 10 denotes a bed-plate having mounted thereon standards 11 and 12, which constitute journals for the twine-carriers and each of which  
 5 is provided with a central aperture 13, through which the blank may be drawn during the process of being wound.

Mounted for rotation on the standards 11 and 12 are twine-carriers 14 and 15, respectively, the outer surfaces of which are made  
 10 cylindrical in form, as shown at 16, and provided with flanges 17 to constitute pulleys adapted for the reception of belts, whereby said twine-carriers 14 and 15 are preferably  
 15 rotated in opposite directions.

Inasmuch as the twine-carriers 14 and 15 are substantially alike in construction the following description of one will apply to both: The twine-carrier is provided in the present  
 20 instance with a pair of twine-receiving pockets 18, normally closed by covers 19, which may be secured in any convenient manner, but are arranged to be removed for placing a ball, cone, spool, or bobbin of twine or thread  
 25 in said pocket 18. The plate 19 has an aperture 20, through which the thread passes toward the outside of the carrier and is then conducted along the outer face of the cover 19 and between the ear 21 and a tensioning  
 30 device 22, consisting, substantially, of a resilient blade, the other end of which rests on an ear 23, also forming a part of the cover 19, while a screw, such as 24, may be employed to impart the required amount of friction on the  
 35 thread or twine T. The ear 21 has a perforation 25, through which the thread T is carried rearwardly, and then passes around a second tensioning device, shown herein as a stationary cylindrical drum 26, having a heli-  
 40 cal convolution or groove around which the thread is carried, it being evident, of course, that the friction of the twine on the drum may be varied according to the number of turns which the same has around said drum, while  
 45 the pressure of the blade-spring 22 may be changed to vary the friction of the thread thereon. The drum 26 is in the present instance attached to a bracket 27, which in turn is secured to the face of the twine-carrier,  
 50 which is cut away, as at 28, to permit the free passage for the thread toward said drum.

Referring more especially to Fig. 2, it will be seen that the twine-carrier is provided with a groove 29, formed in the face 30, which con-  
 55 stitutes one of the meeting-faces of the carriers, as shown in Fig. 3. The groove 29 constitutes a channel for the twine from the drum 26 toward the center of the carrier and is disposed tangentially to the blank, so that the  
 60 thread may be wound on the blank without making any sharp turns. In order to secure the thread T against leaving the groove 29, a plate 31 may be secured to the carrier in such a manner that the outer surface of said plate  
 65 may be flush with the face 30, above referred

to, and therefore avoid interference with the rotation of the carriers in opposite directions, and since the carrier is provided with a pair of such grooves disposed substantially diamet-  
 70 rically opposite each other it is evident that the twine or threads passing through said grooves will be wound around the blank in the same direction, it being also understood, of course, that the companion carrier will  
 75 wind the twine around the blank in the opposite direction. The blank support or guide for the sections of ratan which, when assembled and glued together, make a whip-stock is an independent device removably support-  
 80 ed in the carrier and herein designated by 35, and its construction is clearly shown in Figs. 4 to 8, inclusive. Here it will be seen that the support or guide is provided with a plu-  
 85 rality of radially-disposed grooves 36, formed in the central core of the support, which at its ends is provided with members 37 and 38, respectively. The grooves 36 are substan-  
 90 tially V shape to conform to the cross-section of the ratan or other whip-forming strips to be fed therethrough, these triangular sections resting with their apexes in the bottom of  
 95 said grooves and being seated therein by means of springs 39, secured in the head 38 in any convenient manner. The blank guide or support has its axis in alinement with the  
 100 axes of the twine-carriers and remains stationary, while the carriers themselves are rotated. The blank-support may be held on the carrier-supports 11 and 12—as, for instance, by  
 105 pins 40 in screw-threaded engagement with said supports, three of such pins being employed, as shown in Fig. 1, and disposed equi-  
 110 distant from the center of the carriers. If it should be desired to insert a core or center of rawhide or similar material in connection with  
 115 the whip-sections and coincident with the axial line thereof, the same may be passed with the sector-sections through a central longitudinal aperture 41, provided therefor in the  
 120 blank-support.

The operation of my improved machine is as follows: The blank-support 35 is supplied with a plurality of glued sector-shaped whip  
 125 sections or strips passing beneath the springs 39 and seated thereby in the grooves or channels 36, whereupon the support and guide is placed between the pins 40 in the manner  
 130 shown in Fig. 1, all of the strips being then pushed forward through the central aperture 13 and the rotary motions are im-  
 135 parted to the twine-carriers 14 and 15 in opposite directions. The sections may be drawn forward by hand at the required speed, so as to wind more or less twine around the same, it being evident, of course, that the slower  
 140 the blank is fed forward the more thread will be deposited thereon, and vice versa. After the blank has been wound from end to end the support 35 may be removed from its position and refilled with another set of strips,

when the same process will be gone through as before. Other forms of supports and guides to correspond in internal conformation with sections to be assembled and wound other than those cross-sectionally triangular may, if desired, be used in conjunction with this winder.

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

1. The combination with a twine-carrier having a twine-channel disposed tangentially to the blank to be wound, a twine-tensioning device comprising a stationary drum and means for varying the friction of the twine on said drum, of a blank-support and means for rotating one of said members relatively to the other.

2. The combination with a twine-carrier having a twine-channel disposed tangentially to the blank to be wound, a twine-tensioning device comprising a stationary drum having grooves, and the resilient blade for varying the friction of the twine on the drum, of a blank-support and means for rotating one of said members relatively to the other.

3. The combination with a twine-carrier and a twine-tensioning device, of a removable blank-support having its axis in alignment with the axis of the twine-carrier, and means for rotating one of said members relatively to the other.

4. The combination with a twine-carrier having a plurality of twine-receiving pockets, and independently-operable twine-tensioning devices, of a removable blank-support and means for rotating one of said members relatively to the other.

5. The combination with a rotatable twine-carrier and a removable blank-support having its axis in alignment with the axis of the twine-carrier, of a carrier-support and means for holding the blank-support thereon and for centering the same relatively to the carrier-axis.

6. The combination with a pair of twine-carriers for winding the blank in opposite directions and each having an axial aperture for the passage of a blank, and a blank-support cooperative therewith, of a carrier-support and means for removably holding the blank-support thereon and for centering the same relatively to the carrier-axis.

7. A blank-support having a plurality of grooves for guiding the blank-strips and means for seating the blank-strips in said grooves.

8. A blank-support having a plurality of radially-disposed grooves for the reception of blank-strips, and means for seating and positioning said strips relatively to each other.

9. A blank-support having a plurality of radially-disposed grooves for guiding the blank-strips, and springs for seating said blank-strips in said grooves.

10. A blank-support comprising a plurality of radially-disposed grooves for guiding the blank-strips, and having a central longitudinal channel for a core and means for seating the blank-strips in said grooves.

Signed by me at Springfield, Massachusetts, in presence of two subscribing witnesses.

HENRY W. LARSSON.

Witnesses:

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A. V. LEAHY.