

No. 658,592.

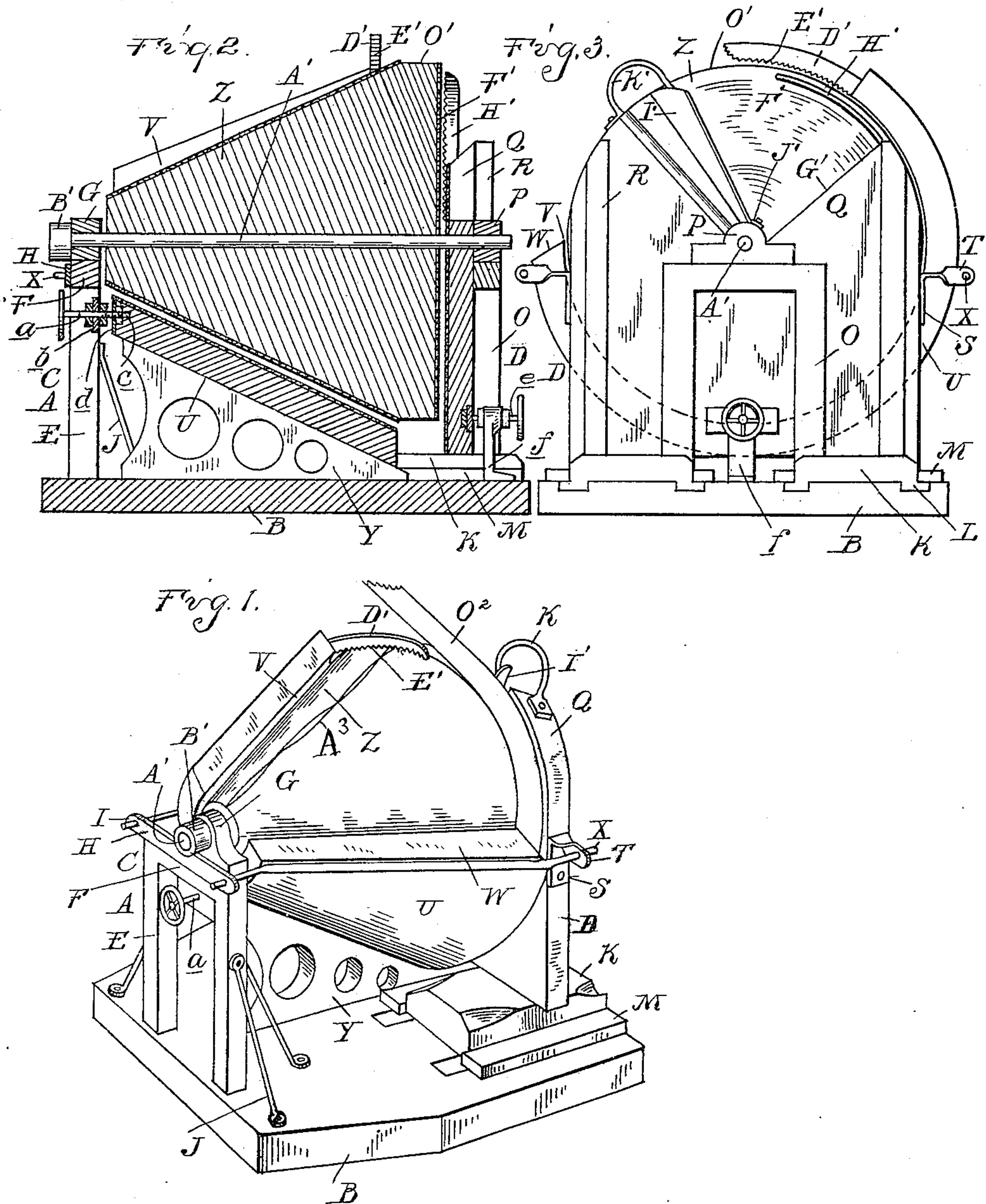
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G. P. & H. J. SCHLEMMER.

TWISTING MACHINE.

(Application filed Dec. 16, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

GEORGE P. SCHLEMMER AND HENRY J. SCHLEMMER, OF ANN ARBOR,
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TWISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 658,592, dated September 25, 1900.

Application filed December 16, 1899. Serial No. 740,515. (No model.)

To all whom it may concern:

Be it known that we, GEORGE P. SCHLEMMER and HENRY J. SCHLEMMER, citizens of the United States, residing at Ann Arbor, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Twisting-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to twisting-machines, and has particular reference to a device of this character designed for twisting strips of fabric, such as carpet, into rope-shaped strands adapted to be subsequently woven into rugs of various patterns.

Our invention therefore consists in the novel type of machine of the kind referred to and the peculiar construction, arrangement, and combination of the various parts thereof, all as more fully hereinafter described, and shown in the drawings, in which—

Figure 1 is a perspective view of a twisting-machine embodying our invention. Fig. 2 is a vertical central section through the machine. Fig. 3 is a front view thereof.

In the drawings thus briefly described the reference-letter A designates the supporting mechanism, consisting, essentially, of a base-plate B, an upright C at one end of said plate or base, and a movable upright D at the opposite base end.

In construction the upright C comprises a vertical supporting-frame consisting of upright bars E and a cross-bar F, upon which is arranged, at the center thereof, a journal-bearing G. The cross-bar is also provided with a metal bar H, having projecting and apertured ends I. The support thus described is secured to the base and held from movement thereon by means of suitable brace-rods J. The movable upright referred to comprises in its construction two sliding plates K, each provided with laterally-extending flanges L, which are adapted to slidably engage within guides M, permitting the slides to be reciprocated upon the base. Mounted upon these slide-plates is the supporting-frame O, similar in construction to the one before referred to and having arranged upon its top a similar journal-bearing P.

Q designates a plate secured to the inner portion of the frame O and to upright posts R, mounted upon the slides K. S represents bracket-arms secured, preferably, to each side of the plate Q, which arms terminate in laterally-extending apertured ears T.

The reference-letter U designates a conical housing, the upper portion or top of which is cut away to form a radial feed-opening V. This housing is provided on each side of said opening with a supporting-bar W, which projects the entire length of the housing and terminates at its ends in journals or trunnions X. The journals are adapted to be engaged with in the apertured ends I and the ears T, whereby the housing is suitably mounted upon the support in such a manner as to be readily detached therefrom or adjusted in the manner hereinafter set forth. In order that too great a strain will not be brought upon the journals X, we may, and preferably do, employ an inclined support Y, which we arrange upon the base-plate beneath and in contact with the housing, as plainly shown in Fig. 1.

Z designates the conical member of our machine, said member being, as stated, substantially in the form of a cone and having a shaft A' extending centrally therethrough. The cone thus described is located within the conical housing, and the shaft A' is journaled within the journal-bearing upon the upright.

B' designates a nut upon the rear end of the shaft, which bears against the rear bearing, preventing forward movement of the cone.

As a convenient manner of applying motion to the cone, which constitutes the movable member of our mechanism, the portion of said cone immediately adjacent to the base is turned down to form a pulley-surface O', and over this portion of the cone may be arranged a suitable belt O² for the purpose of rotating the cone.

In order that a satisfactory working surface may be had for the exterior of the cone and also for the interior of the housing, we roughen both of these surfaces in any suitable manner, preferably by covering the same with some suitable material to give the desired frictional surface. Motion being imparted to

the cone in the manner set forth, a strip of material is inserted between the cone-surface and the housing-surface at one side of the opening in said housing and is carried by the rotating surface to the opposite side of the openings and discharged therefrom. It will readily be seen that on account of the differences in velocities of the movable surface at different points from its axis of rotation the desired twisting effect will be produced and the strip of material formed into the desired rope shape for future weaving. In order that a still greater twisting effect will be produced, we have arranged upon the housing a twister-arm D', which is secured at one side of the opening in said housing and extends within the former in close proximity to the cone. The under surface of the twister is serrated or roughened, as at E'. The operator inserts one end of the strip A³ between the free end of the twister-arm and the cone and holds the other end of the strip until the latter is drawn between the opposing surfaces. Thus an additional twist is given to the strand before the regular operation of twisting is effected.

It will be apparent from the description of the mechanism that the length of the strip to be twisted is necessarily determined by the length of the feed-opening. The machine shown in the drawings is of small size in order that the same may be conveniently illustrated, and the strips that could be twisted by the machine are therefore comparatively short. It will be obvious, however, that the mechanism can be so constructed that the feed-opening may be lengthened, so that a strip of any desired length may be twisted.

In order to obtain a loose or a tight twist of the strip, as desired, I have provided means for shifting or adjusting the housing to or away from the cone, so as to bring the opposing surfaces nearer to or farther from each other to obtain the results desired. This shifting mechanism consists, essentially, of a headed bolt a, having its free end threaded, which is carried by and has a swivel connection with a supporting-plate b, attached to the stationary upright. The end of the bolt is adapted to extend within an aperture c, formed within the housing, and through a plate d, fixed thereto, the plate having a threaded aperture formed therein engaging the bolt.

The plate Q before referred to, carried upon the movable support, extends upwardly and parallel with the base F' of the cone and is provided with an opening G' somewhat similar to the radial opening V, as plainly shown in Fig. 3. This plate may be moved to or from the cone-base by means of a shifting or adjusting device of somewhat similar construction to that already described, a threaded bolt e being employed, which is swiveled in a standard f, screwed upon the base. The end of this bolt has a threaded engagement with the upright plate, so that upon the movement of the bolt-head the plate will be shifted in the manner desired. As the re-

sult of this construction we are enabled while the long strips are being twisted to twist the short strips of the fabric by inserting the same between the opposing surface of the cone-base and the vertical plate.

The reference-letter H' represents a twisting-arm similar to the one before described, which is secured to the vertical plate Q at one side of the opening, and I' is a deflector-plate secured at its lower end by means of a strap J' to the bearing P and at its upper end to the plate Q by means of a curved or bent rod K'.

It will be obvious from the foregoing description that our invention would be embodied in any mechanism wherein two opposing surfaces were employed, arranged in operative relation to each other, one of which is movable relatively to the other and which is caused to travel at different velocities at different distances from its axis of movement to produce the twisting effect desired. Therefore while we have shown and described one type of mechanism which we consider the most practical in use we do not desire to be limited to this type, as various others could be employed without in any manner departing from the spirit of our invention.

What we claim as our invention is—

1. In a twisting-machine, the combination with a support, a movable member mounted upon the support having a twisting-surface thereon fashioned to move at different velocities at different distances from its axis of movement, a second member provided with a complementary twisting-surface adjacent and in operative relation to the movable surface, there being a feed-opening leading to the movable surface, said opening being substantially equal in length to the distance between the points of minimum and maximum velocity on the movable surface, and means for actuating the movable member.

2. In a twisting-machine, the combination of a support, a movable member mounted upon the support having a twisting-surface thereon fashioned to move at different velocities at different distances from its axis of movement, a second member provided with a complementary twisting-surface arranged immediately adjacent and in operative relation to the movable surface and having an opening formed therein leading to said movable surface, said opening being substantially equal in length to the distance between the points of minimum and maximum velocity on the movable surface, means for actuating the movable member, and means for adjusting one of the surfaces to or away from the other surface.

3. In a twisting-machine, the combination of a support, a conical member mounted upon the support for rotary movement, a conical housing for said member having a feed-opening formed therein extending its entire length to permit of the insertion therethrough of the article to be twisted, and means for rotat-

ing the conical member, substantially as described.

4. In a twisting-machine, the combination of a support, a conical member mounted thereon for rotary movement, a conical housing for said member having a feed-opening formed therein extending the entire length of the housing to permit of the insertion between the twisting-surfaces of a strip of material, means for adjusting the conical housing to vary the distance between the surfaces, and means for rotating said conical member, substantially as described.

5. In a twisting-machine, the combination of the support, uprights at each end of the support, bearings upon the uprights, a conical housing detachably mounted within said bearings, said housing having a radial feed-opening arranged therein extending its entire length, a cone-shaped member within the housing journaled in the uprights for rotary movement, and means for rotating the conical member.

6. In a twisting-machine, the combination of a support, a revoluble member mounted upon the support having a surface formed thereon fashioned to move at different velocities at different distances from its axis of rotation, a stationary member provided with a surface arranged in juxtaposition to the movable surface, said stationary member having a feed-opening formed thereon and extending through its surface, a twister-arm carried by the stationary member projecting within the opening, and means for rotating the movable member.

7. In a twisting-machine, the combination of the support, a conical housing thereon having a feed-opening formed therein, a conical

member arranged within the housing, for rotary movement, the base of said member extending to or through the corresponding ends of the housing, a member having a face arranged in juxtaposition to the base of the conical member, and means for rotating said latter member.

8. In a twisting-machine, the combination of the support, a conical housing thereon having a feed-opening formed therein, a conical member arranged within the housing for rotary movement, the base of said member extending to or through the corresponding end of the housing, means for adjusting the conical member within the housing, a stationary member having a slotted face arranged in juxtaposition to the base of the conical member, means for moving said slotted face to or away from the base, and means for rotating the conical member.

9. In a twisting-machine, the combination of the support, a revoluble member mounted upon the support having a surface formed thereon fashioned to move at different velocities at different distances from its axis of rotation, a stationary member provided with a surface arranged in juxtaposition to the movable surface, said stationary member having a feed-opening formed therein extending through its surface, a deflector at one side of said opening, and means for rotating the revoluble member.

In testimony whereof we affix our signatures in presence of two witnesses.

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HENRY J. SCHLEMMER.

Witnesses:

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