

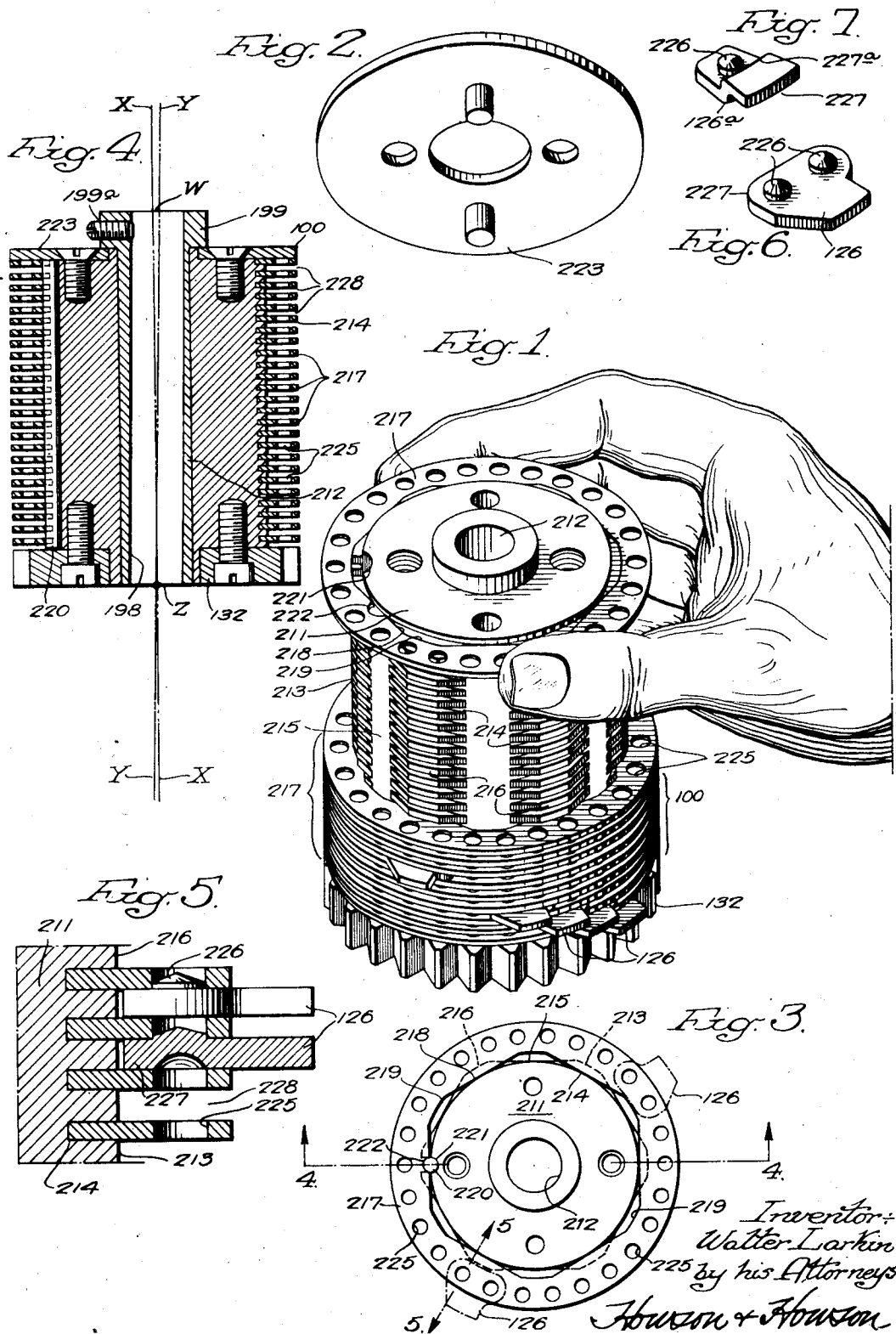
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TRICK WHEEL FOR KNITTING MACHINES

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TRICK WHEEL FOR KNITTING MACHINES

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7 Claims. (Cl. 66—156)

The invention hereinafter disclosed relates to a trick wheel which is adaptable for use in connection with a knitting machine for forming designs of various kinds in and/or on the fabric produced by the machine.

The present application constitutes a division of the applicant's copending application, Serial No. 614,216, filed May 28, 1932.

The construction of the trick wheel forming the subject matter of the present application will be fully disclosed hereinafter, reference being had to the accompanying drawing, of which:

Fig. 1 is a perspective view of the trick wheel in course of assembling;

Fig. 2 is a perspective view of the trick wheel cap plate;

Fig. 3 is a plan view of the trick wheel with the cap plate removed;

Fig. 4 is a sectional elevation of the trick wheel taken on the line 4—4, Fig. 3;

Fig. 5 is an enlarged fragmentary sectional elevation taken on the line 5—5, Fig. 3;

Fig. 6 is a perspective view of one form of trick wheel lug; and

Fig. 7 is a perspective view of another form of trick wheel lug.

The trick wheel 100 is of novel construction, comprising a main hub section 211 having a bore 212 to receive an eccentric portion of a stud as described in the above noted copending application. The hub 211 of the trick wheel is of cylindrical form having a peripheral surface 213 in which is formed a series of grooves 214, the bases of which are of complete circular form while the peripheral surface 213 of the hub is flattened hexagonally, as illustrated at 215, tangent to the bases of the grooves 214, leaving vertical ribs 216 on the outer surface of the hub 211 in which the horizontal grooves 214 are present.

Arranged to fit in the grooves 214 are rings 217, the inner surface of each of which is of hexagonal form corresponding with the hexagonal outer surface of the hub 211, the said inner surface of the ring having flat portions 218 similar to the flattened portions 215 of the hub 211 and between which are segmental portions 219 corresponding to the outer segmental surface of the vertical ribs 216 of the hub 211.

In assembling the rings 217 on the hub 211 the inner edge of each ring is registered with the correspondingly shaped portions of the outer surface of the hub 211 so that the ring can be dropped on to the hub for movement axially thereof to an elevation coincident with the groove 214 in which the ring is to be positioned, whereupon

the ring is turned about the hub 211 until the flat portions 218 on the inner edge of the ring enter the grooves 214 in the vertical ribs 216 of the outer face of the hub 211.

After the rings have been assembled on the hub in this manner, all the rings are locked against further rotation with respect to the hub 211 by a key 220 entering a groove 221 formed in one of the vertical ribs 216 and a notch 222 formed in each of the rings 217. The key 220 is held against longitudinal displacement by the ratchet wheel 132, which is secured to a shouldered portion of the hub 211 at one end thereof, and by a cap plate 223 which is secured to a correspondingly shouldered portion of the hub at the opposite end thereof.

Each of the rings 217 is provided with a series of holes 225 adapted to receive tits 226 pressed up from the body 227 of each of the trick wheel lugs 126 when the body portion 227 of the lug is forced into one of the grooves 228 formed between each pair of superimposed rings 217, the rings being composed of metal sufficiently resilient to permit the passage of the tits 226 therebetween when inserting and removing the lugs 126, and to snap back into position in contact with the body 227 of the lug when the tits 226 are respectively brought into alignment with a pair of the openings 225 in one of the rings 217. In this way the lugs 126 are made readily interchangeable for setting up any desired pattern.

In order to provide a continuous lug on the trick wheel for continuously pressing any one element for a full revolution or any desired segmental portion thereof of the trick wheel 100, lugs of the character shown in Fig. 7 may be employed, which are relatively narrow, being confined in width to planes extending radially from the center of the hub through two adjacent holes 225 in the rings 217. The narrow lugs 126a are each provided with one tit 226 and are held against rotation around the tit by a shoulder 227a arranged to bear against the peripheral edge of one of the rings 217 between which the lugs 126a are placed, whereby the peripheral edge of any desired number of the lugs 126a placed side by side in a single groove 228 of the trick wheel will form a continuous bearing surface for the element which is to be continuously pressed.

For purposes of adjustability, in the bore 212 of the trick wheel is mounted a bearing sleeve 199 about which the trick wheel is adapted to rotate. The bearing sleeve 199 is bored, as illustrated at 198, at an angle to the axis X—X of the trick wheel 100, the axis Y—Y of the bore 198

and the axis X—X of the trick wheel 100 coinciding at the lower end of the trick wheel as illustrated at Z while the axes X—X and Y—Y are spaced apart a predetermined distance as illustrated at W at the upper end of the trick wheel.

The bearing sleeve 199 is adapted to be secured to an eccentric portion of a vertically extending stud which is adapted to be secured in predetermined relation to a series of horizontally disposed elements with which the lugs 126 of the trick wheel are adapted to cooperate. To effect the best cooperative relation between the lugs and the elements actuated thereby the stud is rotated to bring the lowest lugs 126 into predetermined relation to the lowermost of the series of elements actuated by the lugs. The stud is then secured in position and the bearing sleeve 199 is then rotated about the eccentric portion of the lug until the uppermost lugs 126 are in substantially the same relation to the uppermost elements of the series actuated by said lugs as the relative position attained by the lowermost lugs with respect to the lowermost elements of the series, whereupon the sleeve 199 is locked to the stud by the screw 199a.

I claim:

1. A trick wheel comprising a hub, a series of relatively resilient annular ribs spaced longitudinally of said hub to provide a series of substantially parallel grooves in the periphery of said wheel, and a series of lugs interchangeably secured in said grooves by the resiliency of said ribs.

2. A trick wheel comprising a hub, a series of relatively resilient rings spaced longitudinally of the hub to provide a series of circumferential substantially parallel grooves in the periphery of the wheel, a series of lugs interchangeably mounted in said grooves between adjacent rings respectively, and a tit on each lug arranged to enter an opening in one of said rings to secure the lug in the ring.

3. A trick wheel comprising a hub, a series of relatively resilient rings spaced longitudinally of the hub to provide a series of circumferential substantially parallel grooves in the periphery of the wheel, a series of lugs interchangeably mounted in said grooves between adjacent rings respectively, a tit on each lug arranged to enter an opening in one of said rings to secure the lug in the ring, and means for securing the lug against rotation about the tit.

4. A trick wheel comprising a hub, a series of relatively resilient rings spaced longitudinally of the hub to provide a series of circumferential

substantially parallel grooves in the periphery of the wheel, a series of lugs interchangeably mounted in said grooves between adjacent rings respectively, a tit on each lug arranged to enter an opening in one of said rings to secure the lug in the ring, and a second tit on each lug arranged to enter an adjacent opening in the ring to secure the lug against movement in the wheel.

5. A trick wheel comprising a hub, a series of relatively resilient rings spaced longitudinally of the hub to provide a series of circumferential substantially parallel grooves in the periphery of the wheel, a series of lugs interchangeably mounted in said grooves between adjacent rings respectively, a tit on each lug arranged to enter an opening in one of said rings to secure the lug in the ring, and a shoulder on the lug arranged to engage the peripheral edge of the ring to secure the lug against relative movement to the wheel.

6. A trick wheel comprising a hub having on its periphery a plurality of circumferentially spaced ribs extending substantially parallel to the axis of the wheel and provided with longitudinally spaced grooves extending transversely of the wheel, a series of relatively resilient rings having center openings respectively corresponding in shape to the ribbed periphery of the hub and arranged to be slipped over the hub into alignment with corresponding grooves in said ribs and then rotated relative to the hub to be seated in said grooves, and means for locking the rings in position on said hub.

7. A trick wheel comprising a hub having on its periphery a plurality of circumferentially spaced ribs extending substantially parallel to the axis of the wheel and provided with longitudinally spaced grooves extending transversely of the wheel, a series of relatively resilient rings having center openings respectively corresponding in shape to the ribbed periphery of the hub and arranged to be slipped over the hub into alignment with corresponding grooves in said ribs and then rotated relative to the hub to be seated in said grooves, means for locking the rings in position on said hub to provide circumferentially extending longitudinally spaced grooves in the wheel, each ring being provided with a series of circumferentially spaced openings, lugs arranged to be inserted in said grooves, and tits on the lugs arranged to enter the openings in the rings to secure the lugs in place in the wheel.

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