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R. L. CARROLL
MOUNTING HEAD FOR FIRNS
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3,093,331

FIG. 1

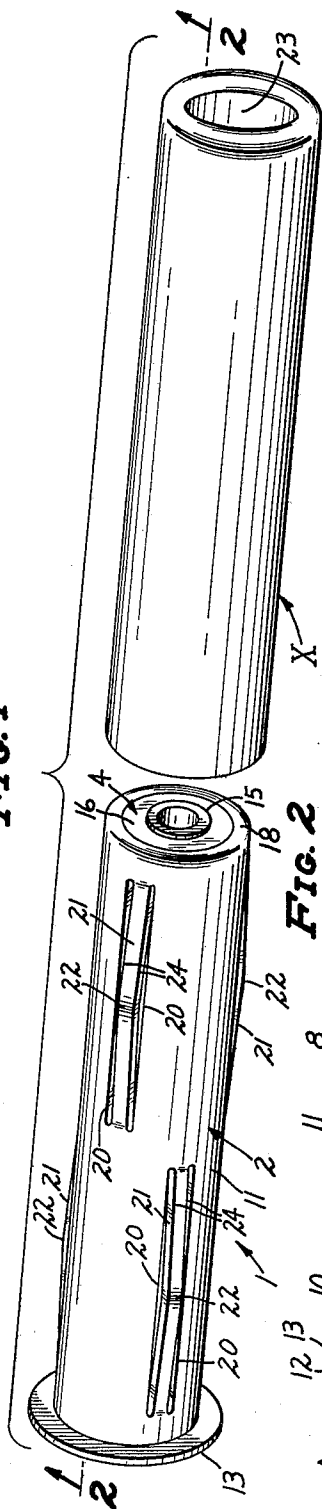


FIG. 2

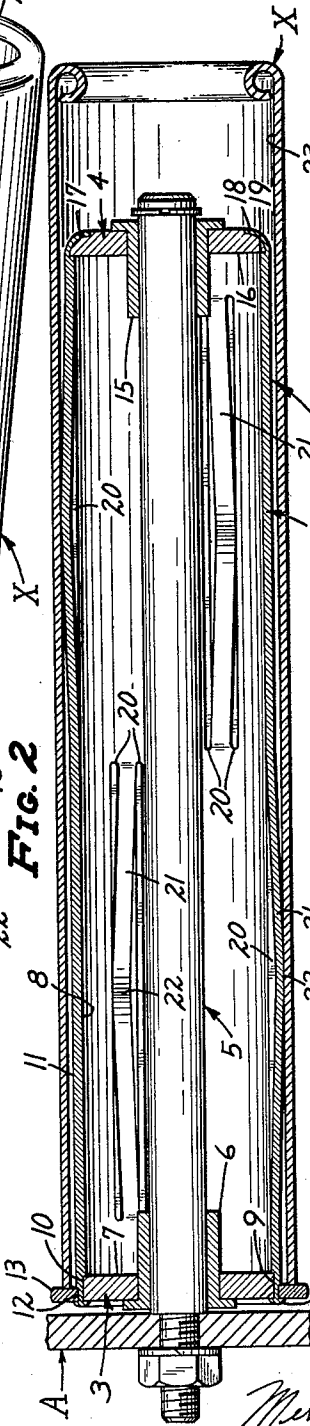
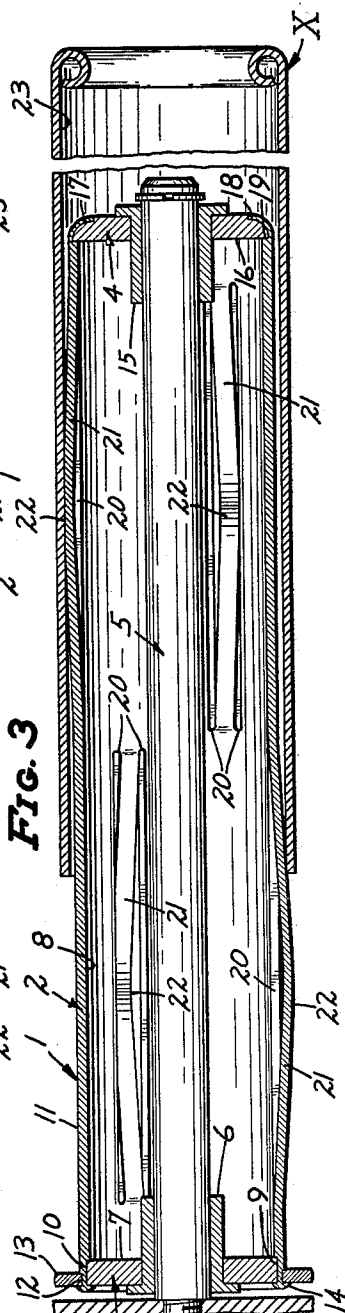


FIG. 3



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1

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MOUNTING HEAD FOR PIRNS

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1 Claim. (Cl. 242—46.6)

My invention relates generally to improvements in mounting heads or creels for tubular winding and packaging spools for yarn, such as fiberglass yarn, and known in the trade as pirns.

Pirns are usually of the throw-away type and are formed from inexpensive paper stock and the like. For the purpose of winding and packaging of yarn thereon, pirns are removably slidably received over a creel or spindle adapter. Obviously relative rotation of the pinn with respect to the creel upon which it is mounted must be eliminated during winding movements. Various mechanical means have heretofore been utilized for this purpose.

The primary object of my invention is the provision of a novel mounting head or creel for pirns which is provided with novel means for exerting frictional engagement between the creel and the interior surface of the pinn for the elimination of relative rotation therebetween during winding of fiberglass yarn or the like on said pinn.

A further object of my invention is the provision of a mounting head or creel which exerts a desired degree of frictional engagement or bite upon the interior surface of a pinn both circumferentially and axially thereof.

A further object of my invention is the provision of a device of the class described which is extremely inexpensive to produce, which is highly efficient in its action and performance, which is relatively foolproof, and which is rugged and durable.

The above and still further objects of my invention will become apparent from the following detailed specification, appended claim, and attached drawings.

Referring to the drawings wherein like characters indicate like parts throughout the several views:

FIG. 1 is an exploded view in perspective of my novel mounting head or creel together with a cooperating pinn;

FIG. 2 is a view in section taken on the line 2—2 of FIG. 1 with the parts in their assembled position; and

FIG. 3 is a view corresponding to FIG. 2 but showing a different position of some of the parts, some parts being broken away.

Referring with greater particularity to the drawings, my novel pinn mounting head or creel is identified in its entirety by the numeral 1 and includes an elongated cylindrical tubular body 2 which is formed from flexible resilient metal, such as aluminum, the opposite inner and outer ends of which are provided with annular spindle-receiving members 3 and 4 respectively. The spindle assembly 5 is of the type frequently found on yarn winding machines A, only a fragment of which is shown, and forms no part of the instant invention. The inner spindle-receiving member 3 includes an elongated tubular bearing 6 over which is non-rotatably received an annular end plate 7. The inner surface 8 of the tubular body 2 is provided with a circumferentially extended recess 9 for the snug reception of the outer peripheral edge

2

10 of the end plate 7. The outer peripheral surface 11 of the tubular body 2 is provided with a circumferentially extended recess 12 for the reception of a radially outwardly projecting annular stop flange 13. As shown, the reduced inner end of the body 2 extends between the annular end plate 7 and the stop flange 13 and is flattened thereagainst by spinning or the like, as indicated at 14.

The spindle-receiving member 4 on the outer end of the body 2 also includes an elongated annular spindle-receiving bearing 15 and an annular end plate element 16 non-rotatably received thereon. At its outer peripheral edge the end plate member 16 is formed to define a circumferentially extended endless, cross-sectionally angular recess 17 for the reception of the reduced extreme outer end 18 of the body 2. The shoulder 19 formed by the reducing of the outer end 18 of the body 2 limits axially inward movement of the end plate 16 and bearing 15 carried thereby.

The creel or pinn 1 is adapted to telescopically receive thereover the pinn X. As shown, the pinn X is conventionally somewhat longer than the creel or mounting head 1, the inner end thereof abutting against the stop flange 13 to properly position same. For the purpose of imparting the proper degree of frictional engagement between the creel 1 and the pinn X, to prevent relative rotation of one with respect to the other during winding and packaging of fiberglass yarn or the like upon the pinn X, the tubular body 2 is formed to provide circumferentially spaced pairs of axially extended slots 20 which define opposite side edges of axially extended circumferentially spaced ribs 21. As shown particularly in FIG. 1, the ribs 21 are outwardly bowed as at 22 intermediate their ends, alternate ones of the ribs 21 being offset with respect to each other in a direction axially of said body 2. Preferably and as shown, the ribs 21 are arranged in circumferentially extended rows, the ribs 21 of one row being staggered with respect to the ribs of an adjacent row, and the ribs of one row being axially spaced with respect to the ribs 21 of the other row.

With the arrangement and disposition of ribs 21 immediately above described, a pinn X may be slidably placed over the outer end of the creel 1 with a minimum of frictional engagement being exerted by the ribs 21 on the interior surface 23 of the pinn X. However, after reception of the pinn X upon the creel 1, with the inner end of the pinn X in engagement with the stop flange 13, the relatively sharp edges 24 of the bowed ribs 21 exert sufficient frictional engagement or bite upon the interior surface 23 of the pinn X, at both circumferentially and axially spaced points to assure that there is no relative rotation between the mounting head or creel 1 and the pinn X during winding and packaging of yarn thereon.

My invention has been thoroughly tested and found to be completely satisfactory for the accomplishment of the above objects, and while I have shown a commercial adaptation thereof, I wish it to be specifically understood that my invention may be modified without departure from the scope and spirit of the appended claims.

What I claim is:

60 Mounting head for pirns comprising an elongated cylindrical metal body having a straight tubular wall structure from end to end thereof and of substantially uniform diameter throughout the length thereof, bearing carrying

3

end plates mounted within the ends of said tubular wall structure and rigidly supporting bearings at opposite ends thereof, a plural series of circumferentially arranged slots extending longitudinally from points adjacent the end portions of said tubular wall structure, each series including widely spaced pairs of slots, the slots of each series being misaligned with respect to the slots of each other series, said pairs of slots of each series terminating at widely spaced circumferential points about the center of said tubular wall structure, whereby to provide relatively wide unslotted transversely curved wall portions extending uninterruptedly from end to end of said structure, and outwardly bowed relatively narrow wall portions defined by each pair of slots providing resilient rib

4

portions disposed between said uninterrupted wall portions, and said rib portions having sharp edges adapted to bite into longitudinally staggered inner wall portions of a pin slidably supported on said tubular wall structure.

References Cited in the file of this patent

UNITED STATES PATENTS

993,377	Hyde	May 30, 1911
1,194,249	Smith	Aug. 8, 1916
1,631,835	Schubert	June 7, 1927

FOREIGN PATENTS

22,120	Great Britain	Nov. 6, 1899
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