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TRAVERSE YARN GUIDE

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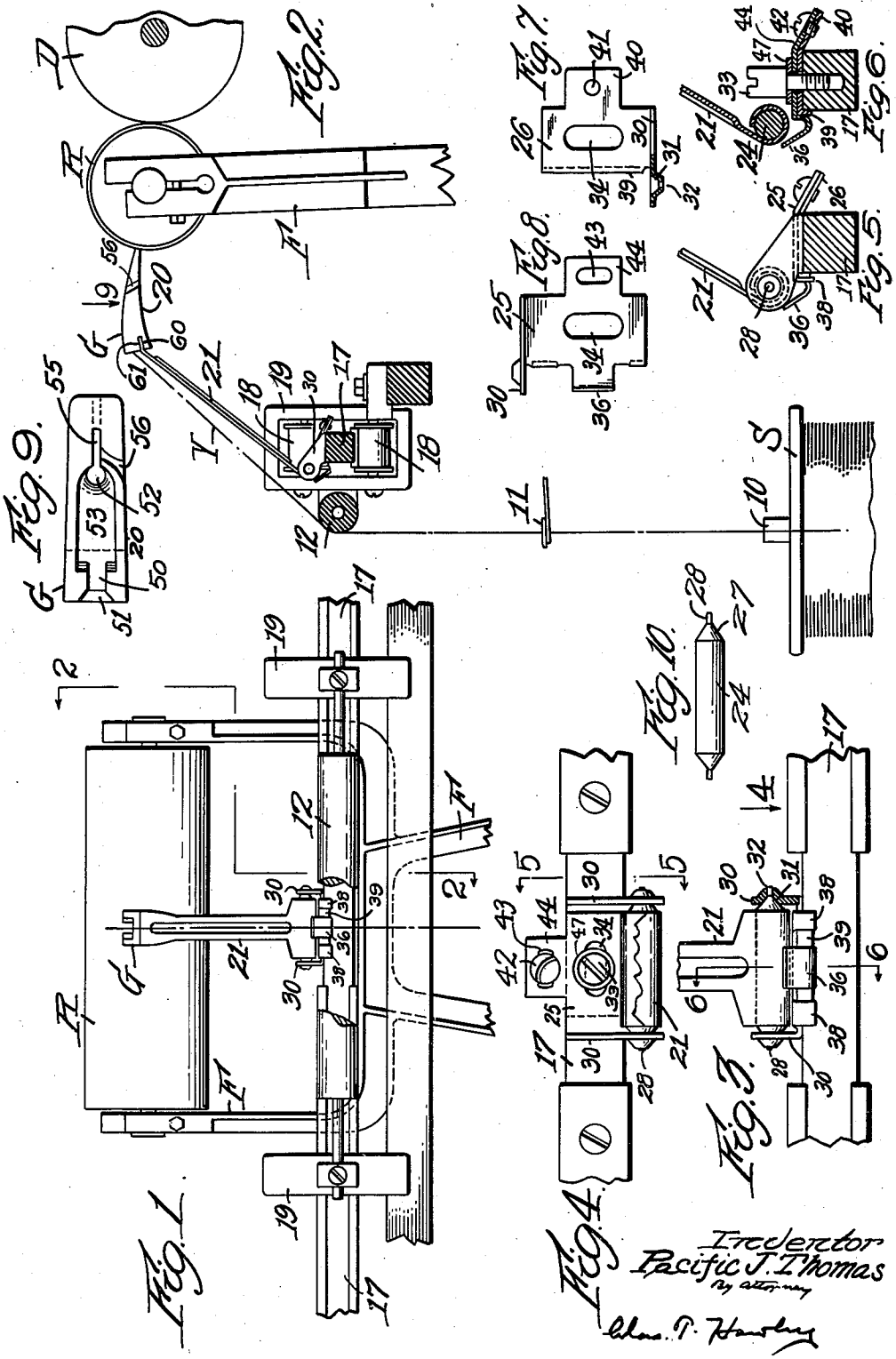

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TRAVERSE YARN GUIDE

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This invention relates to winding machines and more particularly to the devices used in such machines for guiding the yarn to the roll or package and for traversing the yarn axially thereof.

It is the general object of my invention to provide a traverse yarn guide of novel and improved construction, which will be economical to manufacture and reliable in operation.

To the attainment of this object, one important feature of my invention relates to the provision of an improved pivotal mounting for a traverse yarn guide, which may be readily adjusted to take up wear and lost motion and which affords protection against accidental displacement of said guide. My invention also includes an improved and simplified method of securing the porcelain guide member to the free end of the pivoted guide arm.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawing, in which—

Fig. 1 is a front elevation of parts of a winding machine embodying my improvements;

Fig. 2 is a sectional side elevation, partly in section and taken along the line 2—2 in Fig. 1;

Fig. 3 is an enlarged detail front elevation, partly in section;

Fig. 4 is a plan view, looking in the direction of the arrow 4 in Fig. 3;

Fig. 5 is a sectional end elevation, taken along the line 5—5 in Fig. 4;

Fig. 6 is a sectional end elevation, taken along the line 6—6 in Fig. 3;

Figs. 7 and 8 are plan views of two parts of a hinge bracket;

Fig. 9 is a plan view of a porcelain guide member, looking in the direction of the arrow 9 in Fig. 2; and

Fig. 10 is a detail view to be described.

Referring to Figs. 1 and 2, I have shown parts of a winding machine of the "up-twister" type, comprising a take-up roll R, a driving drum D, a swinging frame F, a spool S on a twister spindle 10, a guide-wire 11, and a guide-roll 12 by which the yarn Y is directed to the traverse yarn guide G which delivers the yarn to the take-up roll R and which also traverses the yarn axially thereof to produce a desired helical winding.

The traverse yarn guide is mounted on a traverse rod 17 supported on guide-rolls 18 mounted in fixed bearing members 19. The traverse rod is reciprocated in the usual manner by any suitable actuating mechanism, not shown.

The actuating mechanism thus far described in itself forms no part of my present invention, which relates more particularly to the traverse yarn guide G and to the manner of pivotally supporting the traverse yarn guide G on the traverse rod 17.

The traverse yarn guide G comprises a porcelain guide member 20 mounted at the free end of a guide arm 21, which arm is pivotally connected to the traverse rod 17 by a pivot stud or pintle 24 and a bearing bracket formed in upper and lower parts 25 and 26 (Figs. 7 and 8).

The pivot stud 24 is formed as shown in Fig. 10, with a conical portion 27 at each end and also with a much reduced cylindrical portion 28. The inner end of the guide arm 21 is bent up to receive and firmly grip the pivot stud 24, which may be additionally secured therein by brazing or soldering if so desired.

Each bracket part 25 and 26 is provided with an end flange 30 having a conical recess 31 (Fig. 3) and having a small cylindrical hole 32 concentric with said recess and of such diameter as to receive one of the reduced end portions 28 of the pivot stud 24.

The parts are assembled, as shown particularly in Fig. 6, by placing the upper bracket part 25 over the lower part 26, and by passing a clamping screw 33 through slots 34 in the parts 25 and 26 and then tightening the screw 33 in a tapped hole in the traverse bar 17.

The upper bracket part 25 has an upwardly extending projection 36 on its front side, which projection acts as a stop to limit forward swinging movement of the arm 21. The upper part 25 also has downwardly extending projections 38 which engage a down-turned flange 39 on the front edge of the lower bracket part 26. The flange 39 in turn engages the front edge of the traverse bar 17, so that both bracket parts 25 and 26 will be accurately aligned with the traverse bar 17 and with each other.

The lower part 26 (Fig. 7) has a downwardly inclined projecting portion 40 provided with a tapped hole 41 to receive a clamping screw 42 (Fig. 6) which extends through a slot 43 (Fig. 8) in a similar down-turned projection 44 of the upper plate 25. With this construction, the bearing parts 25 and 26 may be initially assembled with the arm 21 and pivot stud 24 and will be aligned with each other and with the pivot stud by the coaction of the projections 38 and the flange 39. The assembled parts may then be

relatively adjusted axially to snugly fit the conical end portions 27 of the pivot stud, and may be secured in adjusted position by tightening the clamping screw 42.

After the parts are thus adjusted to provide for swinging motion of the arm 21 but eliminating lost motion thereof, the assembled parts may then be placed on the traverse bar 17 and, after adjustment as a unit lengthwise of said bar within the limits of the slots 34, the assembled traverse yarn guide may be secured to the traverse bar by the clamping screw 33, which is preferably provided with a washer 47.

The cylindrical end portions 28 of the pivot stud extend into the small holes in the flanges 30 and prevent accidental displacement of the arm 21, which might occur if conical bearings only were provided.

The porcelain guide member 20 is provided with a guiding slot 50 at one end having an enlarged entrance 51, with a guide-eye 52 at the outer end of a recess 53, and with a delivery slot 55 which in part underlies the delivery end of the guide member 20 and which has connected therewith an inclined threading slot 56 through which the thread is readily inserted.

The porcelain guide member 20 is also slotted at 60 to receive the outer end 61 of the guide-arm 21, which outer end may be cemented or otherwise secured therein. The guide arm 21 and bracket members 25 and 26 may be conveniently formed of stamped sheet metal, and the entire construction is economical to manufacture and reliable in use, particularly as tne spaced conical bearings of the guide arm prevents transverse displacement of the guide member 20 lengthwise of the traverse rod 17 when the traverse rod is reversed at its opposite limits of travel.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. In a winding machine having a traverse rod, in combination, a traverse yarn guide, a bearing bracket secured to said traverse rod and having spaced conical bearing recesses, and a pivot stud on which said yarn guide is mounted and which is provided with conical end portions seated in said spaced conical recesses of said bearing bracket.

2. The combination in a winding machine as set forth in claim 1, in which the bearing bracket is formed in two superposed parts each having an end flange with one of said conical bearing recesses formed therein.

3. The combination in a winding machine as set forth in claim 1, in which the bearing bracket is formed in two superposed parts each having an end flange with one of said conical bearing recesses formed therein, and in which means is provided for relatively adjusting said bracket parts and for securing said parts in adjusted relation.

4. The combination in a winding machine as set forth in claim 1, in which the bearing bracket is formed in two superposed parts each having an end flange with one of said conical bearing recesses formed therein, and in which means is provided for longitudinally aligning the axes of said bearing recesses.

5. The combination in a winding machine as set forth in claim 1, in which the bearing bracket has a small cylindrical hole concentric with each conical recess, and in which the pivot stud has reduced cylindrical end portions seated in said small holes.

6. In a winding machine having a traverse rod, in combination, a traverse yarn guide comprising a guide arm having spaced conical end bearing portions, a bearing bracket having two relatively adjustable parts provided with spaced conical bearing recesses adapted to receive said conical end bearing portions of said guide arm, means to secure said bracket parts with said conical end portions and said bearing recesses in operative engagement, and means to relatively adjust and secure said traverse yarn guide and bearing bracket as a unit on said traverse rod.

7. In a winding machine, a traverse rod, a traverse yarn guide, a guide arm having an elongated and transversely disposed pivot portion, a two-part bracket having spaced bearing portions in which the ends of the pivot portion of said guide arm are rotatably supported, means to relatively adjust said bracket parts to receive the ends of said pivot portion and to secure said bracket parts to each other in effective bearing relation to said ends of said pivot portion, and means to secure said bracket and guide-arm as a unit in longitudinally adjusted position along said traverse rod.

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