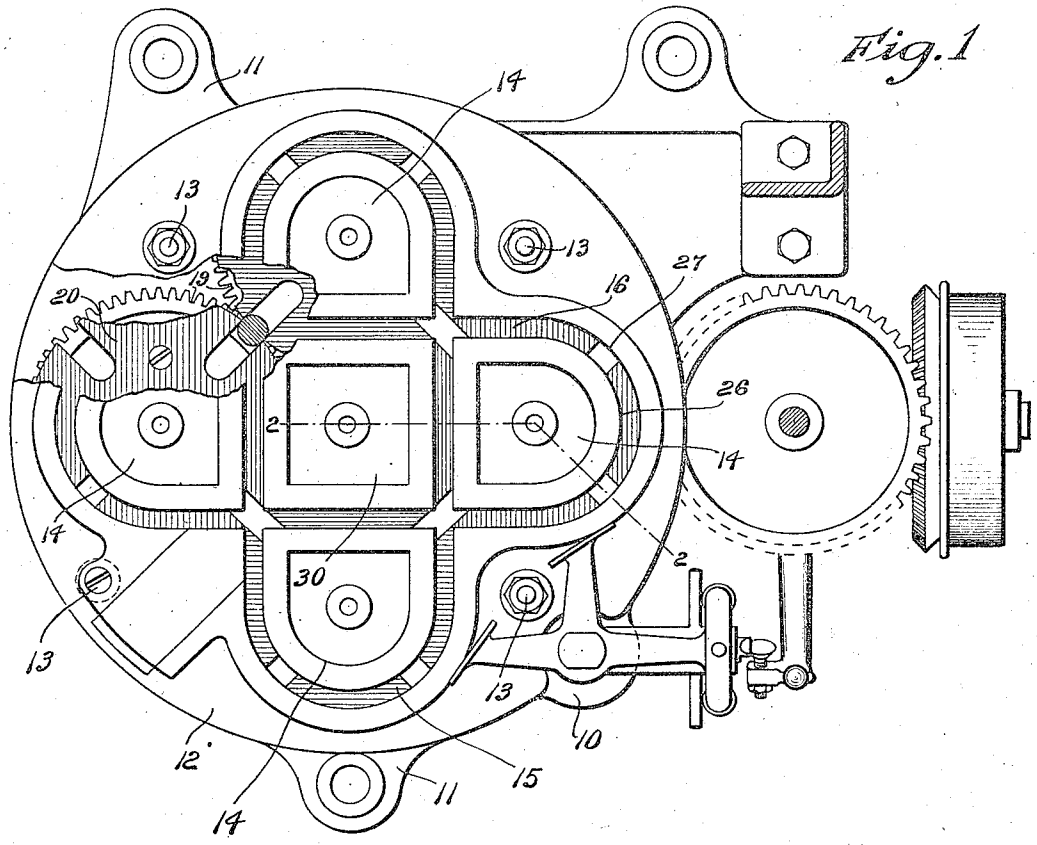
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J. P. KING

BRAIDING MACHINE

Original Filed Jan. 27, 1922 2 sheets-Sheet 1

Fig. 1



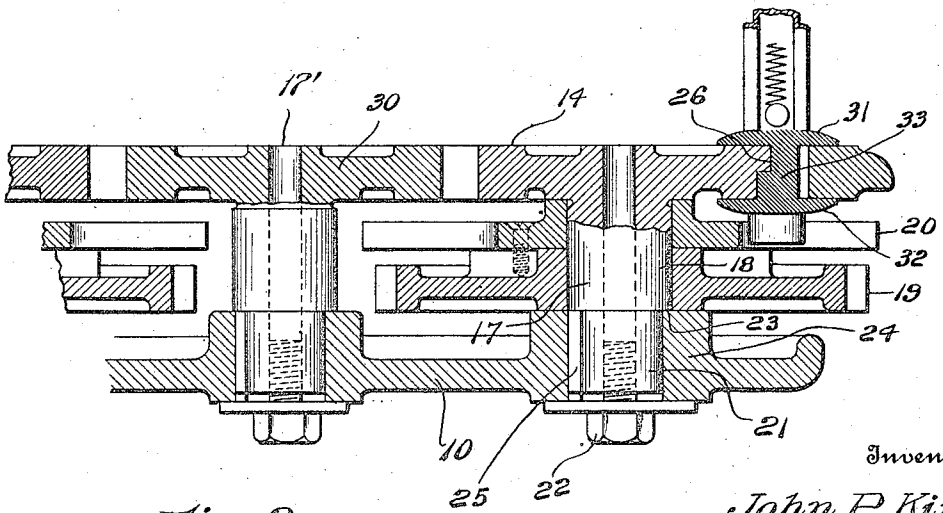


Fig. 2

Inventor

John P. King

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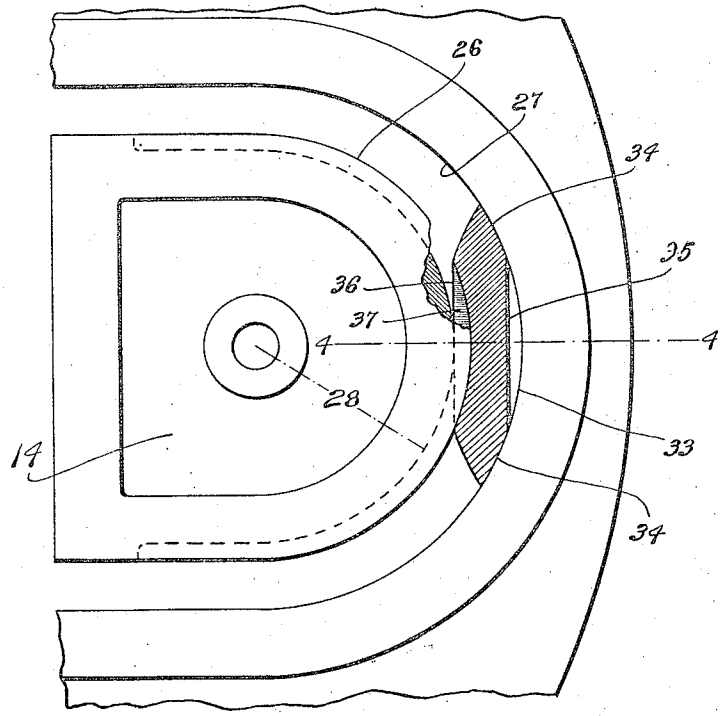
Oct. 28, 1924. 1,513,398

J. P. KING

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Fig. 3



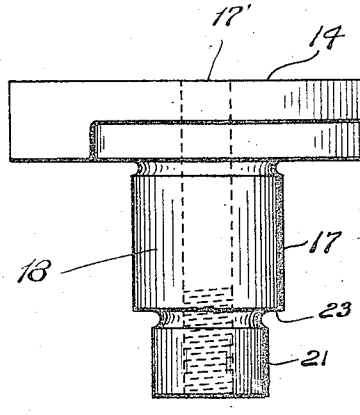
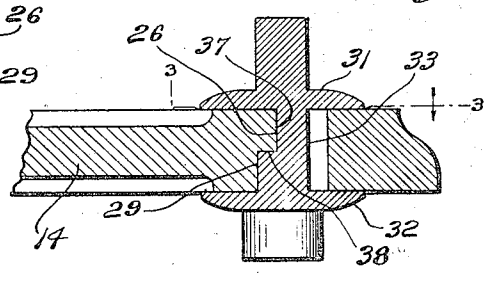


Fig. 5

Fig. 4



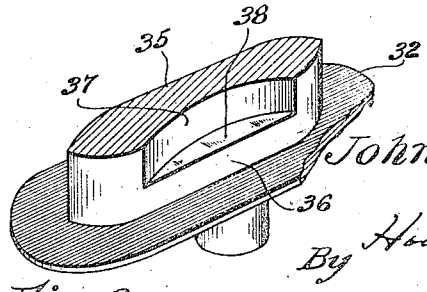


Fig. 6

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Patented Oct. 28, 1924. 1,513,398

UNITED STATES PATENT OFFICE.

JOHN P. KING, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO IDEAL BRAIDING MACHINE COMPANY, A CORPORATION OF RHODE ISLAND.

BRAIDING MACHINE.

Application filed January 27, 1922, Serial No. 532,203. Renewed January 6, 1923.

To all whom it may concern:

Be it known that I, JOHN P. KING, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Braiding Machines, of which the following is a specification.

This invention relates to improvements in braiding machines for braiding cords, fabrics, and the like, and has for one of its objects to provide an improved braiding machine capable of running at a very high rate of speed.

Another object of the invention is to provide an improved machine wherein the lines of travel of the carrier are straight from one point to another thus reducing the friction and lessening the wear on the running parts giving greater durability and materially reducing the cost of repairs.

A further object of the invention is the provision of cooperating means in the carrier and the walls of the raceway whereby portions interlock one with the other while the carrier is traveling about the circular portion of the raceway.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a top view illustrating a braiding machine of my improved construction.

Figure 2 is a sectional elevation on line 2—2 of Figure 1.

Figure 3 is a view showing the circular portion of the raceway and showing the web of the carrier in section on line 3—3 of Figure 4 to illustrate the interlocking effect of the inner wall of the raceway with the web portion of the carrier-shoe.

Figure 4 is a sectional elevation on line 4—4 of Figure 3 showing the interlocking construction of the inner wall of the raceway at the curve, with the web of the carrier-shoe.

Figure 5 is a side elevation illustrating the undercut circular portion of the quoit also illustrating the bearing post as formed integral with this quoit.

Figure 6 is a perspective view of the web portion of the carrier with the top flange removed showing the combined straight and recessed portion of the inner face of the web.

It is found in practice of advantage in the running of high-speed braiding machines, to keep the carriers moving in as near a straight line as possible while traveling back and forth across the track plate on opposite sides of the braiding center, and it is also found of advantage to provide that portion of the bobbin-carrier which runs in the raceway, with the maximum bearing surface, to extend its wearing life, and to accomplish this in a simple and effective way I have provided the web-portion of the carrier which travels in the raceway, with widely-spaced curved end-bearing portions to guide the carrier about the circular portions of the raceways and to connect these end bearing portions with straight bearing side walls to guide the carrier through the straight portions of the raceway, and in order to maintain a uniform width of raceway both on the straight and curved portions I have undercut a portion of the curved side wall of the raceway quoit and I have also recessed a portion of the side wall of the bearing web whereby a portion of the raceway wall is adapted to interlock with that of the carrier web, and the following is a detailed description of one construction by which these results may be accomplished:—

With reference to the drawings, 10 designates the bottom plate of my improved braiding machine which is provided with lugs 11 by which it is bolted to any suitable support, and spaced a suitable distance above this bottom plate is the top or track plate 12 being held securely in this spaced relation by four shouldered studs 13.

This track plate 12 is provided with suitable openings into which quoit plates 14 are set cooperating with the openings in the track plate to form two sets of raceways 15 and 16 to guide the travel of two different sets of carriers (not shown). These quoit plates, in this particular style of machines, are each provided with an integral stud 17 having a bearing portion 18 for the driving gears 19 and the carrier driving plate 20, the lower portion 21 of this stud being arranged to pass through a corresponding opening in the bottom plate and having a bore 17′ threaded at its lower end to receive

a binding bolt 22. This lower portion is reduced in diameter beyond that of the bearing portion 18, and its shoulder 23 by resting upon the boss 24 accurately regulates the height of the quoit plate in the track-plate also this reduced portion 21 is provided with a key 25 which serves to accurately position the quoit plate circularly in the track-plate.

The outer portion 26 of each of these quoit plates is rounded to cooperate with the correspondingly rounded portion 27 of the track-plate and a portion of this curved edge wall of these quoit plates have a reduced radius as at 28 providing an undercut portion 29 for the purpose presently described.

The middle quoit member 30 by my improved construction, is preferably formed square having straight side edges, each being adapted to cooperate with the adjacent opposite edge of the end quoits thereby providing straight line raceways across the track-plate crossing each other at substantially 90° angles.

In order to provide bobbin carriers for these raceways I have constructed a carrier with a body or shoe portion having upper and lower flanges 31 and 32 connected by a web 33 which web, as illustrated in Figure 3, is provided with rounded or curved end bearing portions 34 adapted to engage the outer surface 27 of the raceway when passing around the curves at the ends of the raceway and the web connecting these curved end portions is provided with both outer and inner straight side walls 35 and 36, the inner side wall being preferably grooved as at 37 for a portion of its width to receive the overhanging portion 26 of the outer circular edge of the quoit plate thereby providing a bearing surface 38 which cooperates with those of the overhanging flanges 31 and 32 to assist in supporting the carrier in a vertical position while being driven rapidly about the circular portion of the raceway and by this construction it will be seen that although the inner face of this web portion is recessed, still a large section of the straight portion of the web remains for guiding the carrier while passing along the straight portion of the raceway thereby obtaining the maximum bearing surface both for supporting the carrier when traveling in the curve as well as in the straight portions of the raceway, and by my improved construction of obtaining large bearing areas in the carrier and straight line runs in the raceways a very high running speed may be obtained, the working life of the machine is greatly extended and a high quality of work is produced.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being defined and limited only by the terms of the appended claims.

I claim:

1. In a braiding machine, the combination with a track plate having a raceway, said raceway having a fixed quoit, of a bobbin-carrier provided with a shoe having a web slidable in said raceway, said web being grooved in its inner face only to receive and conform to the contour of the curved portion of the bearing edge of the raceway quoit.

2. In a braiding machine having quoits, the combination with a track plate having a raceway, said raceway having a fixed quoit, of a bobbin-carrier provided with a web slidable in said raceway, said web being grooved in its side face to conform to the contour of and receive the curved edge of a raceway quoit, a portion of the curved edge of said quoit being under cut to receive the adjacent portion of said web.

3. In a braiding machine, the combination with a track plate having a raceway, of a bobbin-carrier provided with a web slidable in said raceway, said web having curved end portions connected by straight sided guide walls, one of said guide walls having bearing surfaces in two different planes intermediate said curved ends, which slidably engage the inner wall of the track-plate.

4. In a braiding machine, the combination with a track plate having a raceway, of a bobbin-carrier provided with a web slidable in said raceway, said web having curved end guide portions connected by straight guide walls, a portion of the face of one of said walls provided with a curved recess to receive a complemental portion of the curved edge of the raceway.

5. In a braiding machine, the combination with a track plate having a raceway, of a bobbin-carrier provided with a web with straight side walls slidable in said raceway, said web having a recessed portion in one of its side walls formed on the arc of a circle to receive a complemental curved edge portion of the raceway.

6. In a braiding machine, the combination with a track plate having a raceway, the inner curved side wall of which is undercut for a portion of its width providing an overhanging upper portion, of a bobbin-carrier provided with a web slidable in said raceway and recessed on a circle to receive and conform to the curve of said overhanging portion of the raceway wall.

7. In a braiding machine, the combination with a track plate having a raceway, of a bobbin-carrier provided with a web having end bearing portions connected by straight side walls slidable in said raceway, the inner

wall of said web being recessed for a portion of its width on the arc of a circle to receive a correspondingly curved edge of the raceway in said recess.

8. In a braiding machine, the combination with a track-plate having a raceway comprising straight lines joined by curves, of a bobbin-carrier adapted to slide in said raceway provided with a web having curved end bearing portions connected by straight side bearing walls, and a portion of the inner wall of said web being recessed to receive a complemental edge of the curved portion of the raceway whereby said web is provided with an extended bearing portion both on the curve, and on the straight portion of the raceway.

9. In a braiding machine, the combination with a track-plate having a raceway with curved terminals, of a bobbin carrier provided with a web slidable in said raceway, one of the side walls of said web intermediate its ends, for a portion less than its entire length having its bearing surfaces located in two different planes to slidably engage a fixed corresponding portion of the curved terminal walls.

In testimony whereof I affix my signature.

JOHN P. KING.