W. R. WIDDUP.

BUSHING.

APPLICATION FILED JAN. 16, 1915.

1,267,485. Patented May 28, 1918.

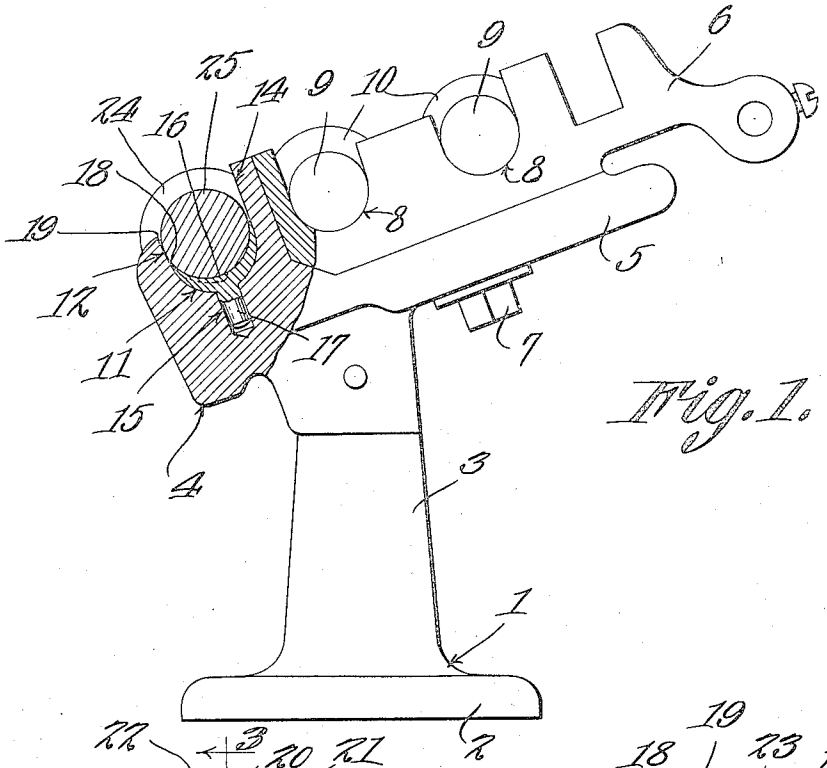

Fig. 1.

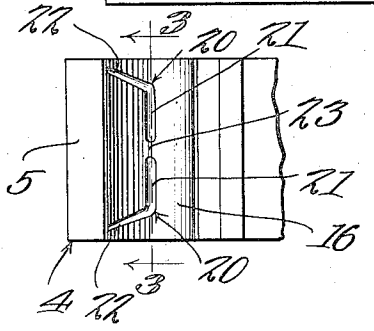

Fig. 2.

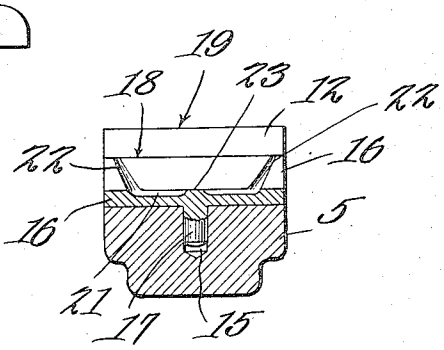

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM R. WIDDUP, OF SPARTANBURG, SOUTH CAROLINA.

BUSHING.

1,267,485. Specification of Letters Patent. Patented May 28, 1918.

Application filed January 16, 1915. Serial No. 2,694.

To all whom it may concern:

Be it known that I, WILLIAM R. WIDDUP, a citizen of the United States, residing at Spartanburg, in the county of Spartanburg and State of South Carolina, have invented a new and useful Bushing, of which the following is a specification.

The device forming the subject matter of this application is a bushing adapted to be applied to the roll stand of a spinning machine, and one object of the invention is to provide a bushing of this type which, through the instrumentality of a simple mechanism, will be prevented from moving endwise on the roll stand, it being possible to adapt the roll stand to the bushing by merely boring a hole in the roll stand, which hole is adapted to receive a depending pin on the bushing.

Another object of the invention is to provide a novel arrangement of oil receiving and oil directing grooves in the bushing, the grooves being so positioned as to define an integral web in the bushing, which web lies directly above the pin on the bushing, thereby to strengthen the bushing at the point where reinforcement is most necessary.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing:—

Figure 1 shows the invention in side elevation, parts being broken away;

Fig. 2 is a fragmental top plan looking downwardly upon the bushing, the roll which is journaled in the bushing being removed;

Fig. 3 is a section on the line 3—3 of Fig. 2.

In carrying out the present invention there is provided a supporting structure which may be of any desired form, the supporting structure in the present instance being delineated in the form of a roll stand denoted generally by the numeral 1. Although the precise form of the roll stand 1 is immaterial, the same has been shown in the present instance as comprising a base 2 from which rises a pedestal 3 supporting a downwardly and forwardly inclined arm 4 which may be of any desired construction. In the present instance but not necessarily the arm 4 is a composite structure and embodies a fixed extension 5 constituting a part of the pedestal 3, the fixed extension 5 supporting a longitudinally adjustable extension 6 held in place by a set screw 7 or in any other desired manner.

In the extension 6 are formed notches 8 receiving for rotation the trunnions 9 of rear rolls 10. In the arm 4 there is formed a notch 11 of curved transverse section, the notch terminating in a forward wall 12 and a rear wall 14 disposed in approximate parallelism. The notch 11 receives for rotation, the trunnion 25 of the forward roll 24. At times it becomes necessary to bush the journaling notch 11, and under such circumstances, recourse is had to a crescent-shaped or trough-like bushing 16 which may be made of any desired metal suitable for the purpose in view.

The bushing 16 fits in the notch 11 and is provided intermediate its ends with a depending pin 17 fitting removably in an opening 15 formed in the arm 4 at the base of the notch 11.

The forward edge 18 of the bushing 16 is located below the forward edge 19 of the arm 4 so that when the trunnion 25 of the roll 24 is journaled in the bushing, an oil receiving groove will be formed. In the journaling face of the bushing 16 oil receiving grooves 20 are fashioned. Each groove 20 comprises a body portion 21 and a branch 22. The body portions 21 of the notches are alined longitudinally of the bearing, the branches 22 diverging from each other and intersecting the upper, forward edge of the bushing. The inner or adjacent ends of the body portions 21 of the grooves 20 are spaced apart, thereby to define an integral web 23 located directly above the pin 17.

The function of the pin 17 is to prevent the bushing 16 from moving endwise and those skilled in the art will appreciate readily that a roll stand may be adapted to receive the pin 17 by simply boring a hole or opening 15 in the roll stand at the base of the notch 11. Especial attention is directed

to the fact that the ends of the body portions 21 of the oil receiving grooves are spaced apart to define the web 23. Since this web 23 is located directly above the pin 17, the bushing is strengthened at the point where reinforcement is most needed.

When the trunnion 25 of the roll 24 is journaled in the bushing 16, as shown in Fig. 1, the common practice is to inject oil between the wall 12 of the notch or groove 11 and the surface of the trunnion 25. The oil flows downwardly and, to some extent, flows laterally, longitudinally of the edge 18 of the bushing 16. As the oil flows laterally, it is intercepted by the branches 22 of the notches 20 and flows downwardly between the bushing and the trunnion 25. From the foregoing it will be noted and understood that the function of the branches 22 is to prevent oil from flowing beyond the ends of the bushing 16 and dripping downwardly, with obviously undesirable results.

It is to be observed that the roll 24 rests upon the bushing 16 and is supported solely thereby. There is a constant tendency, therefore, for the bushing to be rotated by the action of the roll, but this tendency has no appreciable effect, owing to the provision of the pin 17. In this connection, the device herein disclosed is to be distinguished clearly from a structure in which a bushing or bearing, lying above the roll, is provided with the pin 17 or its mechanical equivalent.

Having thus described the invention, what is claimed is:—

As an article of manufacture, a bushing comprising a trough-shaped body provided on its lower face and intermediate its ends with a depending pin, the upper concaved face of the body being equipped with two L-shaped grooves, each comprising an arm extended transversely of the body from a point adjacent one edge of the body to a point adjacent the longitudinal center of the body and located near the ends of the body, each groove comprising also an arm extended longitudinally of the body and located adjacent the longitudinal center of the body, the inner ends of the last specified arms of the grooves being spaced apart to define an integral rib located directly above the pin and defining a support for the part journaled in the body.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM R. WIDDUP.

Witnesses:
M. E. McCarthy,
I. E. Simpson.