Aug. 31, 1926. 1,598,157

F. SEIBEL

APPARATUS FOR SPINNING ARTIFICIAL SILK

Filed April 26, 1926

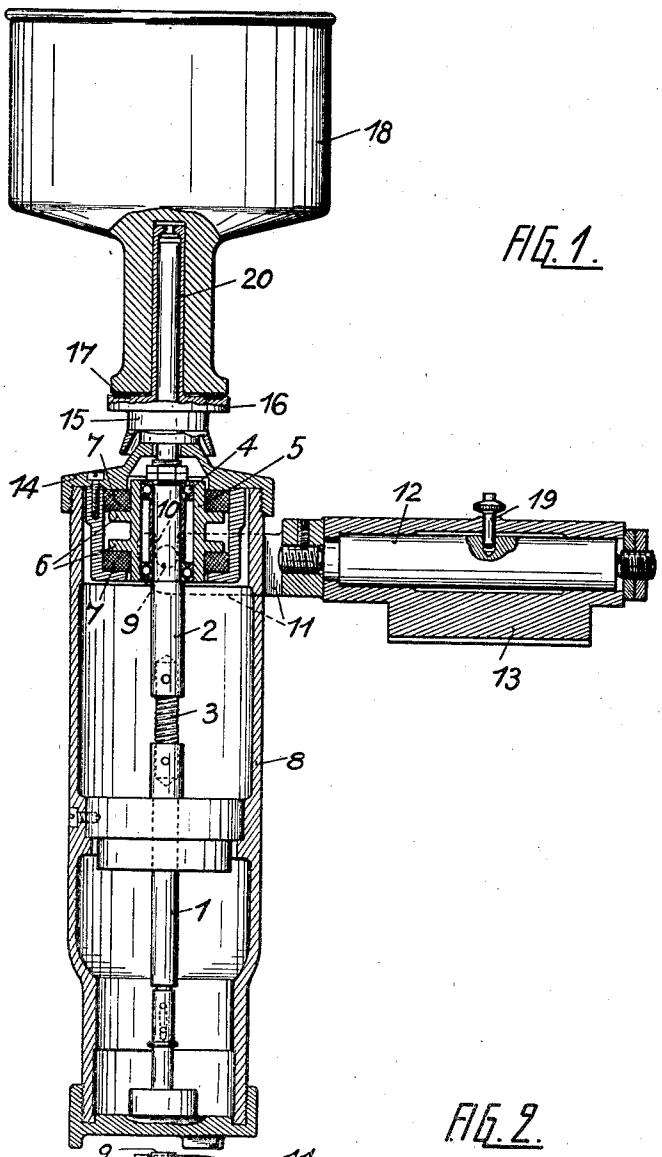


FIG. 1.

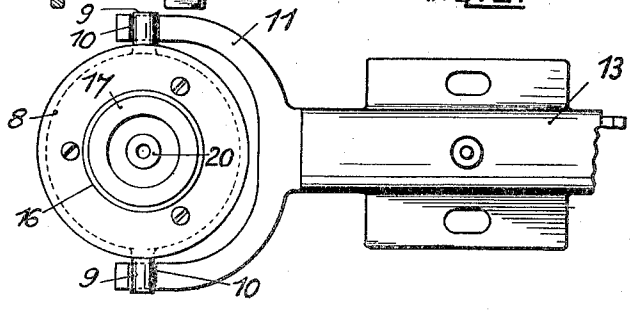


FIG. 2.

Inventor:
Fritz Seibel

Patented Aug. 31, 1,598,157

UNITED STATES PATENT OFFICE.

FRITZ SEIBEL, OF BERLIN, GERMANY, ASSIGNOR TO BERLIN-KARLSRUHER INDUSTRIEWERKE A.-G., OF BERLIN-WITTENAU, GERMANY.

APPARATUS FOR SPINNING ARTIFICIAL SILK.

Application filed April 26, 1926, Serial No. 104,787, and in Germany January 15, 1924.

This invention relates to spinning heads for spinning artificial silk and like threads. Its purpose is to obviate whipping of the shaft of the spinning head at high speed and the disadvantages resulting therefrom.

To this end the invention includes a spinning head having a shaft formed in two portions joined by a flexible driving connection. The one part of the shaft is power driven, as by an electric motor, while the other rotates the spinning head.

The invention further includes a spinning head having its shaft mounted in yieldingly supported bearings, which are capable of adjusting themselves angularly to the shaft, as well as able to yield to a limited extent longitudinally of the shaft.

A still further development of the invention comprises a spinning head mounted in gimbals or the like, so that it is capable of setting itself in any desired direction; and such construction may include also means for locking the spinning head in a given position, if desired.

These and other features of the invention will be found more fully described with reference to the construction of spinning head illustrated in the accompanying drawings. of which:—

Figure 1 is a longitudinal section, and Figure 2 a plan.

The part 1 of the shaft of the spinning head is driven directly by an electric motor, not shown. The part 2 of the shaft carries the thread can 18. The two parts of the shaft are connected by a flexible member 3; this may, for instance, be a flexible tube or a shaft built of a plurality of telescoped and oppositely wound helical springs capable of transmitting a drive either in the clockwise or the anti-clockwise direction.

The spinning head driving spindle 2 is mounted in a journal ball bearing 4, the outer race 5 of which has flanges secured between resilient members 7, for instance rubber rings. This construction enables the bearing to adjust itself angularly, and also to yield radially or longitudinally, thereby greatly reducing the wear on the bearing and prolonging the life of the spinning head.

The casing 8 of the spinning head is carried by trunnions 9, at about the level of the spindle bearing, in open recesses 10 in a fork 11, the stem 12 of which is rotatable in a journal 13.

The driving spindle projects from the top of the casing 8 through its cover 14 and carries a driving head 15. The expanded flange like top 16 of this head has a ring 17 of rubber or other elastic material let into it. The spinning can 18 rests upon this ring, so that motion is imparted to the can only through the friction due to its own weight between it and the ring 17.

The can is held centrally by the cylindrical stem 20 of the driving head 15. This has the advantage over the conical stems used hitherto that it greatly facilitates the removal of the can, enabling it to be removed even while the apparatus is working.

There is an opening in the bearing 13 and a corresponding recess in the stem 12 in which a bolt 19 can be inserted. The bolt has a knurled head from which it projects on both sides, on one side to a considerable length and on the other side to a short length. If it is desired to prevent the fork turning in its bearing the long end of the bolt is inserted in the bearing and extends into the recess in the stem. This is shown in Figure 1. If the fork is to be left free the bolt is reversed, when its short end will not reach into the stem.

What I claim is:—

1. Apparatus for spinning artificial silk comprising a thread can, a driving shaft therefor formed in two parts, and a flexible member joining said parts thereby to permit relative angular movement between said parts.

2. In a spinning head the combination of a casing, a shaft supported therein in bearings, a second shaft substantially co-axial with the first, and a flexible member connecting said shafts to transmit the drive between them and to permit relative angular movement of said shafts.

3. In a spinning head the combination of a casing, a shaft supported therein in bearings, a second shaft substantially co-axial with the first, and a flexible shaft built of telescoped and oppositely wound helical springs uniting said two shafts thereby to permit relative angular movement of the shafts.

4. In a spinning head the combination of a driving shaft, a motor shaft co-axial therewith, a flexible connection between said shafts for permitting relative angular movement thereof, a casing surrounding said

shafts, and a bearing yieldingly supported in said casing and guiding the driving shaft.

5. In a spinning head the combination with the driving shaft of two ball bearings supporting said shaft, a sleeve uniting the outer races of said bearings and having radial projections, a casing surrounding said shaft, and rubber rings supported endwise and radially in said casing fitting said sleeve on opposite sides of its radial projections.

6. In a spinning head the combination with a casing having the shaft mounted therein, of trunnions upon the casing, a fork supporting said trunnions and having a cylindrical stem, and a bearing carrying said stem.

7. In a spinning head the combination with a casing having the shaft mounted therein, of trunnions upon the casing, a fork having recesses in its upper surface to receive said trunnions and having a cylindrical stem, and a bearing carrying said stem.

8. In a spinning head the combination with the driving shaft of a head thereon, a frictional surface on said head having a stem projecting therefrom, and a thread can fitting upon said stem and resting on said frictional surface.

9. In a spinning head the combination with the driving shaft of a head thereon, a frictional surface on said head having a cylindrical stem projecting therefrom, and a thread can fitting upon said cylindrical stem and resting on said frictional surface.

10. A spinning head comprising a casing, a thread can driving shaft supported in said casing, a fork carrying said casing so that it can swing said fork having a cylindrical stem, a bearing surrounding said stem and having an opening therein, and a bolt having short and long projections on opposite sides of its head adapted to enter said opening, and by its long projection to engage said stem.

11. A spinning head comprising a casing supported so as to swing in two directions at right angles, a bearing flexibly mounted in said casing approximately in the plane of the axes of swing, a driving shaft carried in said bearing and projecting from said casing, a motor shaft co-axial with said driving shaft, a flexible member connecting said shafts, a head having a frictional surface upon said driving shaft outside said casing, and a cylindrical stem projecting from said surface.

In testimony whereof I have signed my name to this specification.

FRITZ SEIBEL.