Jan. 7, 1930. J. MOTTE 1,742,553

PRESSURE ROLLERS FOR SPINNING MACHINES AND THE LIKE

Filed Feb. 25, 1928

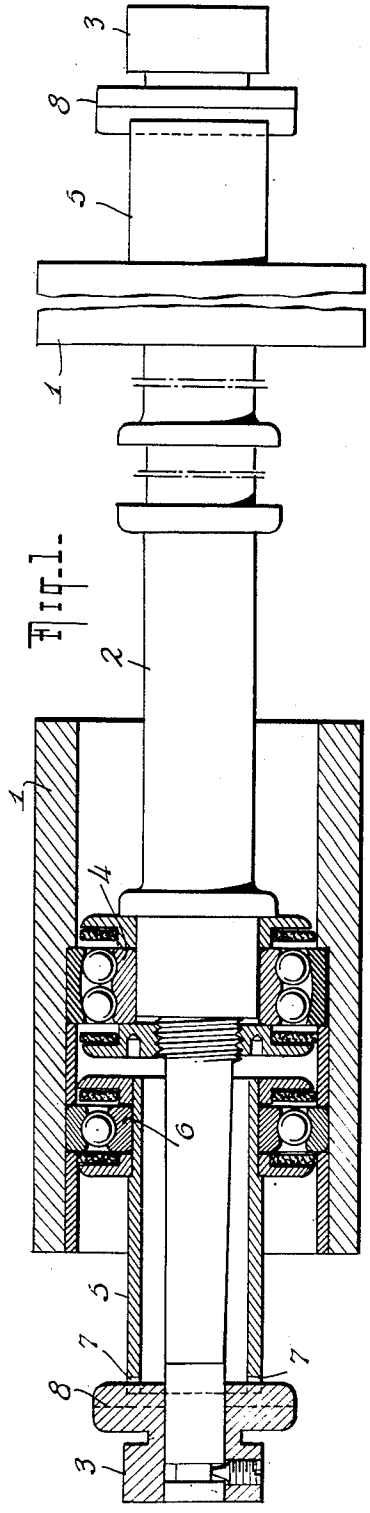


Fig. 1.

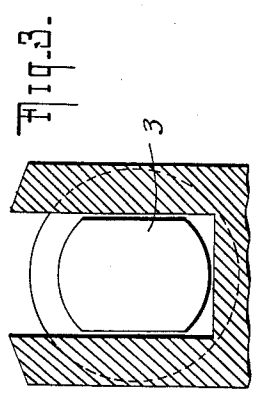


Fig. 3.

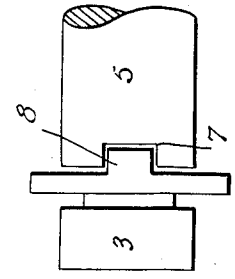


Fig. 2.

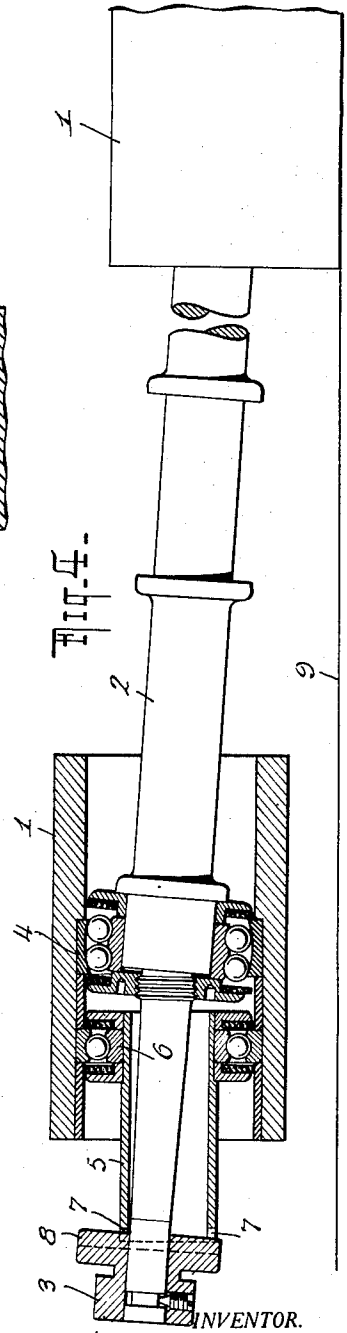


Fig. 4.

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UNITED STATES PATENT OFFICE

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PRESSURE ROLLERS FOR SPINNING MACHINES AND THE LIKE

Application filed February 25, 1928, Serial No. 257,080, and in France June 2, 1927.

This invention relates to the pressure or top rollers of drawing gears of preparing and spinning machines such as, for example, draw frames, fly frames, winding frames, continuous spinning machines or mules, etc., and its object is to provide an improvement in these drawing gears and in particular in those of the kind in which the pressure or rollers are loosely mounted in pairs upon a common shaft by means of a self aligning ball bearing.

It has been observed, in fact, that these devices, in spite of the numerous advantages they present, in particular that of being adapted to operate even when their shafts come out of alignment for any reason, may, however, in certain cases, present a disadvantage resulting from the lateral to and fro movement of the slivers, which produces, on account of the freedom of oscillation of the rollers, permitted by the self aligning mounting, a displacement of the latter tending to cross, that is to say to incline, the shaft of the pressure rollers relatively to that of the bottom roller, thus producing irregularities in the drawing, as the linear contact between the two pairs of rollers is liable to become replaced by a point contact.

The improvement forming the subject of the present invention removes these disadvantages and consists, with this object in view, in combining with the previously provided self aligning mounting, a guide for the pressure rollers such that they are only free to move in the common plane passing through the axis of their shaft and that of the drawing cylinder beneath the same.

In order to enable the invention to be clearly understood and by way of example, an embodiment is hereinafter described and illustrated diagrammatically in the accompanying drawings in which:

Fig. 1 is a fragmentary view, partly in longitudinal section and partly in elevation, of an apparatus constructed in accordance with the invention.

Fig. 2 is a plan view of a part, viewed from beneath, showing the construction of the mounting permitting the roller to move in one single plane.

Fig. 3 is an end view of the head of the shaft in its guide.

Fig. 4 is a view similar to Fig. 1, showing the relation of the parts when one of the rollers is in displaced position.

In these figures, 1 indicates the pressure rollers and 2 the shaft, at each end of which is mounted a head 3 which is, in a known manner, set into the guide in the frame (Fig. 3), each roller 1 being mounted upon the shaft 2 by means of a self-aligning ball bearing 4.

According to the invention, in order to limit the oscillations of either roller 1 to displacements in a common vertical plane passing through the axis of the shaft 2 and that of the bottom or drawing cylinder (not shown) which is located below the rollers 1, provision is made of a sleeve 5 co-axial with the shaft 2, a rigid ball bearing 6 being interposed between the roller 1 and the said sleeve 5. The latter has at its end, in the said common plane, notches or grooves 7 forming a guide for a tongue-shaped extension 8 of the adjacent head 3.

It will be seen that there is thus obtained, by the combination of such devices, a mounting of the roller 1 permitting a displacement in the common plane of the axes of the shafts of the top and bottom rollers and that it is possible, without going outside the scope of the invention, to employ equivalent means.

What I claim is:

In apparatus of the character described, a shaft having oscillatory movements in a vertical plane, a head on said shaft having an extension, a pressure roller on said shaft, a self-aligning bearing unit interposed between said shaft and roller to permit movements of the former relative to the roller, a rigid bearing unit also interposed between said shaft and roller, and a sleeve carried by said rigid unit co-axially with said roller, said sleeve having a slot therein to receive said extension.

In testimony whereof I affix my signature.

JOSEPH MOTTE.