July 8, 1947. R. McC. JOHNSTONE 2,423,778

JOURNAL STRUCTURE

Original Filed June 13, 1942 2 Sheets-Sheet 1

Fig. 1.

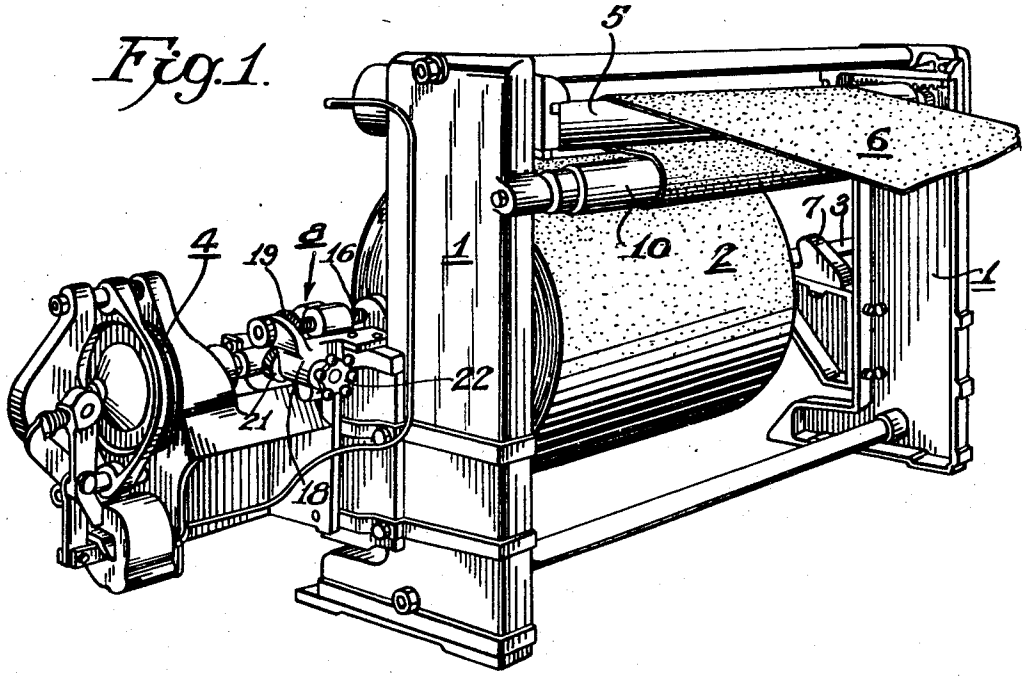
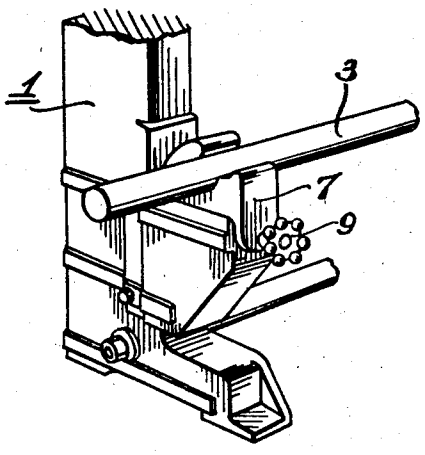


Fig. 2.



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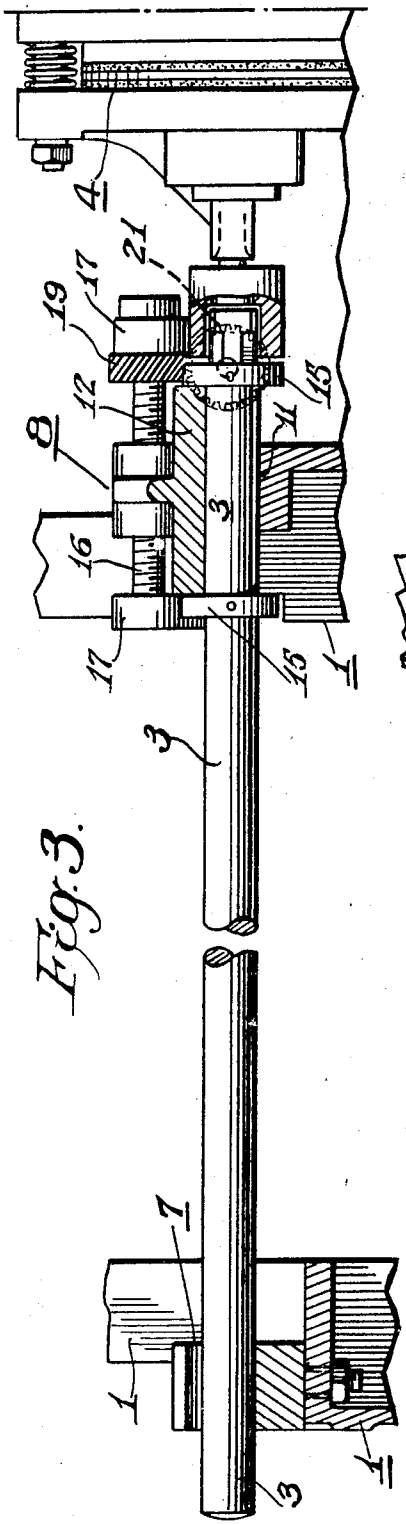


Fig. 3.

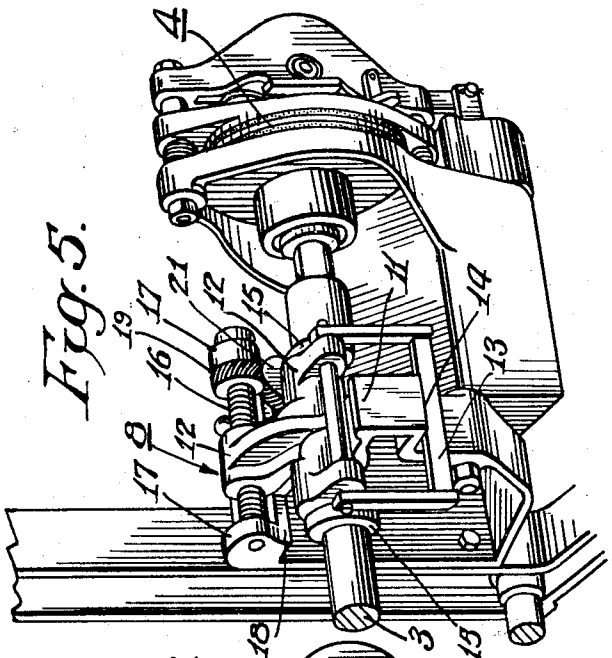


Fig. 5.

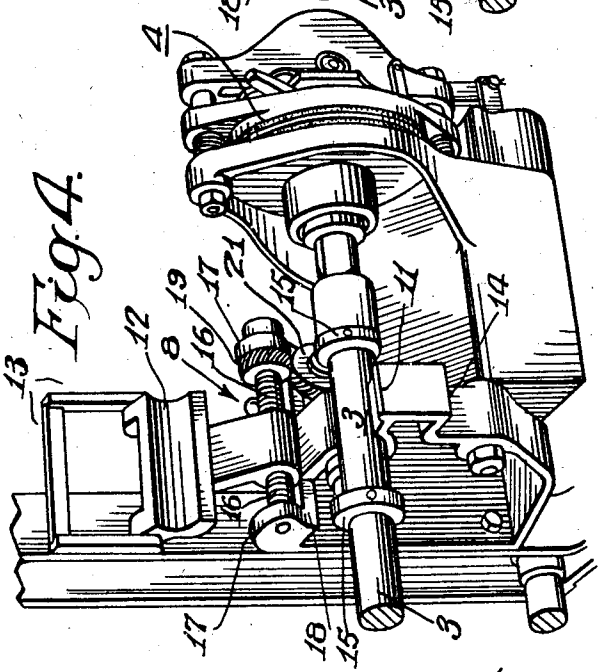


Fig. 4.

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Patented July 8, 1947 2,423,778

UNITED STATES PATENT OFFICE

2,423,778

JOURNAL STRUCTURE

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Original application June 13, 1942, Serial No. 446,917, now Patent No. 2,412,509, dated December 10, 1946. Divided and this application May 5, 1943, Serial No. 485,786

3 Claims. (Cl. 308—59)

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The principal object of this invention is to provide a novel adjustable journal bearing structure having an application of particular importance to machines of the character disclosed in my copending application, Serial Number 446,917, now Patent Number 2,412,509, issued December 10, 1946, of which the present application is a division.

In the attached drawings,

Fig. 1 is a view in perspective of a machine incorporating a bearing structure made in accordance with my invention;

Fig. 2 is a fragmentary view in perspective of an element of the bearing means;

Fig. 3 is a longitudinal sectional view showing details of the bearing, and

Figs. 4 and 5 are fragmentary views in perspective of that portion of the machine which includes the bearing structure.

The machine disclosed in the drawings consists essentially of a frame 1 having means for rotatably supporting a parent roll 2 and the shaft 3 to which this roll is secured; a means for retarding the rotation of the roll 2, said means taking the form, in the present instance, of a friction brake 4; a roll 5 which operates in a loop of the traveling web 6 as the latter is drawn around a guide roll 10 from the parent roll 2 and which is sensitive to the pull of the web and is tensioned by suitable means against the pull; and a highly sensitive means, forming no part of the present invention, for operatively connecting the roll 5 with an actuating means for the brake whereby displacement of the said roll due to variations in the tension in the web will automatically actuate the brake to thereby modify the tension as may be required to maintain it substantially constant.

More specifically, the shaft 3 of the parent roll 2 is supported in the frame in bearings 7 and 8, the bearing 7 being adjustable transversely of the shaft axis through the medium of a hand wheel 9, see Fig. 2, so as to afford a means for aligning the shaft 3 in the frame. The journal bearing 8, as best shown in Figs. 4 and 5, is of the split type and comprises a bottom portion 11 which receives the shaft 3, and a top or cap portion 12 which is hinged on the frame and which may be adjusted between a retracted position, as shown in Fig. 4, and an operative position, as shown in Fig. 5, wherein the said cap portion engages the top of the shaft and thus retains it in the member 11. The cap 12 is provided with a pivoted latch 13 which when the cap is in the operative position is adapted to pass under the shoulder 14 of the bearing member 11 so as to lock the cap 12 in the operative position.

The shaft 3 is provided with spaced collars 15, 15 which may be adjusted to abut the opposite ends of the bearing cap 12 when the latter occupies the operative position, as shown in Fig. 3, and the hinge pin 16 for the cap 12 is in the form

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of a worm or a screw having threaded engagement with the cap structure and being mounted for rotation in lugs 17, 17 on the bearing bracket 18. A spiral gear 19 is secured to one end of the worm 16, and this gear meshes with a second spiral gear 21 which is suitably mounted for rotation in the bracket 18 and which may be turned through the medium of a hand wheel 22, see Fig 1. This provides for adjustment of the journal cap 12 axially of the shaft 3, and through the medium of the collars 15, 15 for a corresponding axial adjustment of the shaft and of the parent roll 2 in the frame, it being noted that the cap 12 is of greater length axially of the journal than the bottom portion 11 so that clearance is afforded between the collars 15 and the ends of the bottom portion 11 of the bearing structure.

I claim:

1. A journal bearing structure comprising a lower shaft-supporting portion, an upper complementary cap portion, means for interlocking the cap portion with the shaft for joint movement in both axial directions, an axially fixed threaded shaft extending axially of the journal and having threaded engagement with the said cap portion of the bearing, and means for rotating the threaded shaft.

2. A journal bearing structure comprising a lower shaft-supporting portion, an upper shaft-engaging portion, a shaft extending parallel to the journal and forming a hinge pin for the said upper portion of the bearing, said shaft being threaded and having threaded engagement with said upper portion, and means for rotating the shaft.

3. A journal bearing structure comprising a lower-shaft-supporting portion, an upper shaft-engaging portion, means for adjusting the said upper portion in the axial direction relative to the lower portion, and means for slidably latching said portions together.

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