(No Model.)

G. B. McCRACKEN & S. HAMER.

SPINDLE BEARING FOR SPINNING FRAMES.

No. 300,785. Patented June 24, 1884.

Fig. 1

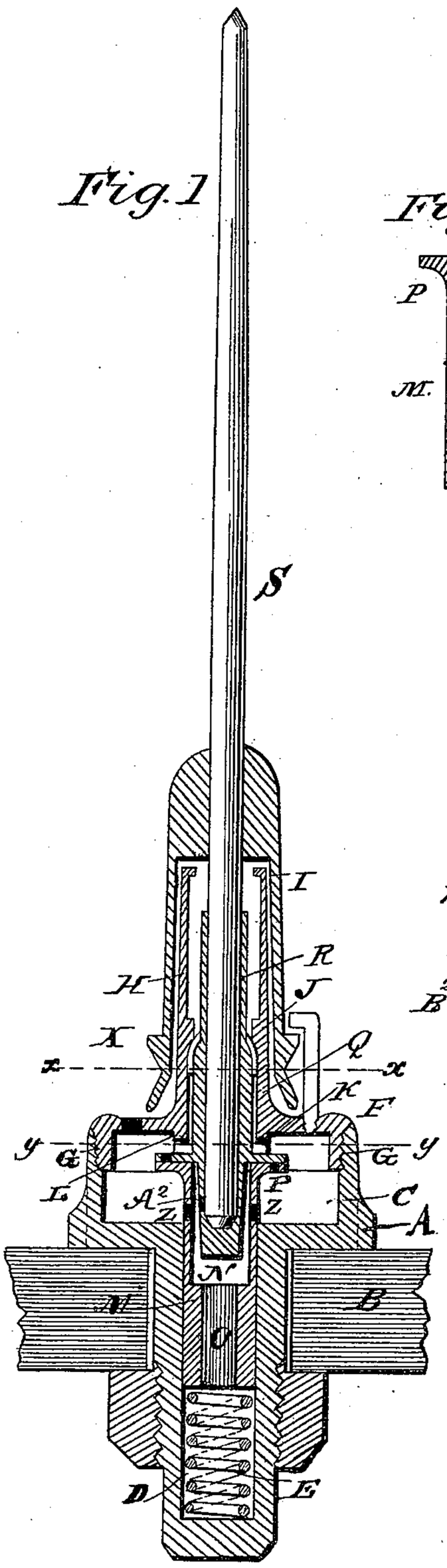


Fig. 2

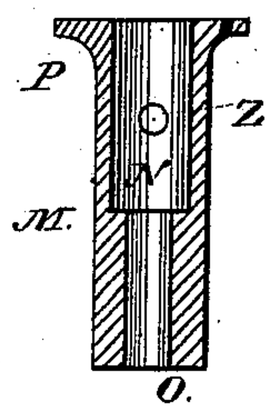


Fig. 3.

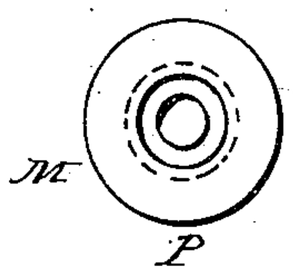


Fig. 5

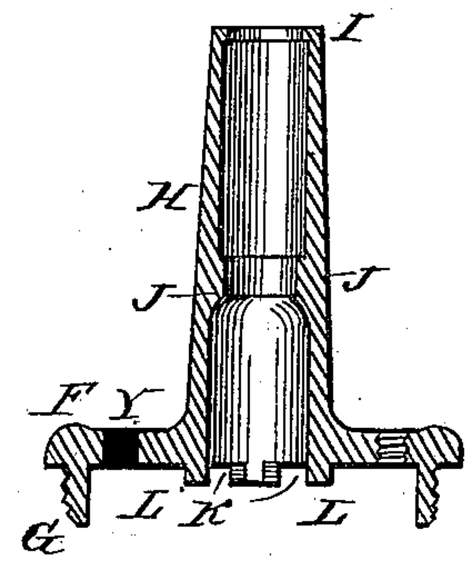


Fig. 4.

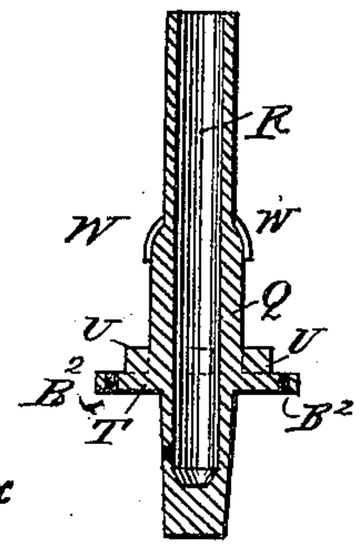


Fig. 6.

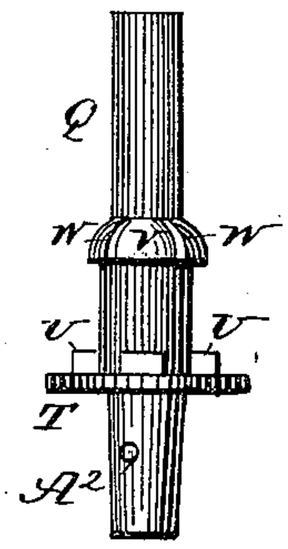


Fig. 7.

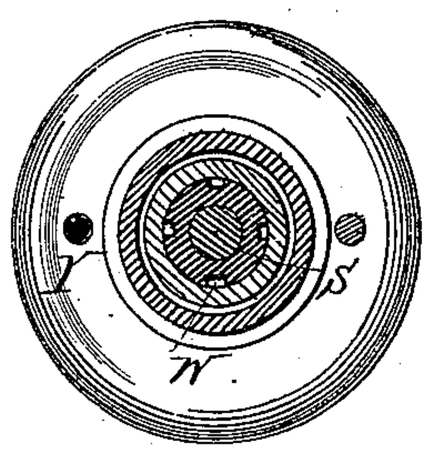
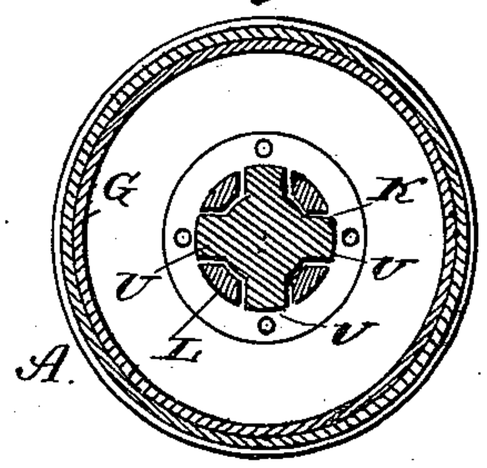


Fig. 8.



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UNITED STATES PATENT OFFICE.

GEORGE B. McCRACKEN AND SAMUEL HAMER, OF WILLIMANTIC, CONN.

SPINDLE-BEARING FOR SPINNING-FRAMES.

SPECIFICATION forming part of Letters Patent No. 300,785, dated June 24, 1884.

Application filed July 7, 1883. (No model.)

To all whom it may concern:

Be it known that we, GEORGE B. McCRACKEN and SAMUEL HAMER, citizens of the United States, residing at Willimantic, in the county of Windham and State of Connecticut, have invented a new and useful Spindle-Bearing for Spinning-Frames, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to spindle-bearings for spinning-frames; and its object is to provide a bearing and support for the spindle possessing superior advantages in point of simplicity, inexpensiveness, durability, and general efficiency, whereby the spindle will automatically find its axis of rotation with an unbalanced load, so that it will run steady and true under varying conditions, and will be automatically lubricated.

In the drawings, Figure 1 is a view in vertical section of a spindle-bearing constructed with our improvements, showing also a spindle in elevation. Fig. 2 is a vertical sectional view of the vertically-moving plunger or support. Fig. 3 is a plan view of the head of the said support. Fig. 4 is a vertical sectional view of the bolster or bearing-piece in which the spindle revolves. Fig. 5 is a vertical sectional view of the cap-piece. Fig. 6 is a side elevation of the bolster. Fig. 7 is a horizontal sectional view on the line *x x*, Fig. 1. Fig. 8 is a horizontal sectional view on the line *y y*, Fig. 1.

Referring to the drawings, A designates the base-piece, which is fastened to the rail B of the frame in the usual manner, and has its top section or portion formed with a depression or recess, C, forming an oil-reservoir, from which extends a central longitudinally-disposed bore or recess, D, that receives a coiled spring, E, at its bottom.

F is the cap, which is secured to the upper edge of the base A, preferably by screw-threads G, and is provided with a central vertical extension, H, at the top of which is formed an inturned flange, I, while an annular shoulder, J, is formed below the said flange and on the interior of the said extension. From the bottom of the cap-piece and around its central perforation are formed a circular series of recesses, K, in an annular flange, L, extending downwardly.

M is the vertically-moving support, which is arranged in the recess D, and is forced vertically by the spring E. The top portion of the support M is formed with a recess, N, that receives the lower end of the bolster, and from which extends a longitudinal channel or perforation, O, opening into the portion of the recess D having the spring E. At its top the support M is formed with a lateral flange, P, forming a smooth enlarged top surface.

Q is the bolster or bearing-piece, which has a central cylindrical recess, R, that receives the lower end of the spindle S and forms the bearing of the same. Near its lower end the bolster is formed with a lateral flange, T, corresponding to the flange P, so that these two flanges are held together by the tension of the spring E, and the lateral circumferential series of teeth U U, that project from the bolster above said flange T, are forced into the recesses K, so that the projections of the flange L will prevent the spindle-bearing or bolster from turning by the friction of the spindle. By having a circumferential series of teeth to retain the bolster from rotary displacement the spindle will find its true axis of revolution without the disturbing effect or displacement which occurs when the bolster is held from one side only. The bolster is enlarged at its portion near the shoulder J when the bolster is arranged in the cap F, this enlarged portion V being formed with a series of channels or grooves, W, the purpose of which will be presently described. The flanges P and T serve to maintain the spindle in its proper vertical position, and present a large wearing-surface, over which to distribute the wear when the spindle is running with an unbalanced load. In this device the spindle will have a perfectly unretarded and well-lubricated movement, and will not be affected by the pull of the band around the whirl X, this latter result being attained by placing the enlargement V of the bolster in line with the portion of the whirl around which the driving-band passes.

The operation and advantages of our invention will be readily understood and appreciated. In practice the reservoir is filled with oil through a perforation, Y, in the cap F. From the reservoir the lubricant automatically passes through a perforation, Z, in the support M to the recess N, from which latter it

passes through a perforation, A^2, in the side of the bolster to the spindle. The lubricant is then carried up through the bore of the bolster and around the spindle by the revolutions of the latter, and serves to thoroughly lubricate the spindle. This upward movement of the lubricant may be accelerated by a thread cut in the bore of the bolster. When the lubricant reaches the top of the bolster, it is thrown by centrifugal force against the inner face of the cap F, and is prevented from being carried over the cap by reason of the interior flange, I. From inside the cap F the oil passes down through the oil-channels W in the bolster, and thoroughly lubricates the bearing on which the bolster rocks. It then passes down through perforations B^2 in the flange T and lubricates the bearing-surfaces between these flanges, although the oil in the reservoir, in which the flanges are situated, may be below the latter. Any hard and foreign substances in the oil will fall by gravity through the perforation O into the spring-chamber, where they can do no harm to the parts that are lubricated.

We claim as our invention—

1. The combination of the spindle-bolster or bearing-piece having a circumferential lateral flange forming its bottom rest, the spring-actuated supporting-piece having a corresponding supporting-flange extending circumferentially and laterally at its top end, and engaging the flange on the bolster to force the latter upwardly, devices for holding or supporting the bolster or bearing-piece, a device for supporting or holding the supporting-piece and spring, and the spring, substantially as and for the purpose set forth.

2. The combination of the cap-piece F, having the vertical extension H, formed with the interior shoulder, J, and the series of bottom projections, the spring-actuated supporting-piece M, forced upwardly and provided with the lateral top flange, P, the spindle-bolster or bearing-piece having the recess or bore R, the lateral flange T, corresponding to the flange P and engaged thereby, the enlargement V, engaging the shoulder J, the teeth U, projecting laterally and engaging the projections of the flange L, the spindle, means for holding the supporting-piece M and the spring E, and the said spring, substantially as and for the purpose set forth.

3. The combination of the base-piece having the depression or recess C in its top, and the bore D extending from the said recess, the supporting-piece projecting from the bore D and provided with the perforation Z, a spring for forcing said supporting-piece upward in the bore, the spindle-bolster or bearing-piece Q, having the bearing-recess R, and the perforation A^2, opening into the same, means for supporting the bolster on the piece M, and the spindle journaled in the recess R, whereby the spindle will be automatically lubricated with oil from the reservoir-recess C, substantially as set forth.

4. The combination of the base-piece having the depression C and recess D, the cap F, having the shoulder J, the supporting-piece arranged in the recess D and formed with the perforation Z, the recess N, and the top lateral flange, P, the spindle-bolster or bearing-piece formed with the perforation A^2 in the portion which enters the recess N, and having the enlargement V, formed with the channels W, and engaging shoulder J, the bearing-recess R, and the flange T, having the perforations B^2, and the spring E, whereby the automatic lubrication of the parts is effected, substantially as set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

GEORGE B. McCRACKEN.
SAMUEL HAMER.

Witnesses:
JAMES WALDEN,
EDWARD J. MURRAY.