W. MASON.

Mechanism for Supporting the Spindles of Ring Spinning Frames.

No. 230,306. Patented July 20, 1880.

Fig. 2.

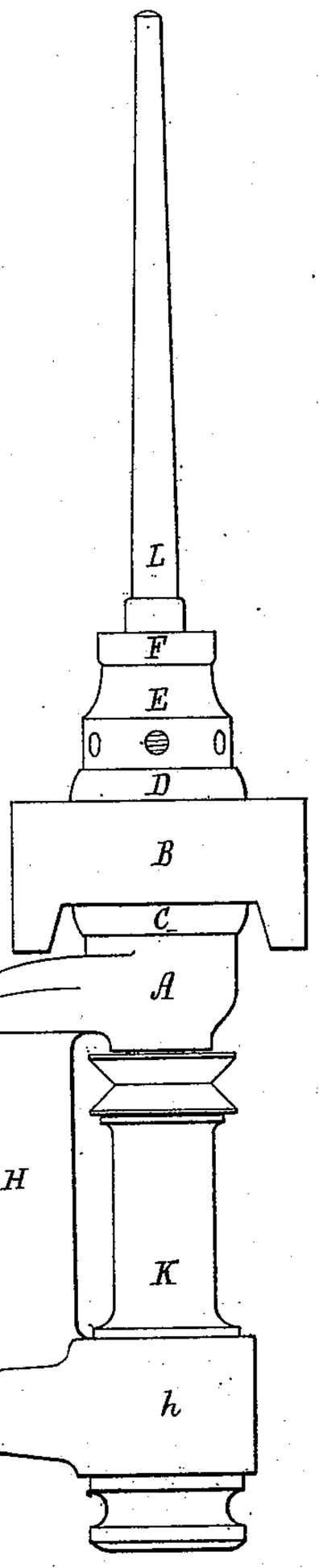

Fig. 1

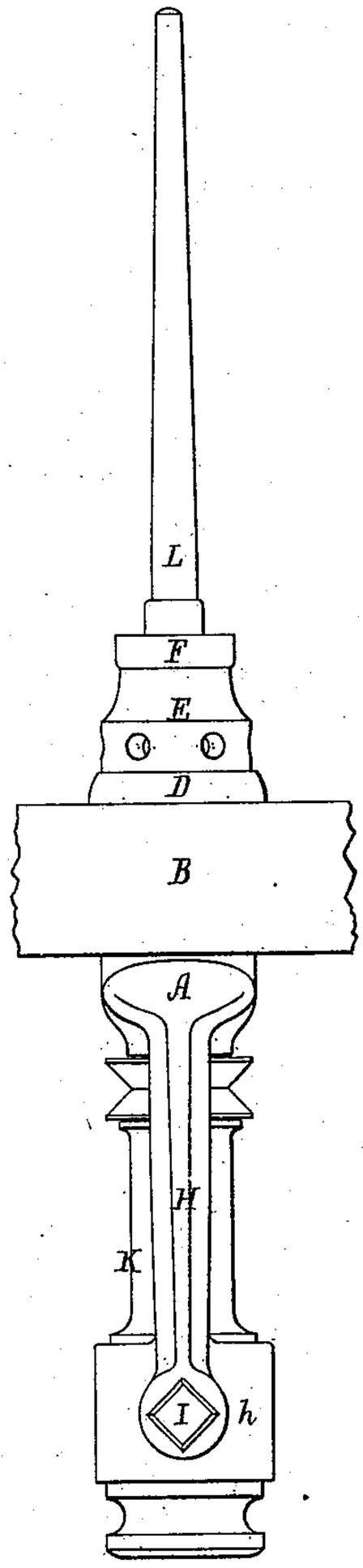

Fig. 3.

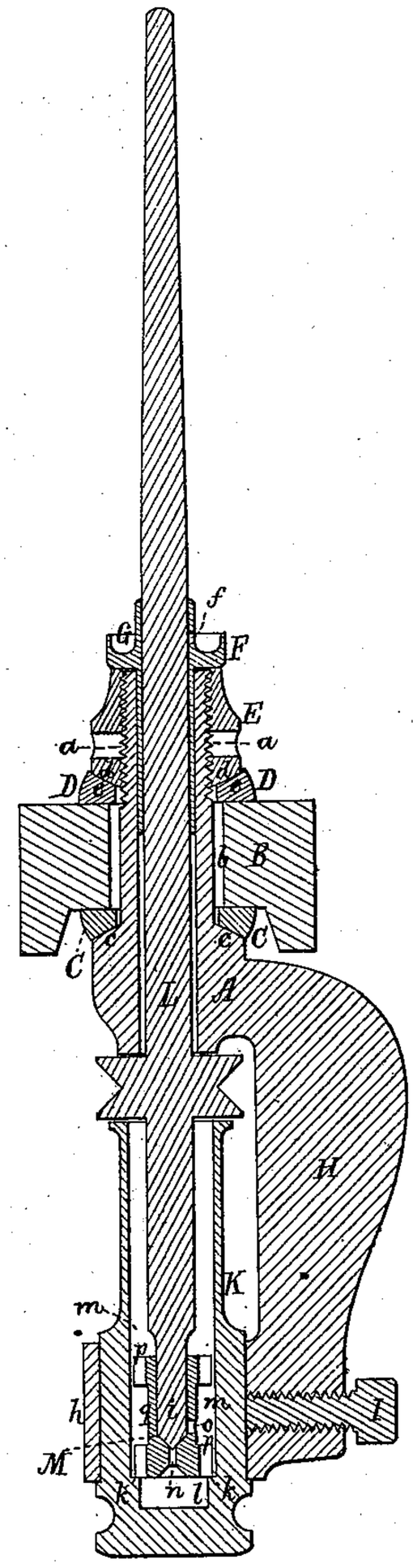

Fig. 5

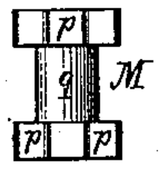

Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM MASON, OF TAUNTON, MASSACHUSETTS.

MECHANISM FOR SUPPORTING THE SPINDLES OF RING-SPINNING FRAMES.

SPECIFICATION forming part of Letters Patent No. 230,306, dated July 20, 1880.

Application filed May 5, 1879.

To all whom it may concern:

Be it known that I, WILLIAM MASON, of Taunton, of the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Mechanisms for Supporting the Spindles of Ring-Spinning Frames; and I do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, Fig. 2 a side view, and Fig. 3 a vertical section, of a spinning-frame spindle and its supports applied to a rail and containing my invention. Fig. 4 is a top view, and Fig. 5 is a side elevation, of the spindle-step.

My present invention relates to mechanism or devices combined with a spindle and its adjustable holder and means of adjustment thereof, essentially like such as are described in Letters Patent No. 155,382, granted to me September 29, 1874—that is to say, in carrying out my present invention I provide the spindle-bolster, furnished with a clamp-screw and nut, convex shoulder and collars having centering-surfaces, as represented, with a socketed arm to extend directly from it and to support an oil-reservoir applied thereto and to the spindle, and with respect to the whirl thereof, essentially as herein set forth, and as represented in the accompanying drawings.

The oil-reservoir is extended below, and forms a cellar or oil-cavity under a peculiarly-constructed skeleton-step. The bolster is also provided with an oil-reservoir attached to its top, as hereinafter explained.

In the drawings, A denotes the tubular spindle-bolster, provided with a male-screw, *a*. B is the rail for supporting such bolster, the hole *b* made in the said rail being for the reception of the bolster and having a diameter somewhat larger than that of the bolster. At its lower part the bolster has a convex shoulder, *c*, upon which rests a correspondingly concave collar or ring, C, which encircles the bolster and has a flat upper surface. Another such collar or ring, D, encompasses the bolster and rests with its flat side on the upper surface of the rail B. A nut, E, having a convex bottom, *d*, screws upon the screw *a*, and enters the concavity *e* of the collar D.

Extending within the upper part of the bore of the spindle-bolster is a loose-fitted bushing, F, constructed, as shown, with an oil-trough, G, which rests on the top of the bolster, and serves not only to support the bushing in place and cover the cavity between the nut and bolster formed by the screw-thread, but to hold oil for the lubrication of the spindle within the bore of the bushing, there being a small passage or educt, *f*, leading from the trough into the said bore.

From the lower part of the bolster an arm, H, projects, in manner as shown, and at its lower part is provided with a tubular socket, *h*. Furthermore, there is screwed into the arm a clamp-screw, I, to enter the bore of the socket. This socket and its clamp-screw are to support an oil-reservoir, K, formed as represented, it being arranged in the socket as shown.

The spindle L extends up through the bolster A and bushing F and down into the oil-reservoir, and has its foot *i* sustained in a step, M, arranged within such reservoir and resting on a ledge or shoulder at the top *k* of the oil cellar or cavity *l*, disposed below the oil-chamber *m* of said reservoir.

The step is constructed so as to allow the oil to flow freely from the chamber *m* into the cellar or cavity, and thence up through the bottom of the step into the spindle-foot bearing thereof, there being a hole, *n*, leading from the center of the bottom of the said bearing down through the step. There is also another hole or induct, *o*, leading laterally into the foot-bearing of the step.

The object of the lower hole is to insure the conical part of the foot of the spindle being properly lubricated, and by means of the spindle to create a circulation for oil through the step and oil-reservoir.

The step, as shown, to receive the foot of the spindle has notched heads *p p*, to fit to the reservoir and sustain the step in place. The body *q* of the step has a diameter less than that of the mouth of the oil cellar or cavity, whereby oil can flow down around the step and into the cellar or cavity.

I do not confine myself to this particular form of skeleton-step, as it may be made of any proper form that will allow the oil to flow on the outside of it freely down from the oil-chamber to the cellar and circulate upward

through the center of the step and around the spindle-foot to the chamber above, the said step to be also of such diameter that it will enter at the top of the reservoir and readily drop into its seat by its own gravity, and fall out when the reservoir is turned upside down. The fit, however, of both the step in the reservoir and the bushing in the bolster should be so close that the film of oil between the surfaces will fill the space and hold them steady.

The whirl of the spindle is shown as arranged between the top of the reservoir and the lower end of the bolster and close to both, the whirl thus serving as a cap for the mouth of the step-receiver and as a cover to the lower end of the bore of the bolster.

From the above it will be seen that the clamping-nut and screw of the bolster and its adjusting devices are arranged wholly above the rail, and that from such bolster is extended below the rail the arm that supports the oil-reservoir, carrying the spindle-foot step and, with the addition of the bushing of the bolster, forming in its entirety the spindle-holder. Such not only enables the spindle, with its bearings and oil-reservoir, to be moved or adjusted laterally horizontally, but to be more or le s inclined, in order to bring the spindle into due relation with the ring. Furthermore, the body of the spindle-bolster, with its shoulder and screw, oil-reservoir, and sustaining-arm arranged as set forth, in one piece of metal, is productive of advantage in other respects.

What I claim as my invention is as follows, viz:

1. The combination, with the spindle-bolster A, provided with the convex shoulder *c* and screw-thread *a*, of convex-bottomed nut E and adjusting plano-concave collars C D, arranged with each other and the rail B in the manner shown, and with the supporting-arm H extending down from the said bolster, and the oil-reservoir K, provided with the spindle-step M, and sustained by the said arm and by a screw, I, screwed therein, all being as represented, and arranged with the spindle and whirl, substantially as specified.

2. The bolster loose bushing having a reservoir or oil-cup, as described, in combination with the spindle-bolster A, provided with the convex shoulder *c* and screw-thread *a*, convex-bottomed nut E, and adjusting plano-concave collars C D, as set forth, and with the spindle L, the supporting-arm H, and the oil-reservoir K, such reservoir being provided with a supporting-step for the spindle and sustained by the arm H and a screw, I, and all being substantially as specified.

3. The combination of the cylindrical oil-reservoir and step-holder and its loosely-seated step, as described, with the arm H, bolster A, spindle L, and the means described for supporting the spindle and bolster and connecting them with the rail so that they may be adjustable relatively thereto, as specified.

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Witnesses:
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