No. 712,886. Patented Nov. 4, 1902.

J. & H. WRIGHT.

FLIER FOR SPINNING MACHINES.

(Application filed May 3, 1901.)

(No Model.)

Fig. 1

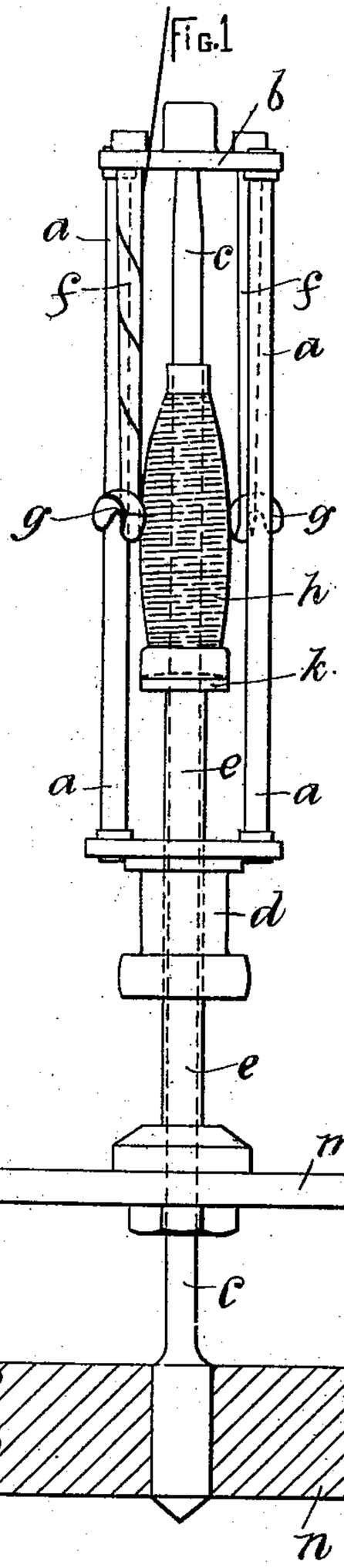


Fig. 4

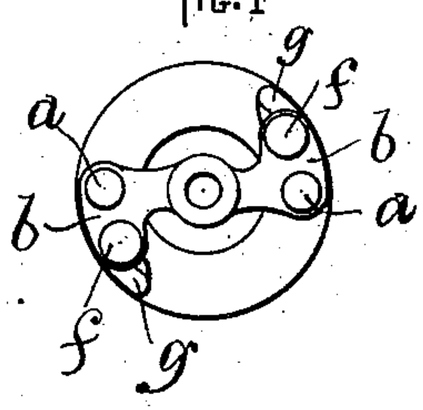


Fig. 3

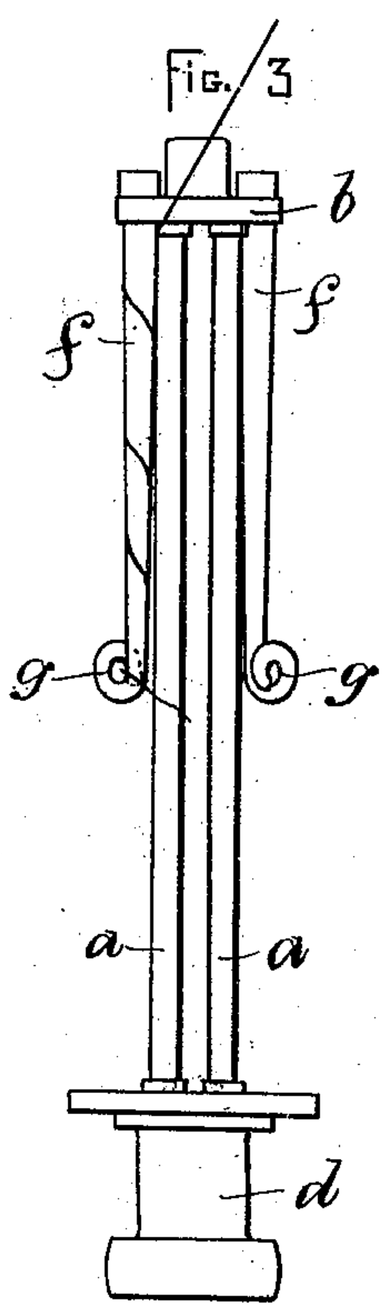
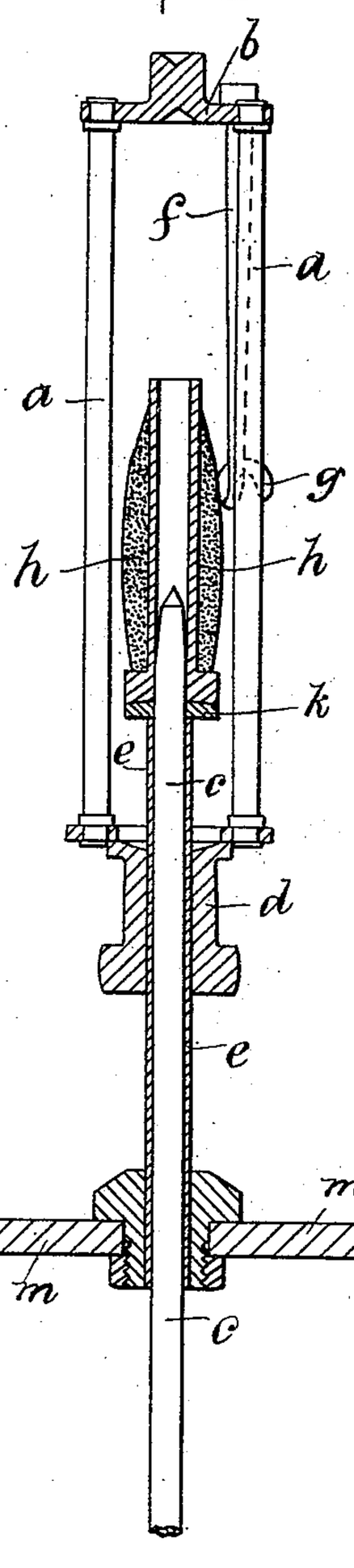


Fig. 2



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JAMES WRIGHT AND HEBDEN WRIGHT, OF INGROW, ENGLAND.

FLIER FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 712,886, dated November 4, 1902.

Application filed May 3, 1901. Serial No. 58,652. (No model.)

To all whom it may concern:

Be it known that we, JAMES WRIGHT and HEBDEN WRIGHT, subjects of the King of Great Britain, and residents of the Whins, Ingrow, near Keighley, in the county of York, England, have invented certain new and useful Improvements in Fliers for Spinning-Machines, of which the following is a specification.

In the production of yarns or threads of fibrous substances by machines of the continuous type and technically known under the name of "flier, ring and cap spinning, doubling and twisting machines" it is well known that the yarns or threads produced by the flier-frame are smoother and command a better price in the market than do those produced by either of the other two processes.

However, the disadvantage incident to the use of a flier-frame is that its rate of speed cannot, when constructed as heretofore be brought up to that of either of the other classes of spinning-frames without producing excessive vibrations, which interfere considerably with the continuity of the yarns or threads being produced and otherwise to the detriment of the machine.

To produce a flier that may be so constructed and supported that the rate of its rotary movements shall not to any appreciable extent interfere with its steadiness and yet afford by said construction means whereby the threads being produced may be conducted in their path of motion in exactly the same way and to have the same effect thereon as has the old and well-known type of flier already in existence is the object of our invention. To attain this object, we make use of the devices hereinafter described, and illustrated by the accompanying sheets of drawings, in which—

Figure 1 is a front elevation of a spinning-machine spindle on which is mounted our improved flier. Fig. 2 is a sectional elevation of parts illustrated by Fig. 1, but shows the flier raised on said spindle for the purpose of doffing. Fig. 3 is an elevation, and Fig. 4 a plan, of our improved flier.

Similar letters of reference indicate similar parts throughout the several views.

In carrying our invention into effect we form our flier to have upright rods *a* and a cross-piece *b* at the upper end thereof, whereby it may be supported to rotate upon the spindle *c*, while the whorl *d*, secured to said rods *a*, is held laterally by the sleeve *e*, which takes over the same spindle *c*. By these means the flier is supported or held at both its upper and lower ends, and may thus be driven at a high rate of speed without causing excessive vibrations. In order that the yarn or thread may be conducted to the bobbin *h* in a similar manner to that in ordinary flier-spinning, we secure two arms *f* to project downwardly from the plate or cross-piece *b* and to have curved ends *g* at their lower extremities. By these means the thread may be wound around one or other of the arms or legs *f* of the flier in its passage to the bobbin *h*, thus conducting it in the same manner and preventing its ballooning by the same means as in ordinary flier-spinning. Two of such arms *f* are employed so that one counterbalances the other, and thus avoids vibration.

The bobbin or tube is traversed vertically to "build" the yarn thereon or to effect the winding of said yarn or thread in proper relative positions thereon by means of the tube or sleeve *e*, carried by the ordinary lifter-rail *m*, which is operated in the well-known manner. A suitable drag is exercised in the bobbin *h* by means of the washer *k*, resting on the upper end of the tube *e*.

The spindles *c* may either be "dead" or held against rotation or may be driven by suitable means, in which latter case the drag on the bobbin is not so great as when a dead-spindle is used, and is therefore more suitable for the production of certain classes of yarn.

In order that the bobbins or caps may be readily doffed, they are raised to their highest position within the fliers by means of the lifter-rail *m* and tubes *e*.

Having thus described our invention, what we claim is—

1. In spinning and like machinery, a flier and a spindle therefor, one of said parts being movable longitudinally relatively to the other, said flier being supported at its upper and lower extremities by said spindle and having a leg or arm around which the thread

may be wound on its passage to the bobbin, said arm being connected to the flier only at its upper end and free at its lower end.

2. In spinning and like machinery, a flier and a spindle therefor, one of said parts being longitudinally movable relatively to the other, said flier being supported at its upper and lower extremities by said spindle and having a leg or arm around which the thread may be wound on its passage to the bobbin, said arm being connected to the flier only at its upper end and free at its lower end, and means for producing drag on the bobbin.

3. In spinning and like machinery, a flier and a spindle therefor, one of said parts being longitudinally movable relatively to the other, said flier being supported at its upper and lower extremities by said spindle and having a leg or arm around which the thread may be wound on its passage to the bobbin, said arm being connected to the flier only at its upper end and free at its lower end, and means for traversing said bobbin within the flier.

4. In spinning and like machinery, a flier and a spindle therefor, one of said parts being longitudinally movable relatively to the other, said flier being supported at its upper and lower extremities by said spindle and having a leg or arm around which the thread may be wound on its passage to the bobbin, and means whereby the doffing of the bobbin may be effected.

5. In spinning and like machinery, the combination with the spindle *c*, of the bobbin-supporting sleeve *e*, whorl *d*, rods *a a* rising from the whorl and having their upper ends connected by a cross-piece *b* adapted to rest on the top of the spindle, and thread-conducting arms *f* depending from the said cross-piece.

6. In spinning and like machinery, the combination with the spindle *c*, of the bobbin-supporting sleeve *e*, whorl *d*, rods *a*, *a* rising from the whorl and having their upper ends connected by a cross-piece *b* adapted to rest on the top of the spindle, and two thread-conducting arms *f* depending from the cross-piece and disposed oppositely to counterbalance each other.

In testimony whereof we have affixed our signatures in presence of two witnesses.

JAMES WRIGHT.
HEBDEN WRIGHT.

Witnesses:
I. N. CLARKSON,
THOS. WHITAKER.