

UNITED STATES PATENT OFFICE.

ELI SAMUEL REED, OF HILL CITY, TENNESSEE.

BALL-BEARING.

SPECIFICATION forming part of Letters Patent No. 653,184, dated July 3, 1900.

Application filed February 3, 1900. Serial No. 3,798. (No model.)

To all whom it may concern:

Be it known that I, ELI SAMUEL REED, a citizen of the United States, residing at Hill City, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Ball-Bearings, of which the following is a specification.

This invention relates to an improvement in ball-bearings so arranged and applied in connection with the shafts or other parts of the machinery that the speed of the latter may be increased and efficient action augmented; and the invention therefore consists, essentially, in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and claimed.

The drawing illustrates a vertical section of the ball-bearing.

Like letters of reference designate like parts in the figure of the drawing.

G designates the band-wheel, from which passes the belt that operates the sewing or other machine. The pitman H is driven by the treadle and is in turn directly connected to the crank I, which it actuates.

J designates a short shaft to which the gear-wheel K is keyed. This shaft J is supported horizontally in the casing D, which has its parallel vertical sides formed with enlargements D² D² to receive the shells L, which fit neatly therein, the same being rounded and cup-shaped and perforated concentrically, with openings in the casing sides, so that the shaft J may lie loosely therein. Observing now more particularly the shaft J, it will be seen that the right-hand end thereof is screw-threaded at g. On this end g is a nut g', screwed thereon and holding a series of balls between it and its ball-bearing shell L. Also on end g is a dust-cap M, the edge of which surrounds the edge of shell L and prevents the entrance of dust thereinto. Also there is a lock-nut g², which clamps the dust-cap firmly in place over the nut g'. It will be observed that the dust-cap M is reversely cup-

shaped from the shape of shell L. On the other end of shaft J is a sleeve g³, differing from the nut g' only in not being internally threaded. This sleeve g³ holds a circular series of balls between itself and the inverted shell L. Next to the sleeve g³ is another dust-cap M, and at this end of the shaft J is a pin R for attaching the hub of crank-arm I to the shaft J. Thus it will be seen that the shaft J is mounted in ball-bearings and is held securely in such a fashion that it will rotate very easily.

Parallel to shaft J is another shaft J', to which the pinion K' is keyed. Pinion K' meshes with gear-wheel K. J' is supported horizontally in the bosses D³ D³, formed on the sides of casing D. The ball-bearing for shaft J' is substantially the same as that for shaft J. On shaft J' is the band-wheel G. The end of the shaft J' is engaged by the center pin O, that passes through the table or other support and serves to steady the wheel G.

What I claim is—

The herein-described ball-bearing, comprising the shaft having the screw-threaded end g, nut g' screwed thereon, the shell L also on said end g, a series of balls between the nut g' and the shell L, the dust-cap M having its edge surrounding the edge of shell L so as to prevent the entrance of dust thereinto, a lock-nut g² clamping the dust-cap M firmly in place upon the nut g', the sleeve g³ located on the other end of the shaft, and having a smooth non-threaded interior, a shell L and dust-cap M likewise on said end of shaft J, together with a circular series of balls between sleeve g³ and shell M, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ELI SAMUEL REED.

Witnesses:

D. L. DUNCAN,
W. C. WESTER.