

G. DRAPER.
Spinning-Frames.

No. 134,864.

Patented Jan. 14, 1873.

Fig. 1.

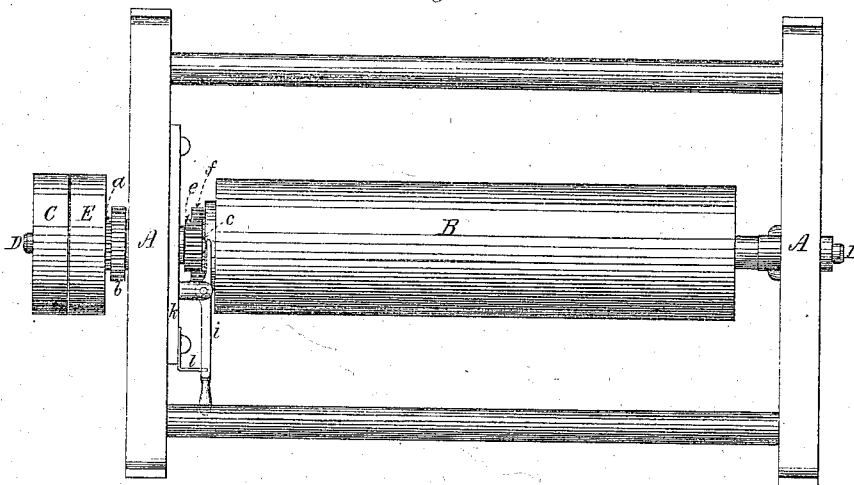
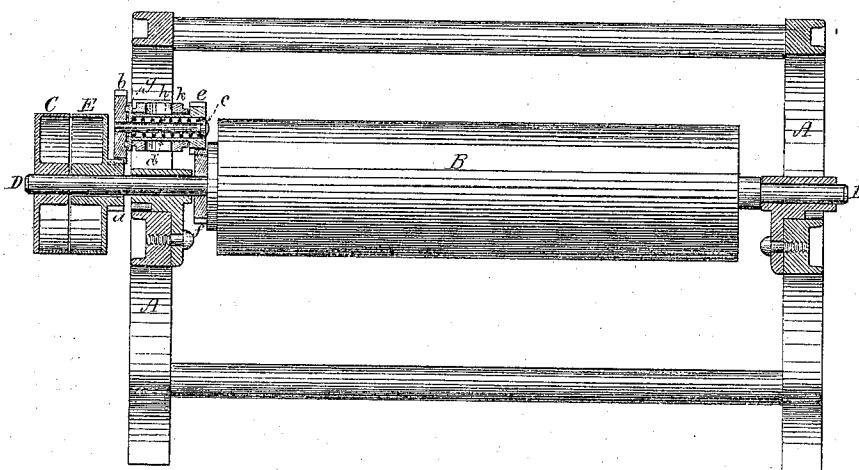


Fig. 2.



Witnesses.
S. W. Piper
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UNITED STATES PATENT OFFICE.

GEORGE DRAPER, OF HOPEDALE, MASSACHUSETTS.

IMPROVEMENT IN SPINNING-FRAMES.

Specification forming part of Letters Patent No. 134,864, dated January 14, 1873.

To all whom it may concern:

Be it known that I, GEORGE DRAPER, of Hopedale, of the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Machinery for Spinning Yarn; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 exhibits a top view of the driving-drum and fast and loose pulleys of a ring spinning-machine, with my improvement. Fig. 2 is a longitudinal section of the same.

In carrying out my invention, I combine, with the fast and loose pulleys and their spindle-driving drum of a spinning frame or machine, a mechanism substantially as hereinafter described, or its equivalent, for running the said driving-drum by the loose pulley and the common driving-belt at a rate of speed less than that obtained by running the said belt upon the fast pulley.

Spinning frame or machine spindles, particularly those of what are termed "ring frames," are now, in consequence of improvements recently made, run so rapidly or at such a high rate of speed that when first started, after doffing a large number of "ends" or yarns, are, or are liable to be, broken, and, as a necessary consequence, the "piecing up" is productive of large waste of material. In fact, it is probable that more waste is produced in the first few minutes after starting the spindles at the high speed than takes place during the remainder of the time of filling the bobbins.

By starting the frame or spindles at a slower rate than the normal rate of speed, and maintaining that for a short period, the breakage of yarn will be very much less.

After doffing, the spindles are to be started at the slower rate of speed, and as soon as, or immediately after, all "the ends are up," the driving-belt should be moved from the loose to the fast pulley.

In the drawing, A denotes the frame of the machine or a part thereof. B is the spindle-driving drum, having a fast pulley, C, fixed upon its shaft D, there being also a loose pulley, E, aside of the fast pulley, and on the said shaft. A spur-gear, *a*, is fastened to the inner side of the loose pulley concentrically

with the shaft, and engages with a larger gear, *b*, fixed on a shaft, *c*. The said shaft *c* is arranged over and parallel to the shaft D of the drum B, and is extended within a tubular shaft, *d*, having on its inner end a gear, *e*, to engage with a gear, *f*, fixed on the drum-shaft. There is a clutch, *g*, upon the outer end of the shaft *d* to engage with the gear *b* so as to couple it to the shaft *d*, as occasion may require. A helical spring, *h*, arranged in the shaft *d* and around the shaft *c*, serves to move the shaft *c* and the gear *b* in manner to clutch the gear with the shaft *d*. A lever, *i*, arranged as shown, and pivoted to the bracket *k* which supports the shaft *d*, bears against the inner end of the shaft *c*, and is to force the said shaft backward so as to effect the unclutching of the gear *b* with the shaft *d*. The gears *a*, *b*, *e*, and *f* are, or are to be, of such diameters as will cause the driving-belt, when in the loose pulley, and the gear *b* is in engagement with the shaft *d*, to drive the drum B at the required lower rate of speed, the higher rate being attained by the belt being run on the fast pulley. The lever *i*, in order to retain the gear *b* out of engagement with the shaft *d*, is to be pressed into a notch in an arm or projection, *l*, extended from the bracket.

I herein make no claim to the improvement in warpers, as described and claimed in Letters Patent No. 111,523, granted to me on December 7, 1870, my present invention having reference to machinery for spinning, and being much simplified with respect to the patented one.

I claim—

In combination with the fast and loose pulleys C E and the spindle-driving drum B of a machine for spinning yarn, mechanism substantially such as described, viz., the gears *a b e f*, clutch *g*, shafts *c d*, spring *h*, lever *i*, and notched projection *l*, combined and arranged as set forth, or its equivalent for running the driving-drum B at a rate of speed less than that obtained by the said belt when run upon the fast pulley.

GEORGE DRAPER.

Witnesses:

R. H. EDDY,
J. R. SNOW.