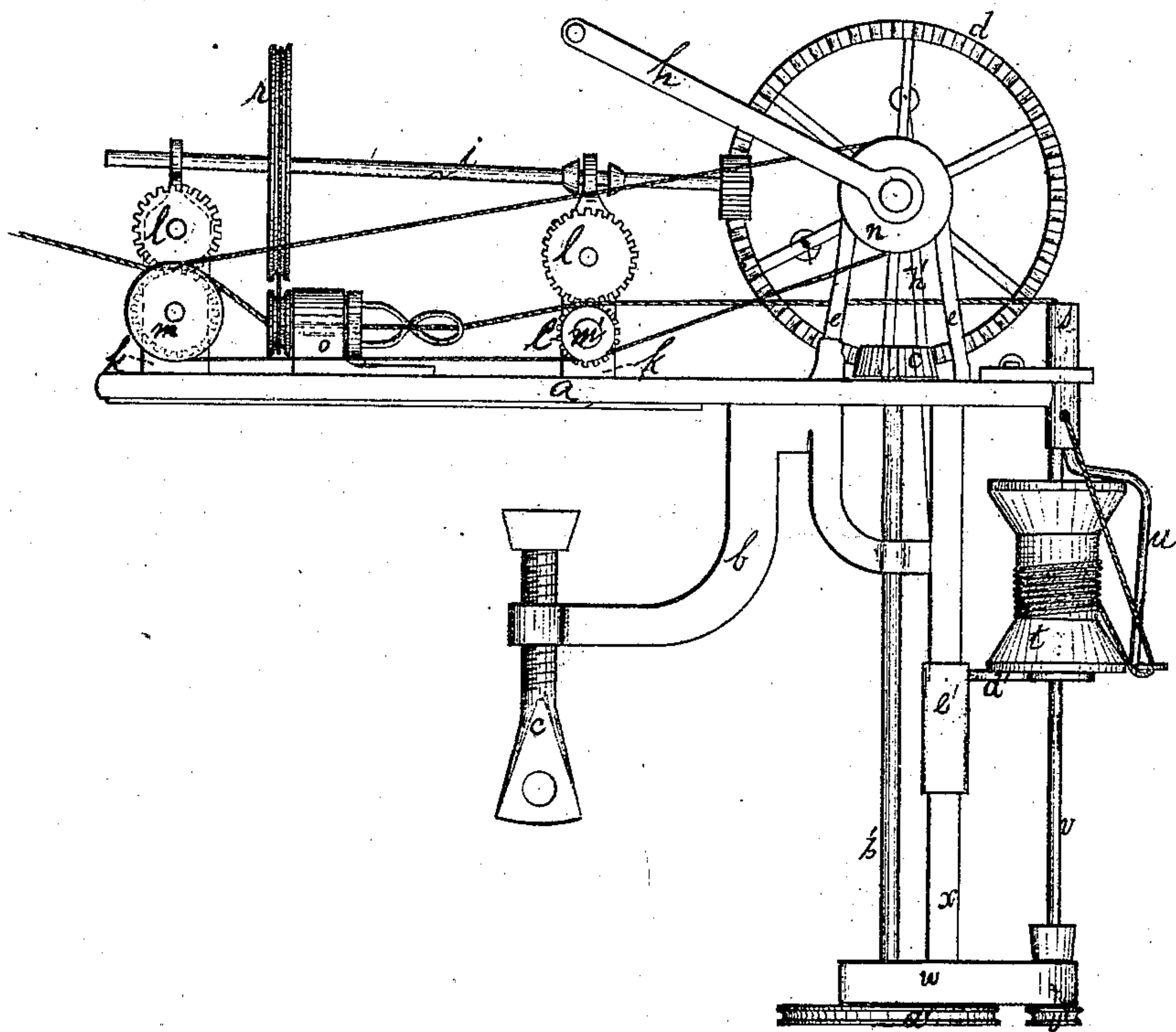


W. Duffner.

Spinning Mch.

No. 106,675.

Patented Aug. 23, 1870.



Witnesses.
C. O. Brown
M. E. Gorton

William Duffner, Inventor.
by Geo. E. Brown, Atty.

United States Patent Office.

WILLIAM DUFFNER, OF PETERSBURG, INDIANA.

Letters Patent No. 106,675, dated August 23, 1870.

IMPROVEMENT IN SPINNING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM DUFFNER, of Petersburg, in the State of Indiana, have invented a new and useful Improvement in Spinning-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and letters of reference marked thereon making a part of this specification, in which the figure is a side elevation.

This invention consists in the combination and arrangement of drawing-rolls, a twister, a flier, a spool, a main driving-wheel, a shaft, a pitman, and a sliding head provided with an arm, all as hereinafter more fully described.

To enable those skilled in the art to make and use my invention, I now proceed to describe its construction and operation.

Similar letters, in the drawing, refer to like parts.

In the drawing—

a is an oblong cast-metal plate.

b, a bent arm projecting downward from the plate *a*.

c, a vertical screw passing through the arm for the purpose of clamping the machine to a table.

d, a cog-gear mounted above the plate in standards *e*, extending upward from its upper side.

h, a crank for rotating the gear *d*.

i, a shaft parallel to the plate *a*, and placed above it, in standards *k k*, and connected by a pinion with the cog-gear *d*.

Each standard *k* sustains a pair of spur-wheels, *l l*, which receive motion from band-wheels *m m'* on the same shaft with the lower spur-wheels *l*, said wheels being joined by a belt with a wheel, *n*, on the shaft of the main cog-gear *d*.

A twister, *o*, is arranged between the two sets of spur-wheels, and is rotated by a belt passing around a wheel, *r*, on the shaft *i*. The machine first receives rolls between the set of spur-wheels nearest the end of the plate *a*, from which the rolls pass through the twister *o*, and thence between the next set of spur-wheels *l*.

The band-wheel *m'* of this set being smaller than the band-wheel *m* of the other set, and being rotated by the same belt, revolves faster, together with its spur-wheels, and consequently, the roll is drawn out into yarn while passing between the second pair of wheels *l*. Thence the yarn passes through a tube, *s*, and flier, *u*, to a spool, *t*, around which the flier revolves, and on which it lays the yarn.

The flier *u* projects from a vertical shaft, *v*, sustained in boxes, one at the end of the plate *a* and the other in an arm, *w*, of the standard *x*, which extends downward from the plate.

The shaft *v* is revolved by a band passing around the wheels *v'* and *a'* on the head of the vertical shaft *b'*, suitably supported on the opposite side of the standard *x*, and having a bevel-gear, *c'*, on its upper end, which meshes with the main cog-gear *d*.

The spool *t* is operated by an arm, *d'*, projecting horizontally from a head, *e'*, which slides on the standard *x*, being joined by a pitman, *h'*, with a crank-pin on the main cog-gear. Thus the spool is made to travel up and down while receiving the yarn, in order that the latter may be laid on it evenly.

Instead of the second pair of spur-wheels, *l*, I may choose to employ two rollers, one of which has a grooved rim and the other a rubber bead around its periphery, fitting the groove in the rim of the first, but leaving a sufficient opening for the yarn to pass through.

What I claim as new, and desire to secure by Letters Patent, is—

The combination of the drawing-rolls *l l*, twister *o*, flier *u*, and spool *t*, with the main driving-wheel *d*, shaft *i*, pitman *h'*, and sliding head *e'*, provided with the arm *d'*, when all these parts are constructed, arranged, and operated substantially as described.

WILLIAM DUFFNER.

Witnesses:

JASPER SCRAPER,

JOHN A. ^{his} × THOMAS.
mark.