

(No Model.)

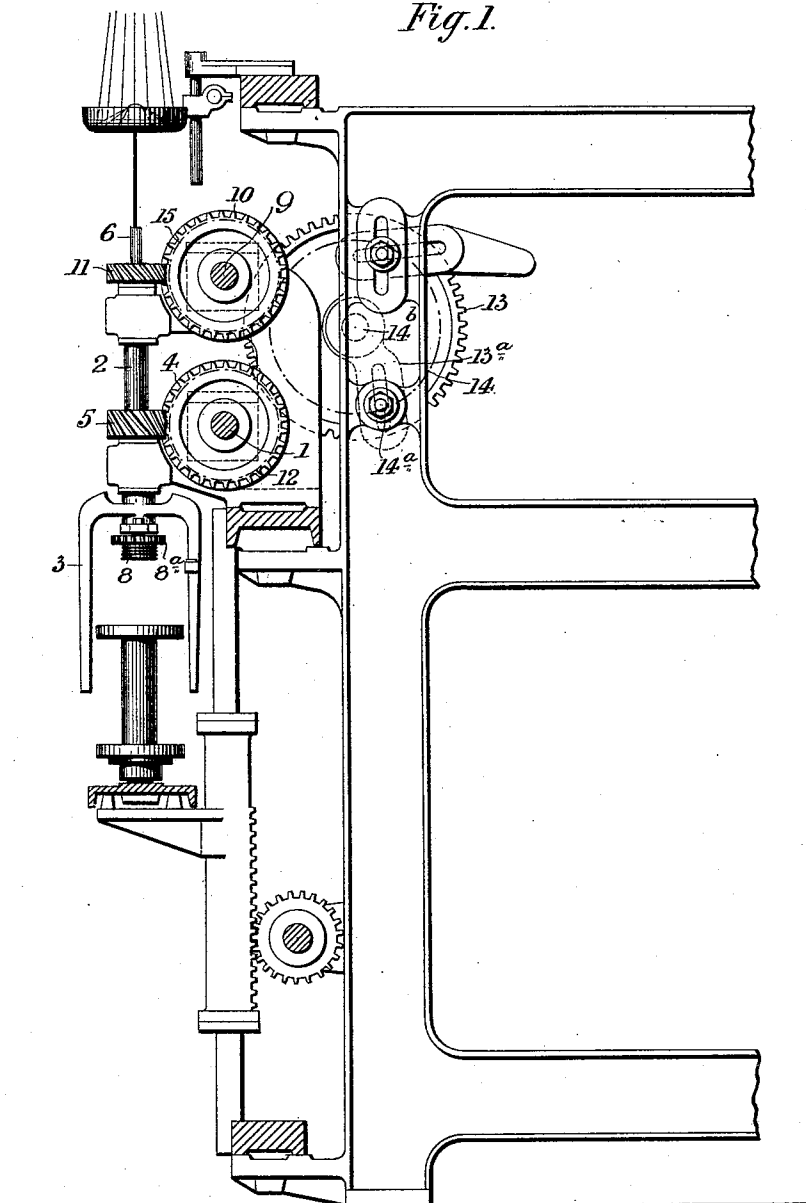
2 Sheets—Sheet 1.

A. COMBE.
TWISTING FRAME.

No. 482,164.

Patented Sept. 6, 1892.

Fig. 1.



Witnesses

John Bryson
John Hamilton

Inventor:

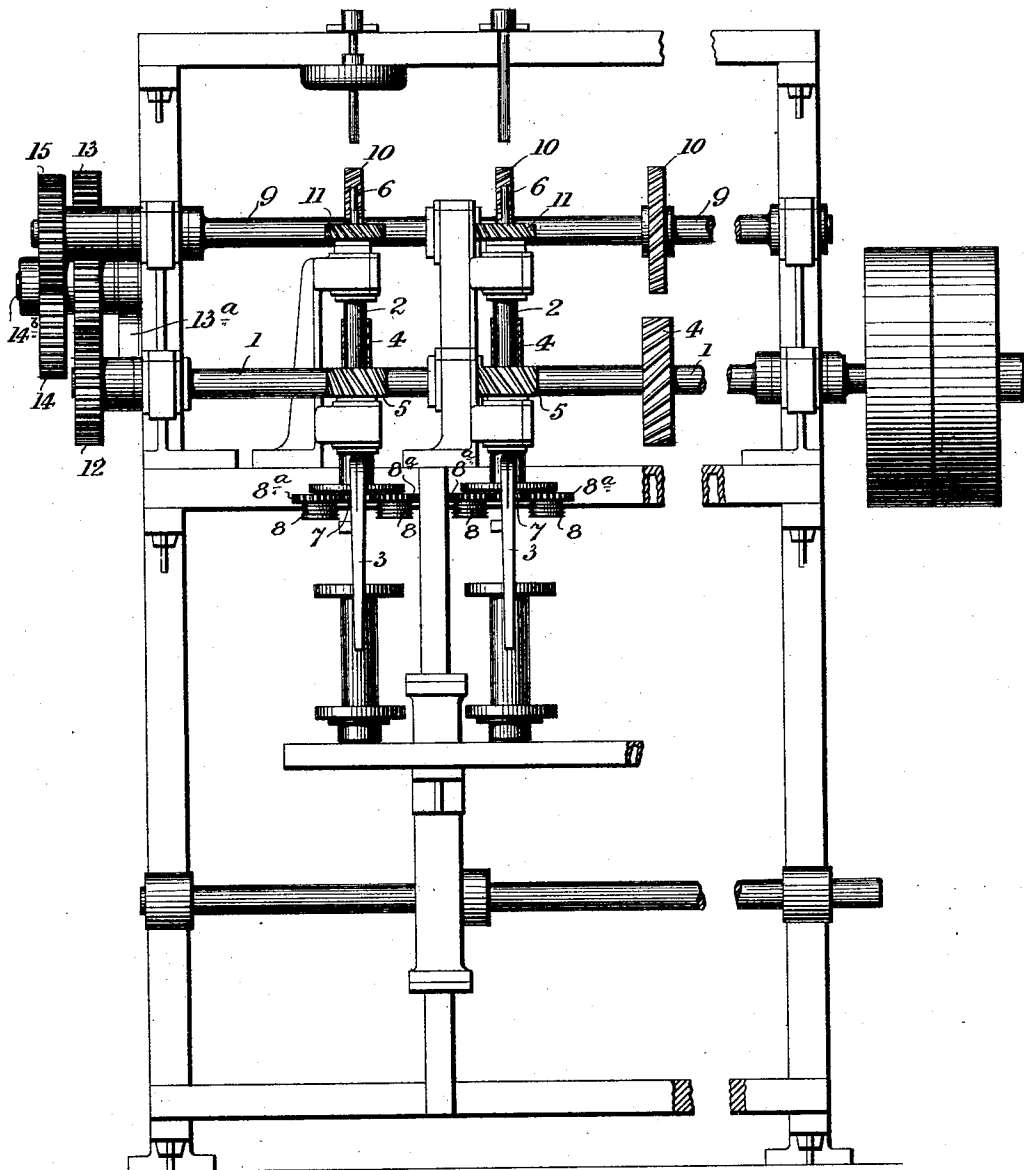
Abram Combe

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Fig. 2.



Witnesses.

John Bryson
John Hamilton

Inventor.

Abram Combe

UNITED STATES PATENT OFFICE.

ABRAM COMBE, OF BELFAST, IRELAND.

TWISTING-FRAME.

SPECIFICATION forming part of Letters Patent No. 482,164, dated September 6, 1892.

Application filed June 30, 1891. Serial No. 397,994. (No model.)

To all whom it may concern:

Be it known that I, ABRAM COMBE, a subject of Her Majesty the Queen of Great Britain, residing at Falls Foundry, Belfast, Ireland, have invented a certain new and useful Improvement in Twisting-Frames, of which the following is a specification.

My invention relates to the means for driving the fliers and haul-pulleys in twisting-frames, the improved arrangement hereinafter described being specially applicable and relating to that class of twisting-frames employed principally for twisting flax in which the several yarns or threads to be twisted together are passed over or through guides arranged around the center of the tube, through which the yarns are drawn by means of hauling-pulleys in the flier, as described in the specification of Letters Patent of Great Britain No. 8,018, of the year 1888, granted to me.

Figure 1 is an end elevation, partly in section, of so much of a twisting-frame as is necessary to illustrate the improved arrangements for driving the fliers and haul-pulleys; and Fig. 2 is a front elevation of a part of the machine.

The driving-shaft 1 of the machine extends the length thereof and is at right angles to the supporting-tubes 2, which carry the fliers 3, on said shaft 1 being placed worm or screw wheels 4 opposite to each flier 3, which wheels 4 gear with corresponding worm or screw wheels 5, which drive the fliers 3.

To drive the yarn-tubes 6, carrying the center wheels 7, Fig. 2, which drive the haul-pulleys 8 through gears 8^a 8^a, carried thereby, a shaft 9 is used parallel to the driving-shaft 1, having on it worm or screw wheels 10 opposite each tube 6, which gear with corresponding worm or screw wheels 11 on the tubes 6. This second shaft 9 is driven from the driving-shaft 1 by spur-gearing, a wheel 12 on the first driving-shaft 1 gearing into a stud-wheel 13 on shaft 14^b, secured to which is another wheel 14, gearing into a wheel 15 on the second shaft 9. The gear-wheels 13

and 14 are carried by a bracket 13^a, said bracket being slotted, as shown in Fig. 1, and held to the frame by a bolt 14^a. By this means the position of the bracket may be altered to enable larger or smaller gear-wheels to be placed upon the stud 14^b, carried by said bracket. The bracket may be adjusted either longitudinally or laterally by reason of the slotted formation described. By these means the relative speeds of the flier 3 and of the haul-pulleys 8 are made "positive," and as any of the four spur-wheels 12 13 14 15, which connect the driving-shaft 1 with the second shaft 9, which drives the center tubes 6, can be used as change-wheels the relative speeds of the shafts 1 and 9 can be altered and adjusted according to requirements to a nicety, and the amount of twist imparted to the thread can consequently be varied with facility and certainty.

What I claim is—

In a twisting-frame, and in combination, a main shaft carrying worm-wheels, supporting-tubes, fliers carried thereby, worm-wheels on said tubes gearing with the worms on the main shaft, a second shaft carrying worm-wheels, yarn-tubes carrying worm-wheels gearing with the worms on the second shaft, haul-pulleys driven by gearing from said yarn-tubes, and the means for communicating the motion from the shaft 1 to the shaft 9, including the gear-wheels 13 14 on the short shaft 14^b, gearing, respectively, with the gears on the shafts 1 and 9, and the bracket 14^a, carrying said shaft 14^b, said bracket being slotted and adjustable longitudinally and laterally on its holding-bolt, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ABRAM COMBE.

Witnesses:

JNO. BRYSON,
JOHN HAMILTON.