2 Sheets—Sheet 1.

W. ROUSE.

COP SPINNING.

No. 7,759. Patented Nov. 5, 1850.

Fig. 1.

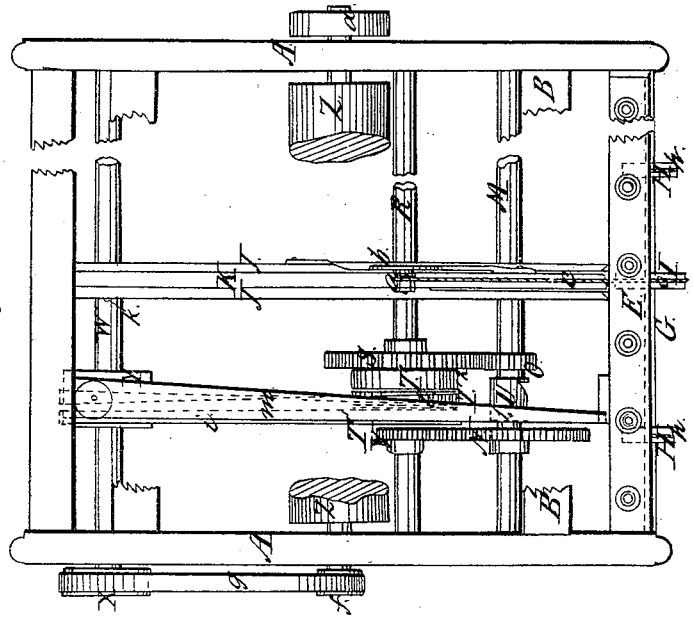
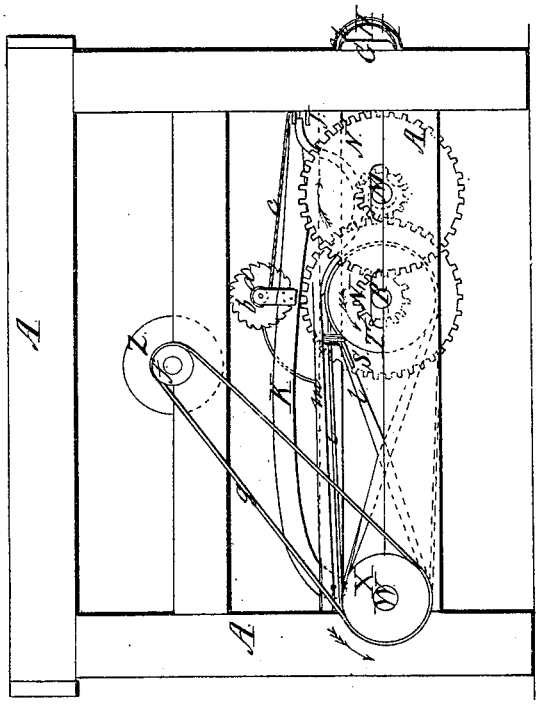


Fig. 2



2 Sheets—Sheet 2.

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Fig: 4.

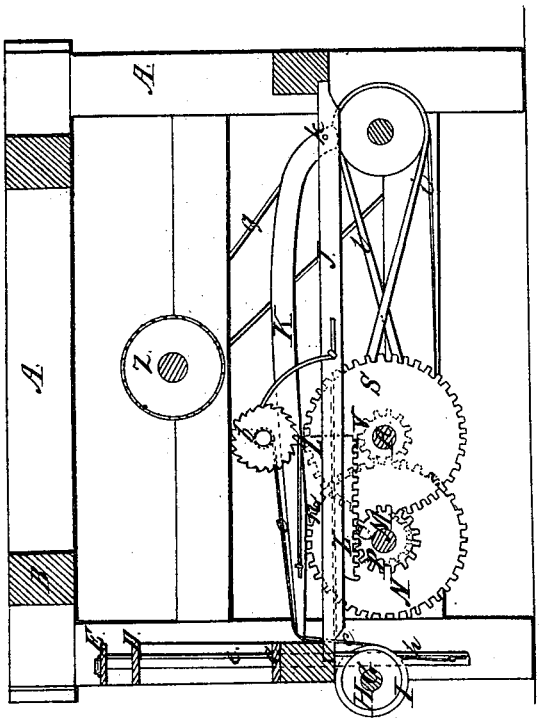
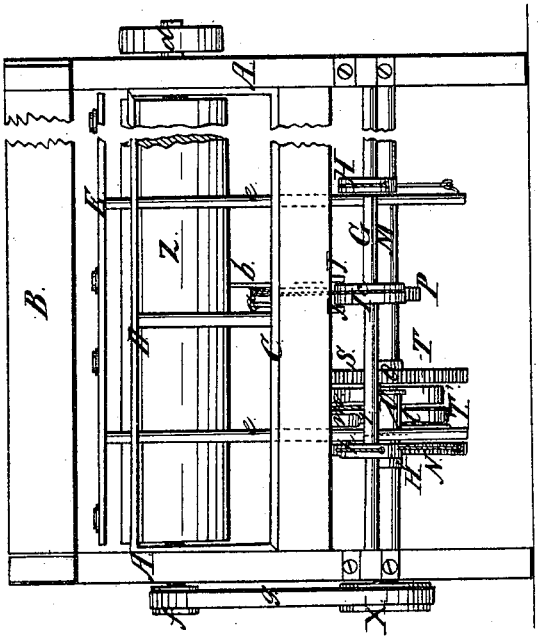


Fig: 5.

Fig: 3.



UNITED STATES PATENT OFFICE.

WANTON ROUSE, OF TAUNTON, MASSACHUSETTS

IMPROVEMENT IN OPERATING THE COPPING-RAILS OF COP-SPINNERS.

Specification forming part of Letters Patent No. 7,759, dated November 5, 1850.

To all whom it may concern:

Be it known that I, WANTON ROUSE, of Taunton, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Machinery used in Spinning-Frames for Building Cops; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan of part of a spinning-frame having my improvements attached. Fig. 2 is an end view of the frame. Fig. 3 is a front view. Fig. 4 is a transverse vertical section taken in a direction looking from the opposite end to that shown in Fig. 2. Fig. 5 is a perspective view of the cam for shifting the bands detached from the machinery.

Similar letters of reference in the several figures indicate corresponding parts.

The nature of my invention consists in a new and improved mode of operating and changing the speed of the upward and downward motions of the ring-rail for governing the winding of the thread in forming the cops.

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

A A is the frame. B is the roller-beam. C is the step-rail on which the spindles are supported. D is the spindle-box. E is the ring-rail. *e e* are its lifting-rods, which pass through guides on the step-rail and frame.

G is a shaft resting in bearings in front of the frame and extending all along it. It carries pulleys H H, which have chains or bands *h h* securely attached at one end to their peripheries and passing over or around them, the said chains or bands being attached at their other ends to the lower ends of the rods *e e*. (See Fig. 4.) The shaft G also carries another pulley, I, of larger diameter than H H.

J J are two parallel bars running across the frame from back to front.

K is a lever, having its fulcrum *k*, which is at the back end, in the said bars J J. It reaches to the front of the frame and its end works in guides. It carries near the middle a roller or barrel, *a*, which has its axis mounted in suitable bearings, and has a ratchet-wheel, *b*, attached to it. A chain or band, *c*, is attached by one end to the roller or barrel *a*, and passes along the upper side of the lever K and over its front end. The other end of this chain or band passes under and around the pulley I on the shaft G, and it is secured to its periphery. (See Fig. 4.)

L is a wedge or block of metal, inclined on its upper side and having teeth or cogs on its lower side. It is fitted between the bars J J in such a manner as to slide freely between them, being kept by guides in a horizontal line. The lever K has a projection, *a*, on its under side, (best seen in Fig. 4,) which always rests on the inclined or upper side of the wedge L.

M is a shaft hung in suitable bearings near the front of the frame. It carries a toothed wheel, N, a small toothed wheel, P, and a pinion, O, all fast on its axis. The toothed wheel P gears with the teeth on the wedge L. It also carries a scroll-cam, V, the form of which is best seen in Fig. 5, and is also seen in Figs. 1 and 3.

R is a shaft hung behind the shaft M, and having the toothed wheel S, equal in size to N, fast upon its axis, said wheel gearing with the pinion O. The said shaft also carries the pulley T, which is also fast on its axis, close to the wheel S. It also carries the pinion V, gearing with the wheel N and the pulley T. The last-mentioned pinion and wheel are secured together, but are loose upon the shaft. A loose pulley, T^2, is also hung upon the shaft R, between the pulleys T and T′.

W is a shaft hung in suitable bearings at the back part of the frame. It carries the pulley X and the broad pulley Y.

Z is the cylinder, carrying on its axis the first driving-pulley, *d*, and the pulley *f*.

g is a band from the pulley *f* to the pulley X. *i* is a straight band from the pulley Y on the shaft W to the pulley T′ on the shaft R, and *l* is a crossed band from the same pulley Y to the loose pulley T^2.

m is a belt-shipper, which is a lever having its fulcrum at the back of the frame. It is bent down so as nearly to touch the cam V on the shaft M, and has a pin, 1, projecting from the lower side, which bears on the said cam. Its front end slides in a guide attached to one of the front rails of the frame.

The operation is as follows: Rotary motion

is given to the cylinder-shaft, and through the band *g* is communicated by the pulley *f* to that X on the shaft W. The band *i* gives motion to the pulley T^2 in the direction of the arrow shown upon it, (see Fig. 2,) and the toothed pinion V, being fast to it, it (T^2) gives motion to the wheel N, shaft M, and wheel P. The wheel P, gearing in the teeth of the wedge L, draws it forward and raises the front end of the lever K. This drawing up the chain or band *c* gives part of a revolution to the shaft G. The wheels H H, winding the bands *h h* on their peripheries, raise the lifting-rods *e e*, causing the ring-rail E to be elevated at a very gradual or slow speed. The spindles rotating at a great velocity, the thread will be guided so as to be wound round the cop in nearly horizontal coils. At the time the rail reaches its highest position the shaft M will have revolved so as to cause the cam V to lead the pin 1 on the belt-shipper *m* across its face and lead the belt *i* to the loose pulley T′ and the crossed belt *l* to the pulley T, which will cause the shaft M to rotate in the opposite direction to that described, and at a greatly-increased speed. The wheel P will lead back the wedge L and the lever K will fall, leaving the bands *c* and *h* to be free and allowing the ring-rail to descend quickly, leading down the thread so as to form a bind-thread on the cop.

The band *c* may be tightened, when necessary, by turning the roller *d*, the ratchet *b* being prevented from returning by means of pawls taking into the teeth.

The motion of the gearing may be reversed by means of a clutch-box, by friction-pulleys, or by a ratchet-wheel or other device, if considered preferable to belts and pulleys.

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

Changing the direction in which the ring-rail is moved and the speed at which it is operated, for the purpose of governing the winding of the thread on the cop and forming a bind-thread, by means of the combination of the shaft M, having a toothed wheel, N, and smaller wheel O fast upon its axis, with the shaft R, having on it a fast toothed wheel, S, and a loose smaller wheel or pinion, V, operated by shifting-belts and pulleys or other similar changing or reversing gear.

WANTON ROUSE.

Witnesses:
BENJ. R. DEAN,
FRANCIS B. DEAN.