

J. & T. Walmsley.

Machine for Winding and Beaming Yarn.

N^o 108,856.

Patented Nov. 1, 1870.

Fig. 4.

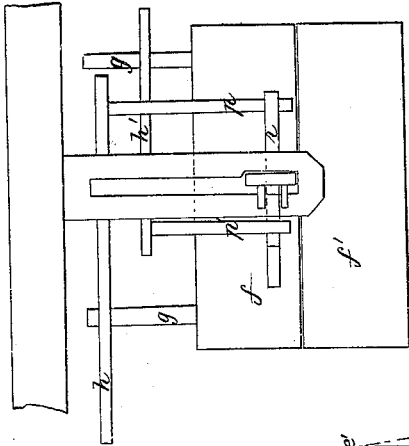


Fig. 6.

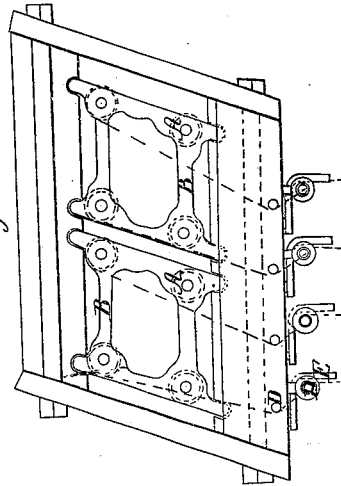
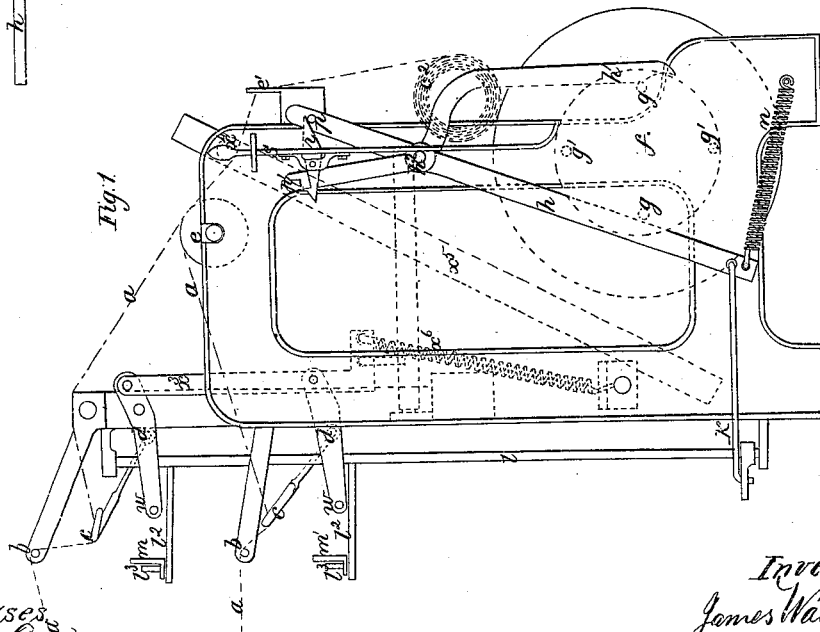


Fig. 1.



Witnesses
William C. Con
John Pearson

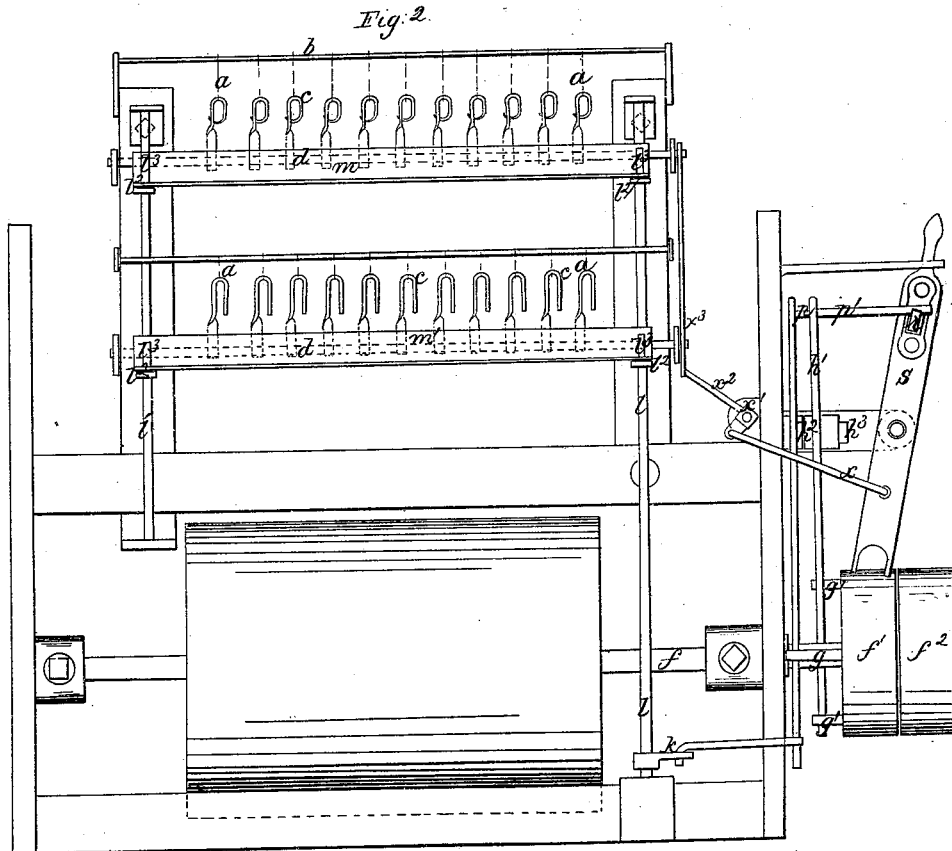
Inventors
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Sheet 3-3, Sheet 5.

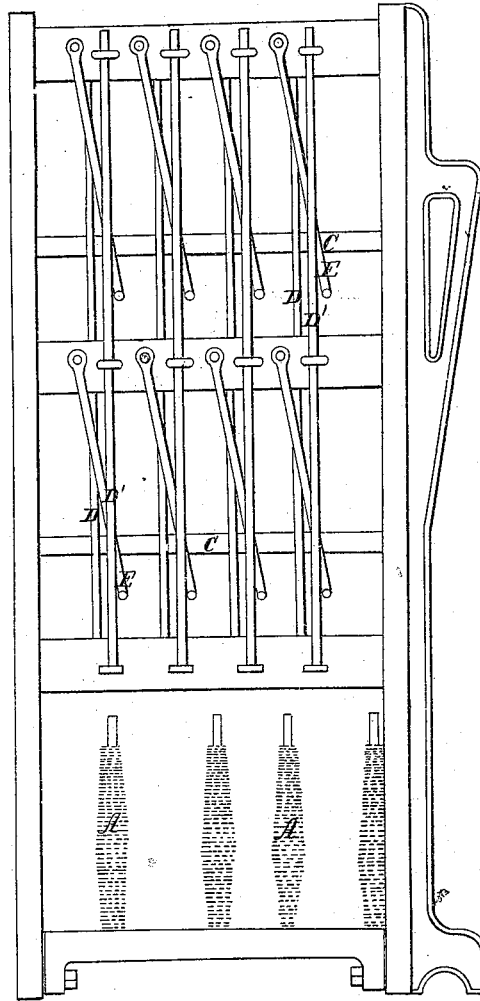
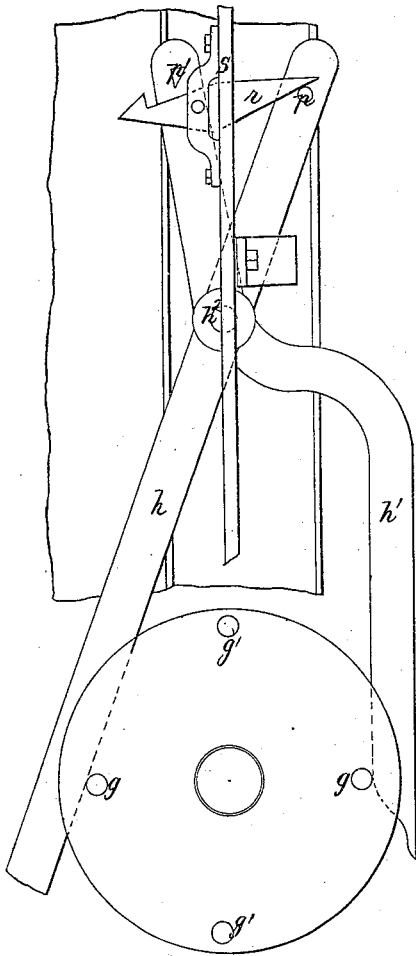
J. & T. Walmsley.

Machine for Winding and Beaming Yarn.

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Fig. 3.

Patented Nov. 1, 1870.

Fig. 5.



Witnesses.
William Owen
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United States Patent Office.

JAMES WALMSLEY AND THOMAS WALMSLEY, OF BLACKBURN, GREAT
BRITAIN.

Letters Patent No. 108,856, dated November 1, 1870.

IMPROVEMENT IN WARPING-MACHINES.

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

To all to whom these presents shall come:

Be it known that we, JAMES WALMSLEY and THOMAS WALMSLEY, of Blackburn, in the county of Lancaster, Kingdom of Great Britain and Ireland, have invented certain Improvements in Machinery or Apparatus for Warping and Beaming Yarn; and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known, and of the usual manner of making, modifying, and using the same.

The object of our said invention for certain improvements in machinery or apparatus for warping yarn is, by the application and use of apparatus hereinafter described and shown by drawing, to arrest the motion of such machinery when a thread breaks or when the yarn is warped or wound off one or more bobbins, or from the cops as the latter may be used in connection with this machine, and thus avoid or dispense with the cost and labor of winding from the spool to the bobbin, as heretofore practiced.

Description of the Drawing.

At Figure 1, sheet 1, is shown end view of machine constructed according to our invention, and

Figure 2, a front view.

a a is the yarn or threads passed over and supported by the rods b b , thence through the eye of the hooks c , which are hinged or work loosely on the rod d , over the roller e , through the reed e' to the yarn-beam e'' .

On the shaft f are the fast-and-loose driving-pulleys f^1 f^2 .

Fixed to the rim or arms of the fast pulley f^1 are four pins or studs, two of these, g g , are longer, and placed, as shown, a little nearer the center of the pulley than the other two, g^1 g^2 .

As the pulley revolves the pins g g come in contact with and force apart the levers h h^1 , working on the stud h^2 , the upper ends of these levers being in like manner separated or removed further apart from each other.

The motion of the lever h is, by means of the link and crank k , transmitted to the vertical rod l , on which and a like rod, l^1 , on the other side of the machine, are arms l^2 with pins l^3 , on which arms the cross-rails m m' rest.

These rails are, by the motion of the vertical rods l l^1 , brought parallel with and immediately in front of the hooks c .

When the stud h^2 passes the horizontal or central line, the lower end of the lever h will, by gravitation, or by means of the spiral spring n , close the link and

crank k , imparting a partial rotation to the vertical rod l , and a lateral or sidewise motion to the rails m m' .

The upper end of the lever h will also close, and the pin p thereon will tilt or raise one end of the catch r , working on a pin attached to the spring-stop handle s , (see Figure 3, sheet 2,) clear of the pin p' on the upper end of the lever h^1 , which lever and pin is, by the action of the studs g^1 g^1 , caused to move outward or further apart from the lever h ; so long as the yarn continues perfect, the motions above described are repeated each half-revolution of the driving-shaft, or as often as the studs g g act on the lever h and the studs g^1 g^1 act on the lever h^1 .

When a thread breaks, the hook c , through which it was passed, at once falls on the rod w , and prevents the lateral motion of the rail m and partial rotation of the vertical rod l ; the lever h being thus held stationary, prevents the pin p , on the upper end thereof, tilting or raising the catch; the stud g^1 will move or push out the lever h^1 ; the pin p' , on the other end thereof, taking the catch r and drawing it and the spring-handles out of its notch, transfers the strap from the fast to the loose pulley, at the same time the rod w raises the hook c clear of the rail m , and the motion of the machine is arrested.

When the broken end is tied up and the machine started again, by the attendant forcing the spring-handle into the position shown at fig. 2, the link x moves the rocking-bar x^1 , (supported at each end by brackets,) and by means of the pin x^2 , the upright x^3 is raised, causing the arms x^4 x^4 to move on the studs x^5 , and the rods w are lowered to the position shown at fig. 1.

When a thread breaks, the action of the handle s , link x , rocking-bar x^1 , and finger x^2 , together with the spiral spring x^5 , fig. 1, raises the said rods w , on which the hook c of the broken thread rests.

x^4 is the faller or drop-rod, for maintaining the necessary tension on the yarn when the machine is stopped.

x^5 are the guides for the rod.

Figures 5 and 6 are elevation and plan views of part of a creel for warping from the cops.

A A are cop-skewers, arranged in the movable frames B, the yarn from which is passed over the rods C C, and through or around the bars D D', as shown.

E is a swing-rod, resting on or against the yarn so as to maintain the necessary degree of tension.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The link x , rocking-bar x^1 , finger x^2 , and spiral

spring x^6 , in combination for actuating the rods $w w$, substantially as hereinbefore described and represented in the accompanying drawing.

2. The arrangement and combination of the movable frames B and the bars D D' and the swing or tension-rod E, so as to warp from the cop direct, substantially as hereinbefore described and represented in the accompanying drawing.

In testimony whereof, we, the said JAMES WALMSLEY and THOMAS WALMSLEY, have hereto set our

hands and affixed our seals this 30th day of October, 1869.

JAMES WALMSLEY. [L. S.]
THOMAS WALMSLEY. [L. S.]

Witnesses:

WILLIAM DEAN,
Book-keeper, Blackburn.

JOHN PEARSON,
Book-keeper, Blackburn.