

H. MACON.

Improvement in Belt-Shipping Devices for Self-Acting Mules.

No. 114,310.

Patented May 2, 1871.

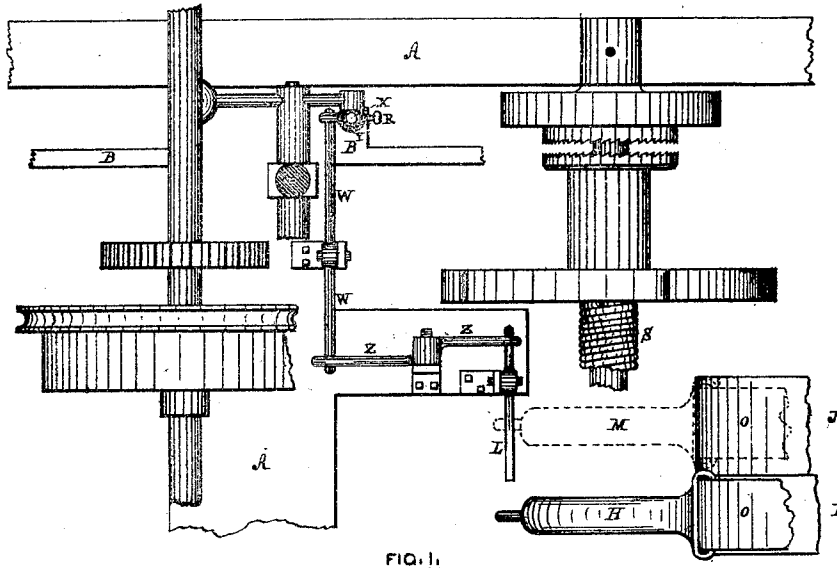


FIG. 1.

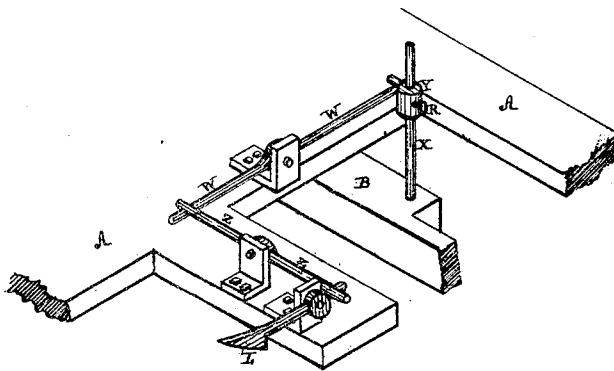


FIG. 2.

WITNESSES,

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HEZEKIAH MACON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO
JOSHUA HUNT, OF SAME PLACE.

Letters Patent No. 114,310, dated May 2, 1871.

IMPROVEMENT IN BELT-SHIPPING DEVICES FOR SELF-ACTING MULES.

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

I, HEZEKIAH MACON, of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful "Device for Shifting the Driving-Belt upon Spinning-Mules," of which the following is a specification.

In the accompanying drawing which makes a part of this specification—

Figure 1 shows my device attached to the frame of a mule-head when looking down upon the same.

Figure 2 is a perspective view of my device.

My invention consists of a series of levers, to the last of which is attached a latch, which shuts over the belt-guide. The first is operated by a spindle resting upon the "long lever," a well-known part of the mule. Around the spindle is a ring, held by a set-screw, and projecting from one side is an arm, which rests upon the end of the first lever.

A, frame of the mule-head.

B, the long lever.

S, the spring coiled about the cam-shaft.

X, the spindle resting upon the long lever.

Y, the ring, with projecting arm, which can be adjusted upon the spindle X.

R, the set-screw in the ring.

W, the first lever.

Z, the second lever.

L, the last lever, with latch attachment.

H, the belt-guide, which assumes the position shown by dotted lines M.

O, the driving-belt.

I and J, the pulleys.

It is well known how the direction of the carriage of a mule is changed by a cam throwing the belt from one pulley to another, and the locking and unlocking of the clutches.

It is also so well known that I need not state in detail that the carriage operates upon the long lever, and this works a cam, by which, as well as the spring coiled about the shaft, the belt-guide is moved toward the pulley; that the belt is carried slowly upon the pulley, which is not driven by the belt till it has slipped on to near the center of the pulley. This little time thus required for the belt to pass upon the pulley has caused a certain relaxed motion of the mule, and consequent loss of tension upon the threads. The result

of this loss of tension has been a "ragged-nosed cop" and unevenly spun threads, to obviate which my invention as above described has been made.

It works thus: I retain all the parts which have been formerly employed to change the belt, and add my devices. By the usual modes employed the belt is carried by the guide upon the pulley J, the guide H compressing the spring S. The guide H, as it slides along, is caught by the latch L, and it, and the spring in tension, are held firmly until the latch-lever is raised. As the carriage comes toward the head it presses upon the long lever B, to which is attached the spindle X, which is drawn down. The spindle draws down the lever W, and this acts through lever Z upon the latch-lever L, which is raised, letting go the guide H, which, by force of the spring S, carries almost instantaneously the belt upon the pulley I. The same operation is repeated as before, the guide is again caught and held by the latch-lever L, and, by the same means, again freed.

By this instantaneous change of the belt, perfect, or almost so, tension is produced and preserved. The quality of evenness is thus given to the thread throughout its whole length, and that at the nose of the cop is as smoothly and evenly wound as that at the bottom. The quantity of thread spun in a given time is also greatly increased.

The ring Y, around the spindle X, is held by a set-screw, and can be raised or lowered, thus governing, to a certain extent, the action of the long lever upon my system of levers, and by which, also, the tension is preserved as the thread is being wound about the nose of the cop.

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

The combination, with the long lever B, of the spindle X provided with the adjustable ring and arm Y, the levers W Z, latch-lever L, belt-guide H, and spring S, all arranged and operating as described to instantaneously shift the driving-belt, as and for the purpose specified.

HEZEKIAH MACON.

Witnesses:

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