L. J. Knowles.

Stop Motion.

No. 86,417. Patented Feb. 2, 1869.

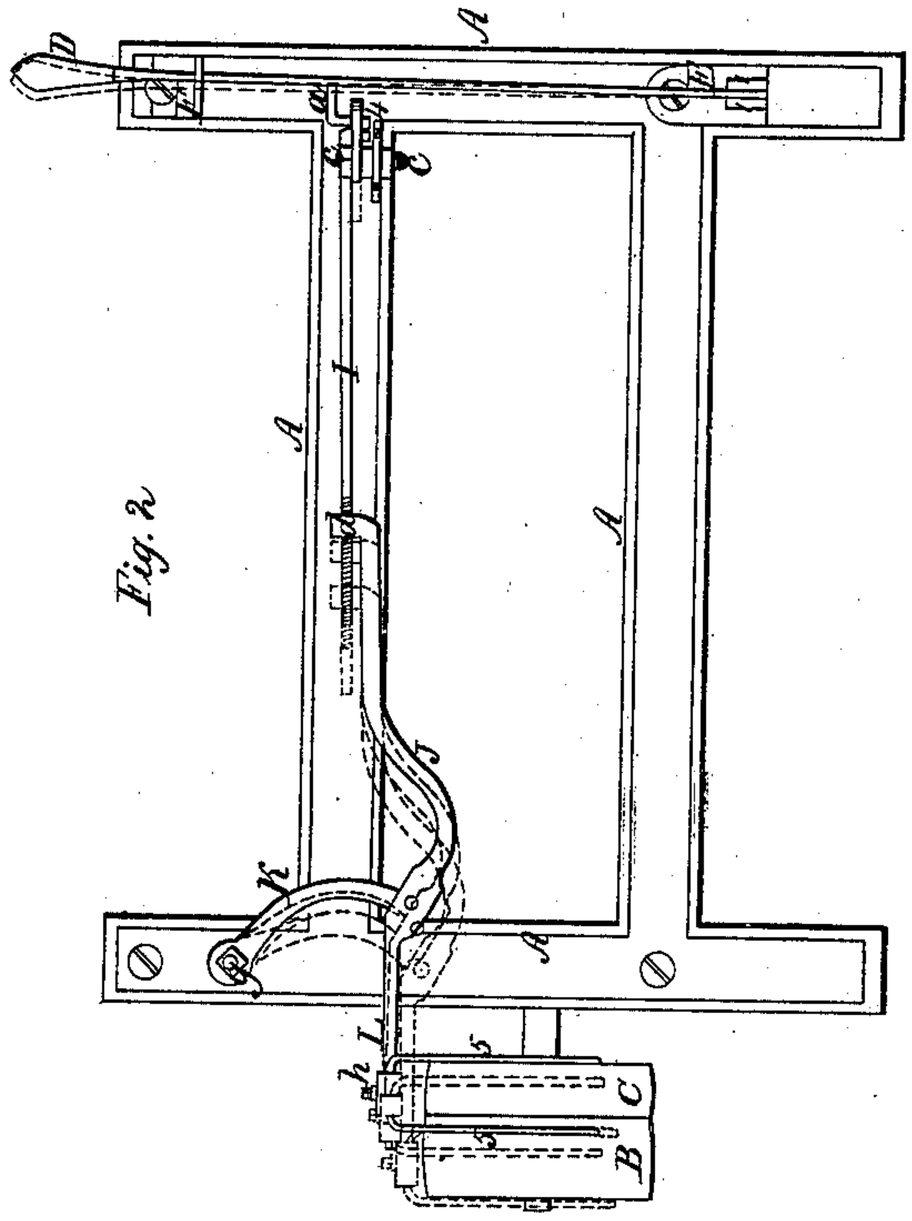

Fig. 2

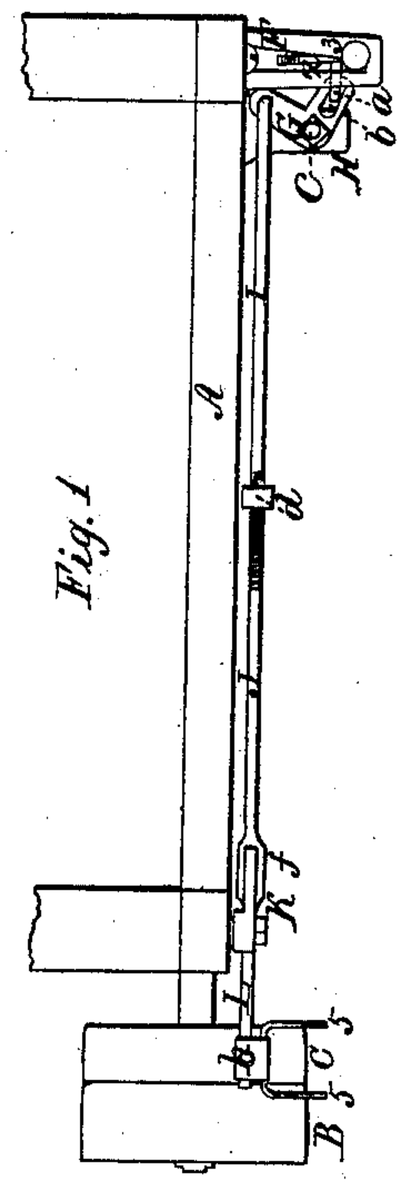

Fig. 1

Witnesses

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LUCIUS J. KNOWLES, OF WARREN, MASSACHUSETTS.

Letters Patent No. 86,417, *dated February* 2, 1869.

IMPROVEMENT IN BELT-SHIPPING MECHANISM FOR LOOMS.

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

Know all men by these presents:

That I, LUCIUS J. KNOWLES, of Warren, in the county of Worcester, and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Shipper-Devices for Power-Looms; 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 represents a top or plan view of so much of a loom as is necessary to illustrate my present invention, and

Figure 2 represents a side view of the same.

To enable those skilled in the art to which my invention belongs, to make and use the same, I will proceed to describe it more in detail.

The nature of my invention consists in the peculiar manner of constructing and arranging the mechanism by which the belt is moved to or from the tight pulley, whereby the weight of the shipping-mechanism aids in starting the belt from the tight pulley, as will be hereafter explained.

In the drawings—

A represents the side of the loom-frame;

B, the loose pulley; and

C, the tight pulley, which is to be secured to the driving-shaft in any of the ordinary modes, and the shaft may also be made and combined with any of the ordinary modes of gearing; but as these last-named devices do not constitute any part of my present invention, they are not fully shown, nor will they be further described.

The shipper-handle D is pivoted or hinged at the bottom, between ears 1–1, on the stand E, which is fastened to the side of the frame.

The upper end of handle D is supported and works in a slot, 2, made in the stand F, which is fastened to the side of the main frame.

A notch, 3, is cut or formed in the stand F, to one side of the slot 2, and into which notch the upper end of the shipper-handle D springs when the shipper-device is moved to bring the belt upon the tight pulley C. (See the position of the device as shown in dark lines, figs. 1 and 2.)

From one side of the shipper-handle D projects a hooked arrow, *a*, the lower end, 4, of which enters the slot *b*, in the bell-crank piece G, which is free to turn upon a stud or journal, *c*, secured to the stand H, which is fastened to the side of the frame A.

The front end of rod I is hooked into a hole in one arm of the crank-piece G, while the other end of said rod, which has a thread cut thereon, is screwed into the hub *d*, on the front end of the shipper-arm J.

The shipper-arm J extends back, and is curved down and up, as shown, and is provided with a slotted enlargement, *f*, in which the lower end of the swinging pendent arm *k* is hinged, the upper end of arm *k* being supported by and hinged upon the stud *g*, fastened to the frame A.

To the rear projecting end L is fastened the hub *h*, which supports the shipper, or belt-forks or fingers, 5–5.

It will be observed that the loose pulley, as shown, is wider than the tight pulley C, and also that the outer fork or finger extends over the edge of the loose pulley, even when the shipper-device is moved, as seen in dark lines, to run the belt upon the tight pulley. The object of this arrangement is to make the loose pulley serve in a measure the purpose of a balance-wheel.

When the belt is on the tight pulley, and operating the loom, arm K will occupy the position shown in dark lines, fig. 2, and when in this position it will be seen that the weight of both the arms, K and J, will cause the shipper-forks to move toward the loose pulley as soon as the handle D is forced out of notch 3 in stand F; consequently the shipping of the belt, for the purpose of stopping the loom, is greatly facilitated and aided by the suspension of the arms K and J, and that, too, at the very time when most needed, viz, at the first starting of the shipper-forks. This is illustrated by black, blue, and red lines, fig. 2.

When the shipper-handle is forced out of the notch 3 in stand F, arms K and J occupy the positions shown in dark lines, and during the movement to the positions shown in blue lines, is the time when the gravity of the parts operates most powerfully in aid of the force employed to ship the belt, and which is the time when the greatest forces are required.

By the above arrangement, more delicate springs can be employed for operating the shipper-device, and, consequently, a less amount of exertion is required on the part of the operator to start the loom.

By the use of the rod I, in combination with arm J and bell-crank G, it can be quickly adjusted to run the belt, more or less, upon the tight pulley, all that is necessary being to lift the hook-end from the bell-crank piece G, and then screw rod I in or out of the end, *d*, of arm J; and what renders this mode of adjustment more important and valuable is the fact that it can be made by the operative, and that, too, without the employment of hammers or other tools.

Having described my improvements in shipper-devices for looms,

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

1. The combination of the shipper-arm J with the swinging or pendent arm K, said parts being constructed and arranged substantially as and for the purposes described.

2. The combination, with the bell-crank piece G and shipper-arm J, of the screw and hooked rod I, and nut *d*, constructed and arranged substantially as and for the purposes described.

LUCIUS J. KNOWLES.

Witnesses:

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