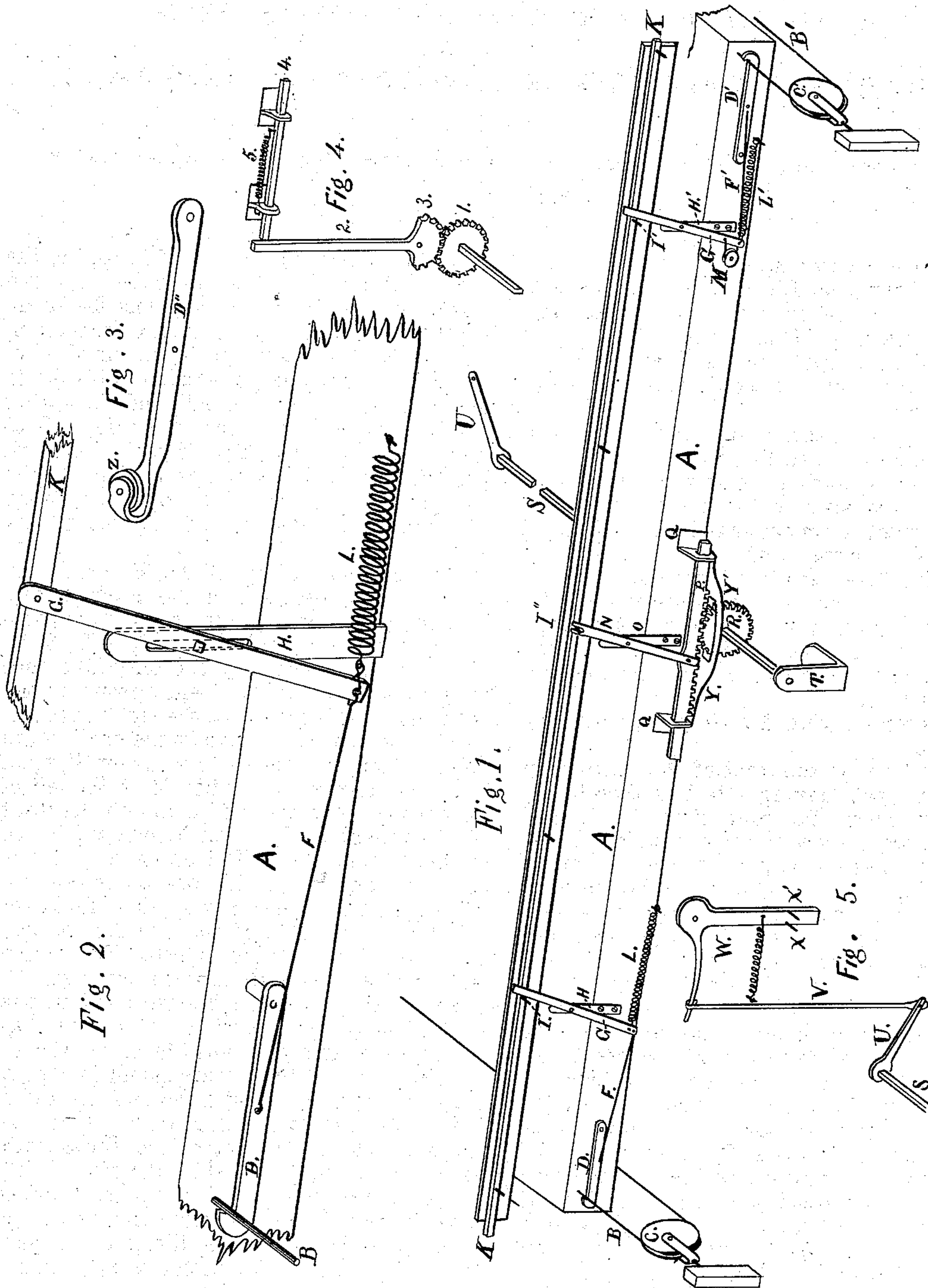


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Stopping Mechanisms for Spinning Jacks.

No. 155,583.

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IMPROVEMENT IN STOPPING MECHANISMS FOR SPINNING-JACKS.

Specification forming part of Letters Patent No. **155,583**, dated October 6, 1874; application filed January 19, 1874.

To all whom it may concern:

Be it known that I, WILLIAM H. HOLGATE, of Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain Improvements in Stop-Motions for Spinning-Jacks, of which the following is a specification:

My invention relates to a device for stopping such jacks when the guide-bands loosen or break by operating the stop-rod automatically; and consists in the combination of a hooked lever, a connecting-chain, a straight lever, and a spring, with said stop-rod. My invention relates also to a device for stopping said jacks by hand; and consists of a combination with said stop-rod of a straight lever, a sliding rack-bar, a gear sliding upon a square shaft, and an arm upon said shaft, as hereinafter described.

The accompanying drawings represent my invention.

Figure 1 shows the front of the carriage of a spinning-jack, having attached thereto my invention, except the connecting-rod. Fig. 2 is an enlarged view of the automatic device which operates the stop-rod at the left end of the carriage. Fig. 3 shows another form of the hooked lever. Fig. 4 shows one means for operating the shipping-bar by the square shaft, and thus shifting the driving-belt. Fig. 5 shows another means for shifting the belt.

A is the body of the carriage. B is a double guide-band, running upon the pulley C, the ends of the guide-band being attached to the carriage in the usual manner. The carriage is moved by the ordinary means. Near the outer end of the carriage, on the front of the same, is a hooked lever, D. This hooked lever, or hook, is attached to the carriage by a pivot, at its inner end, and is bent upward at its outer end at nearly a right angle, and is very slightly hooking, just enough to be kept up by the band when the latter is taut. About mid-way between the hook and the pivot is attached to said hooked lever a chain, F, the other end of said chain being attached to the lower end of the lever G. The lever G is pivoted to an upright standard, H, on the front of the carriage, and the upper end of said lever rests against the right side of the pin or handle I, on the stop-rod K. A spiral spring,

L, is attached at one end to the front of the carriage, and at the other end to the lower end of said lever G. The stop-rod runs the entire length of the carriage, is square in section, and supported by bearings in the usual manner. Now, when the guide-band B breaks or slackens, the hook D will fall, and the spring L will throw the upper end of the lever G to the left, and slide the stop-rod to the left, with the same effect as if moved by the hand of the operative. The device above described, may, therefore, be applied to the stop-rod of any jack.

The parts marked B', C', D', F', G', H', I', and L', at the right end of the carriage, are, in their shape, position, and use, like the parts already described, and marked B, C, D, F, G, H, I, and L, respectively, the only difference being that the hook D' is bent upward at the right end, and is placed at the right of the lever G', and that consequently the chain F', in passing from the hook D' to the lever G', must be carried around the pulley M at the left of the lever G'. At the middle and on the front of the carriage is the lever N, pivoted to the upright standard O. The upper end of the lever N is forked, and its fork embraces one of the pins I'' of the stop-rod, while the lower end of said lever N is pivoted to the horizontal bar P, which bar is supported by suitable bearings Q Q on the front of the carriage. A longitudinal slot in the standard O allows the pivot of the lever N to move up or down, as may be required by the position of said lever, as shown by a similar arrangement in Fig. 2, in the standard H. Into a rack on the under side of the bar P works a gear, R, which has a square hole in its center, and slides with the carriage (being carried by the arms Y Y') on the square shaft S. This square shaft is placed horizontally at or near the middle of the carriage, fits the hole in the gear R, is parallel to the track on which the carriage runs, and is supported by two upright standards, both alike, one of said standards being in front of the jack, marked T, and the other behind said jack, the latter standard not being shown. To the rear end of the shaft S is fixed a short arm, U, which, when the carriage is running, is horizontal. A vertical connecting-rod, V, is pivoted to the end of the arm U, and hooks

over the horizontal arm of the shipping-lever W in such a manner that the latter may fall without forcing down said rod V. Pins X X' project from the vertical arm of this shipping-lever W on each side of the vertical belt which drives the jack. The lever W turns on a pivot at the junction of its two arms. When the stop-rod slides to the left, as already explained, either moved by the above-described automatic device or moved by hand, the bar P slides to the right, revolving the gear R and shaft S, throwing down the arm U, and, through the connecting-rod V, forcing the vertical arm of the lever W to the right, thus shipping the driving-belt from the fast pulleys, which drive the jack to the loose pulley at their right, thus stopping the jack. Instead of the square shaft S a round shaft fitted with a spline may be used.

Another form of the hook D is shown in Fig. 3, adapted to those jacks which have but a single guide-band, which does not run with the carriage. This hook D' has the pulley Z, which hooks onto the guide-band—that is, the guide-band runs on the right side of said pulley. It is applied to the carriage in the same way, and with the same effect as the hook D is to the carriage above described.

Another means for connecting the square shaft S with the driving-belt, shown in Fig. 4, is as follows: On the rear end of the square shaft is a fast gear, 1, and above is a lever, 2, the lower end of which terminates in a segmental gear, 3, pivoted at its center, which

works into the gear 1. When the stop-rod moves to the left, the upper end of the lever 2 also moves to the left, and the horizontal shipping-bar 4 is thrown to the left by the spring 5, carrying the belt from the fast driving-pulleys to the loose pulley at their left.

The advantage of my invention is, that besides enabling the carriage to be stopped and started instantly, in any part of its course, by the hand applied to the shipping-rod, whether the operative stands in the center or at either end of the carriage, it will also be stopped automatically before the carriage runs off the track and is broken, whenever the guide-bands slacken or break, and that the device herein described can be applied to any jack.

I claim as my invention—

1. The combination of the hook D, the chain F, the lever G, the spring L, and the stop-rod K, as and for the purpose herein described.

2. The combination of the hook D, chain F, the lever G, the spring L, the stop-rod K, the lever N, the rack-bar P, the gear R, the shaft S, the arm U, as and for the purpose described.

3. The combination of the stop-rod K, the lever N, the rack-bar P, the gear R, the shaft S, and the arm U, as and for the purpose herein described.

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Witnesses:

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