

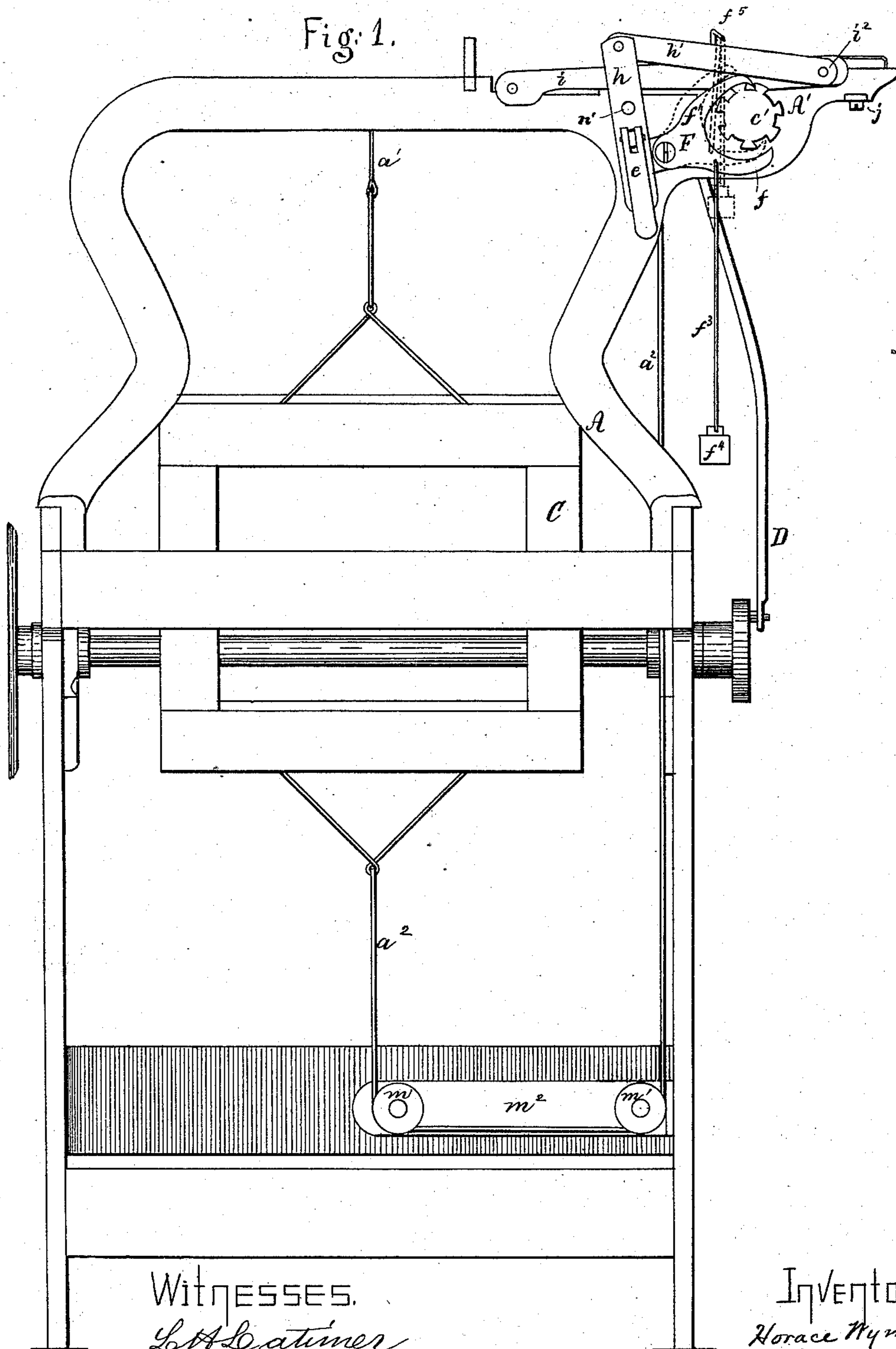
H. WYMAN.

Shedding Mechanisms for Looms.

No. 158,395.

Patented Jan. 5, 1875.

Fig. 1.



Witnesses.

L. A. Leatimer
Wm. Pratt.

Inventor

Horace Wyman

per Crosby & Gregory Attys.

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Fig. 2.

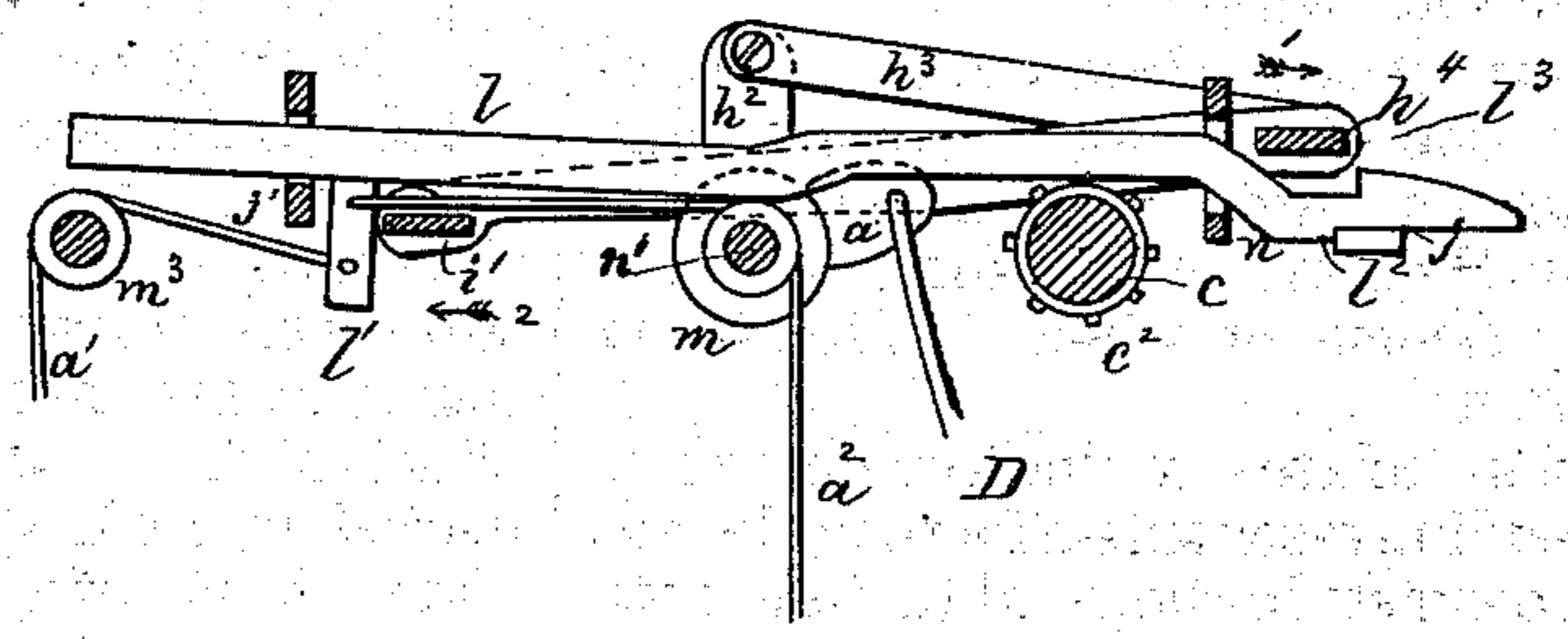
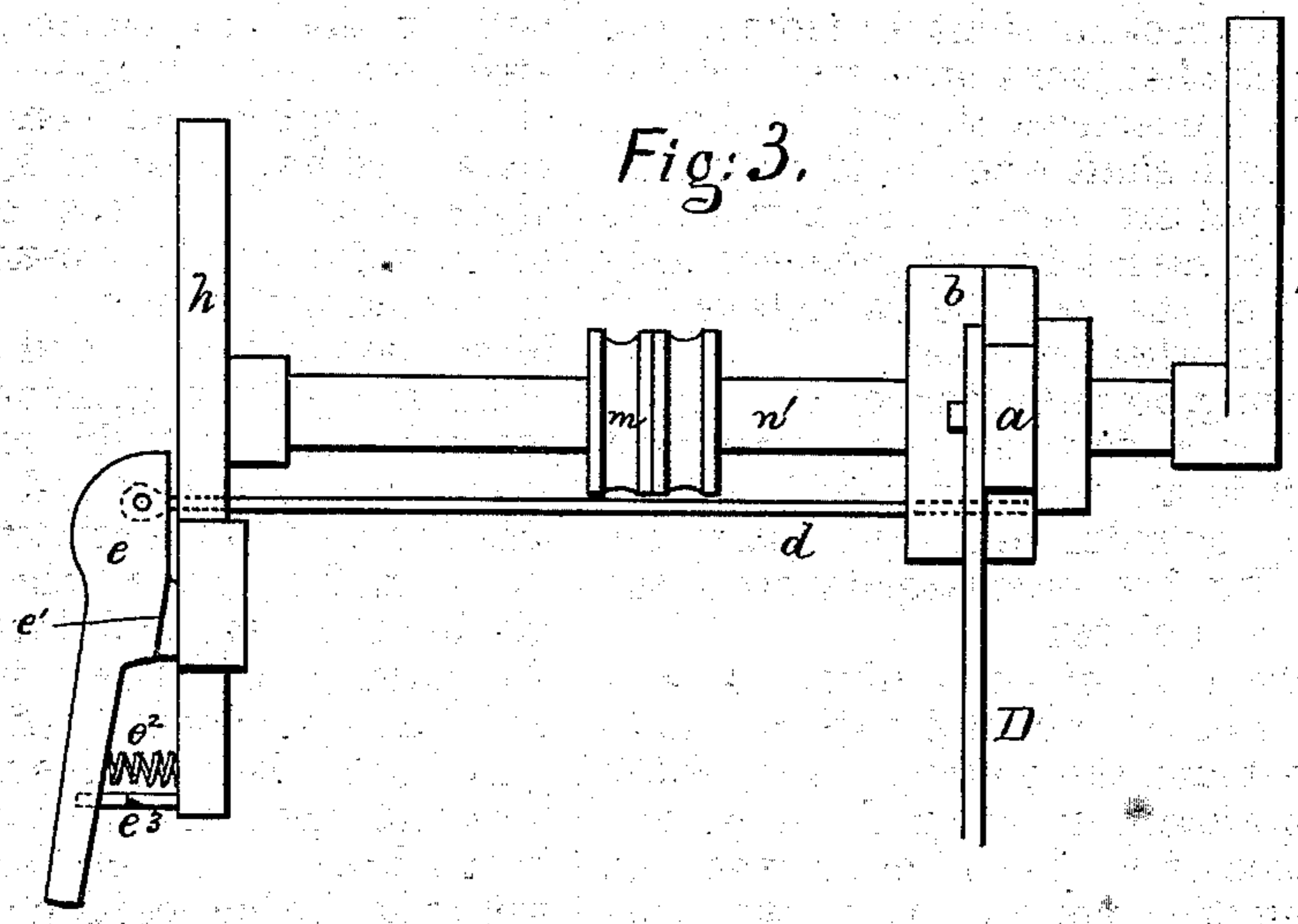


Fig. 3.



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Inventor.

Horace Wyman

per Crosby & Gregory

Attys.

UNITED STATES PATENT OFFICE

HORACE WYMAN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE CROMPTON, OF SAME PLACE.

IMPROVEMENT IN SHEDDING MECHANISMS FOR LOOMS.

Specification forming part of Letters Patent No. 158,395, dated January 5, 1875; application filed December 9, 1874.

To all whom it may concern:

Be it known that I, HORACE WYMAN, of Worcester, in the county of Worcester and State of Massachusetts, have invented Improvements in Harness or Shedding Mechanism for Fancy Looms, of which the following is a specification:

My invention relates to improvements in harness or shedding mechanism for fancy looms. My invention consists in the combination, with notched jacks for operating the harness-frames, of stationary bars adapted to hold the jacks, so as to keep the harness-frames down, or in their depressed positions; also, in the combination, with the rocking-shaft for moving the lifter and the notched jacks, of an arm or clutch adapted to be connected with, or to be disconnected from, such shaft when it is desired to turn back the pattern mechanism, or work the shedding or harness mechanism independently of other parts of the loom, so as to take out mispicks, or for other purposes.

In the drawing, forming part of this invention, Figure 1 is a side view of my improved loom. Fig. 2 is an enlarged section of the jacks, pattern-cylinder, and other parts detached; and Fig. 3 is an enlarged view of the rocking-shaft and clutch.

The loom-frame A, of any ordinary or suitable construction, is provided with a crank-shaft, B, to actuate the moving parts of the loom. The harness mechanism is supported, in this instance of my invention, at the top, and on a projecting portion, A', of the loom-frame. The jacks *l* have notches at bottom and top, *l*² *l*³, and projecting ears *l*¹. They rest on a stationary bar, *j*, at or near their notched ends, and on a second stationary bar, *j'*, or a guide-bar, at their opposite ends. Between these bars the jacks pass between a comb-like guide, *n*, which acts to guide the jacks in right lines, and near that point they are acted on by pins *c*², or rolls of the pattern-cylinder *c*, or chain. Cords or suitable connections *a*¹ lead from the ears *l*¹ to the tops of the harness-frames C, and other cords or connections, *a*², lead from such ears to the bottoms of the harness-frames, passing, preferably, over pulleys *m* *m*¹ *m*³, as shown. The lifter *h*⁴ is connected

with arms *h* *h*² of a rocking-shaft, *n*¹, by means of links *h*¹ *h*³, the arm and link *h*² *h*³ being preferably longer than the arm and link *h* *h*¹, so as to move the lifter *h*⁴ more at one end than at the other, and thereby lift the harness-frames toward the back of the loom higher than those next the breast-beam, to give the proper incline to the shed. The evener-bar *i*¹ is connected by links *i*, one at each end, with the ends of the lifter-bar, or with its operating-links *h*¹ or *h*³, at *i*², and the evener slides on the top of the loom-frame, but under the jacks, and engages the ears *l*¹, to which the cords *a*¹ *a*² are attached. The lifter and evener are both, in this way, connected with, and operated from, the rocking-shaft *n*¹, resting in suitable bearings in the loom-frame. This shaft has a fixed hub or collar, *b*, at the side of which is placed an arm, *a*, loose on the shaft, and secured to the hub by means of a sliding pin, *d*, connected with a lever, *e*, pivoted at *e*¹ to the lower part of arm *h*; and a pawl, F, for actuating the pattern-cylinder *c*, by engaging its toothed wheel or double ratchet *c*², is also pivoted to said arm *h*. A rod or link, D, connects this arm *a* with the rotating shaft B; and, as the shaft B is rotated, the shaft *n*¹ is rocked, moving the arms, and lifter, and evener; and the pawl F, as shown in full lines, Fig. 1, will turn the pattern-cylinder *c* forward, the pins *c*² will raise the jacks according to the pattern, and, when lifted, the lifter will move them in the direction of the arrow 1 in Fig. 2, and will raise the harness-frame C, the jacks pulling on the cords *a*¹.

When the rocking-shaft moves back to bring back the lifter to engage other notched jacks, and lift their connected harness-frames, the evener *i*¹ moves in the direction of the arrow 2, Fig. 2, strikes the ears *l*¹, and moves the jacks back, and they, drawing on the cords *a*², draw the harness-frames C down. When in this position, or down, the notches *l*² of the jacks engage the stationary bar *j*, and the ears *l*¹ also abut against the stationary bar *j'*, and these bars lock and hold the jacks with the harness depressed or down. When it is desired to disengage the shedding and the pattern mechanisms from the other parts of the loom

for the purpose of reversing the pattern, or actuating the harness independently, so as to take out mispicks, or for finding a lost pick, or for other purposes, the lever *e* is turned so as to draw the pin *d* from the arm *a*, and in this position the rock-shaft may be moved by hand, actuating the shedding and the pattern mechanisms independently as long as desired. This lever may be held, when so turned, by a catch, *e*³, or other suitable means, and a spring, *e*², will throw the lever in the opposite direction, and cause the pin to engage the hub and arm when the lever is disengaged. When the pawl *F* is in the position shown in full lines in Fig. 1, the pattern-cylinder will be moved in one direction—say, forward; but when it is desired to reverse the movement of this cylinder the cord *f*³, attached to the pawl, and provided with a weight, is thrown over a rest, *f*⁵, Fig. 1, as shown in dotted lines. This elevates the limb *f*² of the pawl, as shown in dotted lines in Fig. 1, and then the pawl moves the pattern-cylinder in the opposite direction, or backward. Instead of this cord I may use a spring, which may be made to bear on, and so as to engage, either limb of the pawl *F*, with the teeth of ratchet *c*¹ above or below its center. Instead of the pin *d* and collar and arm I might use a clutch of ordinary construction to engage or disengage the arm from the rocking-shaft, and from its connection with shaft *B*.

The pulleys over which the cords or connections *a*¹ *a*² pass may be adjusted as shown in patent No. 111,324.

This invention may be applied to horizontally or vertically moving notched jacks.

Having described my invention, I claim—

1. The combination, with notched jacks, or notched and eared jacks, of stationary holding-bars for holding the harness-frames in position, substantially as set forth.

2. The combination, with notched jacks and stationary holding-bars, of an evenner-bar, for placing the notched jacks in engagement with such bars, substantially as set forth.

3. The combination, with the rocking-shaft for actuating the shedding or harness mechanism, of an arm or clutch adapted to be engaged with, or to be disengaged from, such rocking-shaft, substantially as and for the purpose described.

4. The combination, with the rocking-shaft for actuating the harness mechanism, of the collar *b*, arm *a*, pin *d*, and lever *e*, substantially as described.

5. The combination, with the rocking-shaft of the shedding mechanism and arm *a*, of mechanism, substantially as described, for disengaging said arm from the rocking-shaft, and a reversible pawl for reversing the pattern-cylinder, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HORACE WYMAN.

Witnesses:

J. A. WARE,

J. B. SYME.