

No. 658,154.

Patented Sept. 18, 1900.

A. MASON.

SPINNING AND TWISTING FRAME.

(Application filed Apr. 12, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

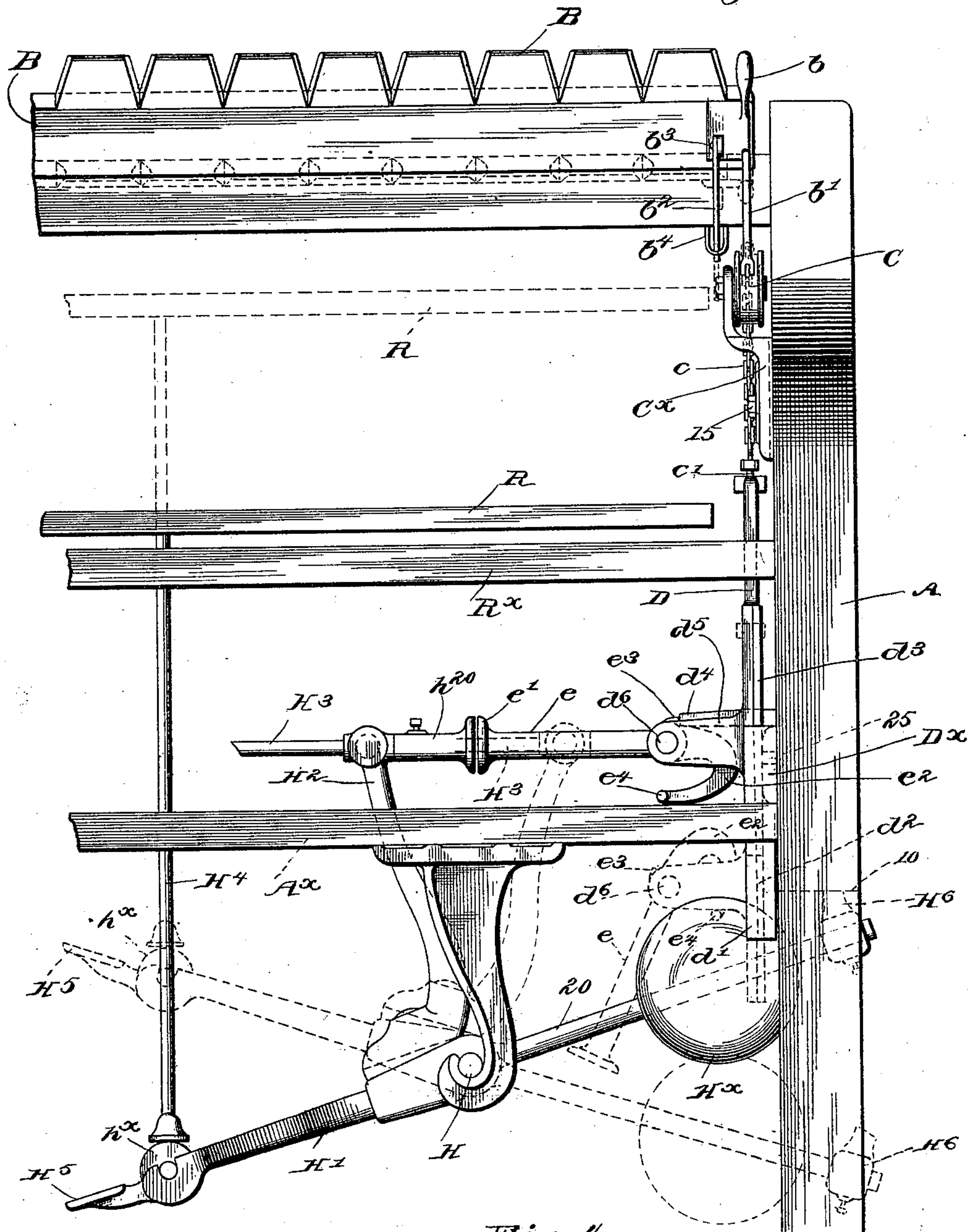
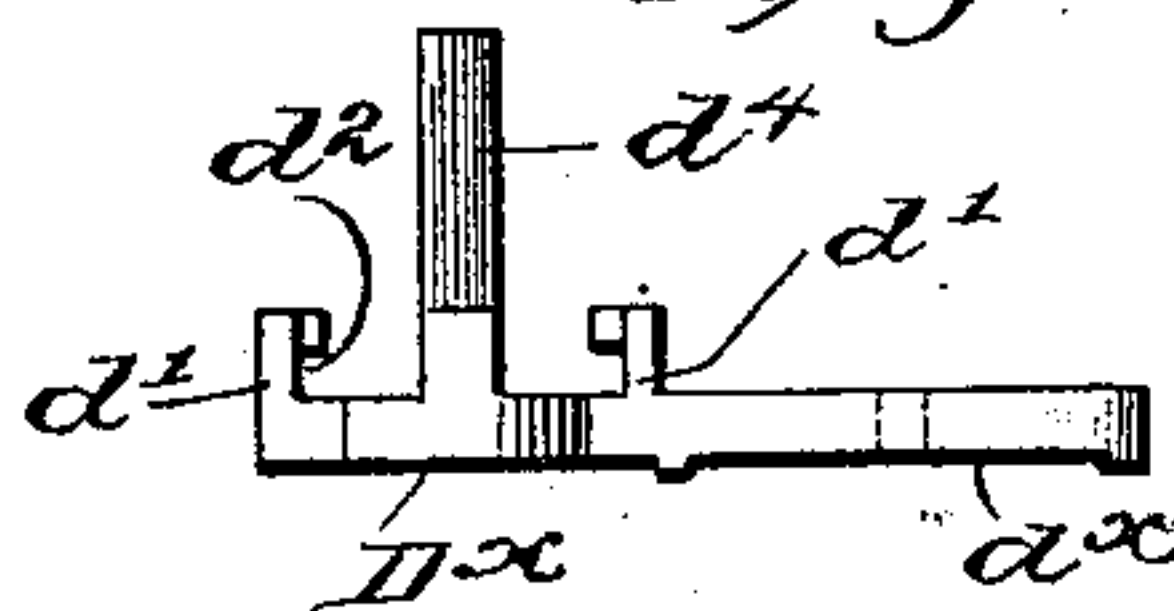


Fig. 4.



Witnesses  
W. C. Linsford.  
Adolf B. Kaiser.

Inventor.  
Arthur Mason,

By Wesley Gregory.  
Attys.

No. 658,154.

Patented Sept. 18, 1900.

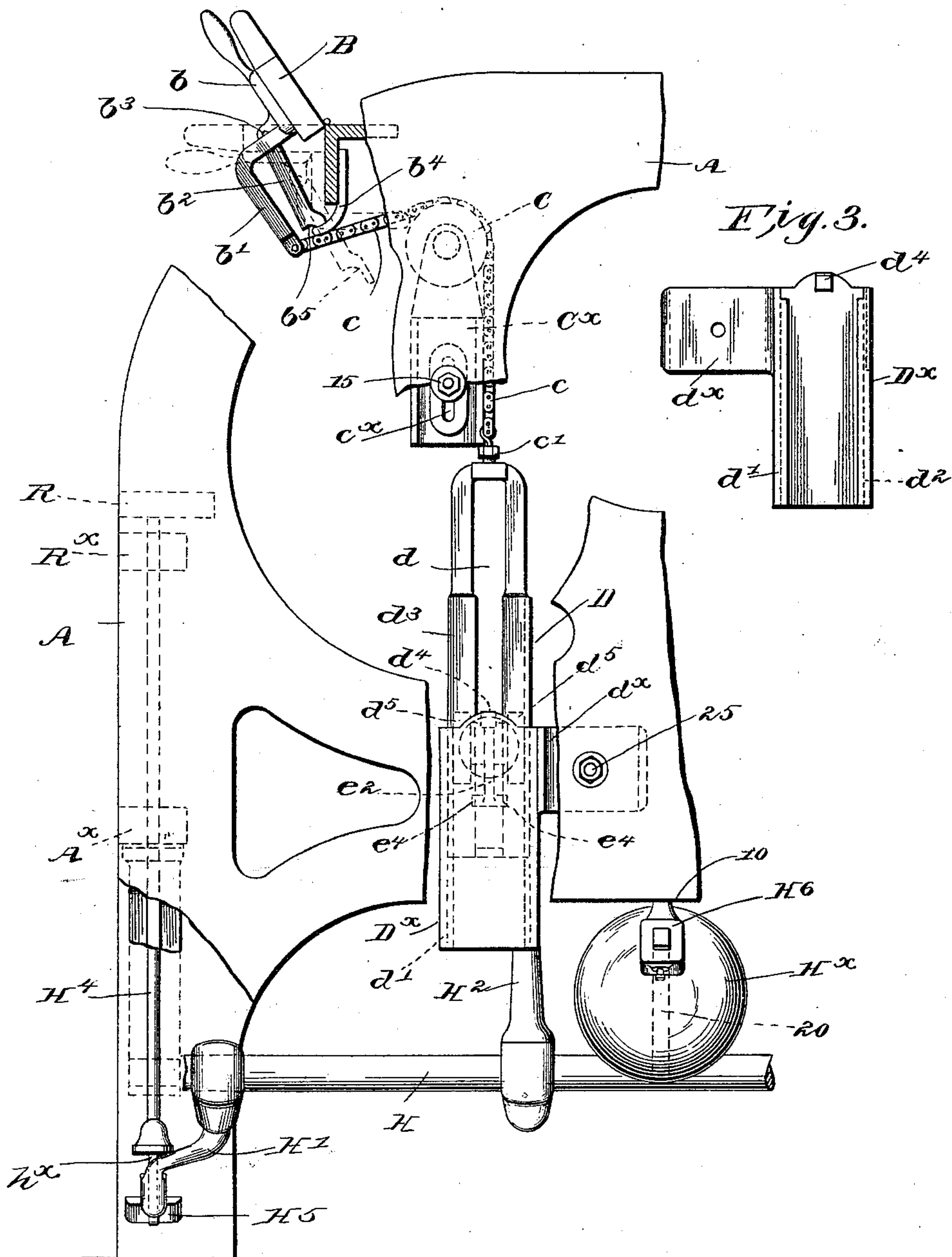
A. MASON.  
SPINNING AND TWISTING FRAME.

(Application filed Apr. 12, 1900.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 2.



Witnesses,  
W. C. Simsford,  
Adolf B. Haase.

Inventor,  
Arthur Mason,  
by Wesley Gregory.

Attys.



# UNITED STATES PATENT OFFICE.

ARTHUR MASON, OF RAYNHAM, MASSACHUSETTS.

## SPINNING AND TWISTING FRAME.

SPECIFICATION forming part of Letters Patent No. 658,154, dated September 18, 1900.

Application filed April 12, 1900. Serial No. 12,521. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR MASON, of Raynham, county of Bristol, State of Massachusetts, have invented an Improvement in Spinning and Twisting Frames, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to spinning and twisting machines; and it has for its object the production of means for holding the ring-rail in its lowest position to facilitate "doffing," while the thread-board is simultaneously maintained in raised position. The ring-rail is elevated by the usual overbalancing-weights, and as the rail is liable to be in any intermediate position when the frame is stopped for doffing it is necessary to force the rail down to its lowest point at such time, and in accordance with my invention the means for holding it at such point operate automatically when such depression is effected.

Figure 1 is a front elevation of a portion of a spinning or twisting frame embodying one form of my invention, the parts being shown by full lines in doffing position and by dotted lines in running position. Fig. 2 is a part end elevation of the mechanism shown in Fig. 1, the end frame being broken out in places to show the parts beyond, with the parts in doffing position. Fig. 3 is a detached view in elevation of the guide-bracket provided with a stop, to be described; and Fig. 4 is a top or plan view of said bracket.

The end frames A, cross-girth A<sup>x</sup>, spindle-rail R<sup>x</sup>, reciprocating ring-rail R, rocker-shaft H, having the attached lever H', the upright rocker-arm H<sup>2</sup>, and its pivotally-connected link H<sup>3</sup>, the roll h<sup>x</sup> on the lever H' to engage the lower end of the lifting-rod H<sup>4</sup>, the hinged thread-board B, and the arm 20 fast on the rocker-shaft and provided with the overbalancing-weight H<sup>x</sup> may be and are all of usual or well-known construction in spinning and twisting frames.

The lever H' is provided at its extremity with a footpiece or step H<sup>5</sup> to depress the lever to its lowest point by pressure of the foot of the attendant when it is desired to doff, and the oppositely-extended weighted

arm 20 is provided with a longitudinally-adjustable stop H<sup>6</sup>, which engages a fixed part 10 of the frame, limiting the movement of said lever when depressed by the foot.

As best shown in Fig. 2, the thread-board B has suitably secured thereto a lifting-handle b, provided with a rigid depending bent arm b' and a latch b<sup>2</sup>, pivoted at b<sup>3</sup> on the enlarged part of the handle, said latch passing through a loop-like keeper b<sup>4</sup> and shouldered at b<sup>5</sup> to engage the keeper when the thread-board is lifted, as in full lines, and maintain the board locked in such position.

A chain or other flexible connection c is attached to the end of the bent arm b' and passes over a guide pulley or roll C, rotatably mounted on a suitable bracket C<sup>x</sup>, slotted at c<sup>x</sup>, Fig. 2, to receive a bolt 15, by which the bracket is adjustably secured to the frame. The free depending end of the chain is attached by a preferably-adjustable swivel connection c' with a vertically-movable slide D, shown as an elongated block longitudinally slotted at d and threaded at its upper end to receive the threaded shank of the swivel connection c', adjustment of either the bracket C<sup>x</sup> or said connection regulating the throw of the slide D, as may be necessary.

A bracket D<sup>x</sup>, having a laterally-offset portion d<sup>x</sup>, is secured to the inner face of the end frame by a suitable bolt 25, said bracket being recessed longitudinally to form side flanges d', which on their inner faces are grooved, as at d<sup>2</sup>, (see dotted lines, Fig. 1,) to receive and form guides for side ribs d<sup>3</sup> on the slide D, said bracket having at its upper end an elongated projection or stop d<sup>4</sup>, which is extended through the slot d of the slide.

The slide D is herein shown as provided on its inner face, on opposite sides of the slot d, with ears d<sup>5</sup>, in which is fulcrumed at d<sup>6</sup> a detent e, shown as a bar provided with an enlargement e' at one end and having at its other end, movable between the ears, a cam-head e<sup>2</sup>, hook-like in its general shape, said detent on its upper side at the base of the head having a shoulder e<sup>3</sup> and at the extremity of the hook-like portion lateral stops or shoulders e<sup>4</sup>.

The link H<sup>3</sup> is provided with an abutment h<sup>20</sup> in alinement therewith and between the



rocker-arm  $H^2$  and the adjacent end frame, said abutment cooperating at times with the detent  $e$ , as will be described.

When the frame is in normal running condition, the thread-board, lifting-handle and connected parts, and the slide  $D$  are in dotted-line position, Figs. 1 and 2, and at such time the weight of the detent  $e$  will cause it to swing down into dotted-line position, limited by the engagement of the stops  $e^4$  with the under sides of the ears  $d^5$ . When it is desired to doff, however, the frame is stopped, and the attendant depresses the lever  $H'$  by pressure of the foot on the step  $H^5$ , bringing the rocker-arm  $H^2$  and abutment  $h^{20}$  into full-line position, (best shown in Fig. 1,) and at the same time he grasps the lifting-handle and lifts the thread-board, the latch  $b^2$  then automatically engaging the keeper  $b^4$  to maintain the thread-board lifted. Such movement of the lifting-handle, however, operates through the flexible connection  $c$  to elevate the slide  $D$ , and as the cam-head  $e^2$  of the detent engages the under side of the stop  $d^4$  the detent will be rocked on its fulcrum  $d^6$ , elevating the foot  $e'$  until the straight body  $e$  of the detent is in alinement with the link  $H^3$ , abutment  $h^{20}$ , and fulcrum  $d^6$ , and at such time the shoulder  $e^3$  will engage the end of the stop  $d^4$  and prevent further swing of the detent. The locking device for the thread-board also acts through the intermediate connections to also lock the slide  $D$  and attached parts in full-line position, Figs. 1 and 2, and when pressure on the step  $H^5$  is removed the abutment  $h^{20}$  engages the foot  $e'$  of the detent and is held thereby, the detent taking up the thrust of the rocker-arm  $H^2$ , and the ring-rail is held in its lowest position while doffing is effected. Thereafter the attendant again depresses the step or treadle  $H^5$  to remove the pressure from the detent, the thread-board is unlocked and lowered to its normal position by the handle  $b$ , and this permits the return of slide  $D$  and detent to normal inoperative position, and the frame is again in operative condition.

The lifting and locking of the thread-board and the locking of the ring-rail in doffing position are effected simultaneously and by or through a common actuator—the handle  $b$ . So far as I am aware this is broadly new and is a very decided and distinct advance in the practical construction and operation over devices heretofore devised for the purpose of doffing spinning or twisting frames.

My invention accordingly is not restricted to the precise construction and arrangement herein shown and described, as the same may be modified or rearranged in various particulars without departing from the spirit and scope of my invention.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In spinning and twisting machines, means

to lift the thread-board and automatically lock it in lifted position, and to simultaneously lock the ring-rail in doffing position.

2. In spinning and twisting machines, the thread-board, the ring-rail, means to lock them in doffing position, and a common actuator to lift the thread-board and operate said locking means.

3. In spinning and twisting machines, the thread-board, the ring-rail, and means controlled by the lifting of the thread-board to lock the ring-rail in doffing position.

4. In spinning and twisting machines, the thread-board, the ring-rail, and locking means for the thread-board and ring-rail, actuated by or through the lifting of the former to simultaneously and automatically maintain the thread-board and ring-rail in doffing position.

5. In spinning and twisting machines, the thread-board, the ring-rail, means to lift and automatically lock the thread-board, means to lock the ring-rail in doffing position, and intermediate connections to effect the operation of the latter means by or through the actuation of the former.

6. In spinning and twisting machines, the ring-rail, lifting means therefor, including a rocker-arm, a normally-inoperative detent, to receive the thrust of the rocker-arm when the rail is in doffing position, the thread-board, and means actuated by movement of the latter into doffing position to render the detent operative.

7. In spinning and twisting machines, the ring-rail, lifting means therefor, including a rocker-arm, a normally-inoperative, pivotally-mounted detent, a movable support therefor, and manually-controlled means to move the support to bring the detent into operative position between said support and the rocker-arm, to take up the thrust of the latter when the ring-rail is depressed and maintain said rail in doffing position.

8. In spinning and twisting machines, the ring-rail, lifting means therefor, including a rocker-arm, a normally-inoperative, pivotally-mounted detent, a movable support therefor, the thread-board, and a common actuator for the latter and for the detent, operatively connected with said support, to move the detent into position, when the thread-board is lifted, to maintain the ring-rail in doffing position.

9. In spinning and twisting frames, the ring-rail, a detent to maintain it in doffing position, said detent having a cam portion, a movable support for the detent, a fixed stop, and means to move said support to effect engagement of the stop and cam portion of the detent, to thereby operatively position the latter.

10. In spinning and twisting frames, the rocker-arm, an abutment carried thereby, a detent having a cam portion, a movable slide on which said detent is pivoted, a fixed stop, and means to move the slide to effect engagement of the stop and the cam portion of the detent, to swing the latter automatically into



position to engage the abutment on the rocker-arm.

11. In spinning and twisting frames, the rocker-arm, a pivotally-mounted detent, a movable slide on which it is mounted, and means to bring said detent into alinement with its fulcrum and the rocker-arm and to take up the thrust of the latter.

12. In spinning and twisting frames, the ring-rail, means to traverse it, including a rocker-shaft having an arm extended therefrom and provided with a weight, and a stop longitudinally adjustable on said arm to limit the upward movement thereof, the weight and stop being located at the same side of the rocker-shaft.

13. In spinning and twisting frames, traverse means for the ring-rail, including an up-turned rocker-arm, a normally-inoperative detent, a movable support on which it is mounted, means to move said support and the detent into position to take up the thrust of said arm when the ring-rail is in doffing position, and an actuating-handle for said means.

14. In spinning and twisting frames, traverse means for the ring-rail, including a rocker-arm, a normally-inoperative detent, a sliding support on which the detent is pivotally mounted, a stop to control the pivotal movement of the detent, and means to move the slide to effect coöperation of the stop and detent.

15. In spinning and twisting frames, traverse means for the ring-rail, including a rocker-arm, a normally-inoperative detent, a support therefor, mounted to slide on the main frame, and means to interpose the detent between the frame and the rocker-arm,

to take up the thrust of the rocker-arm when the ring-rail is depressed.

16. In spinning and twisting frames, traverse means for the ring-rail, including a rocker-arm, a normally-inoperative detent having a cam-head, a slide on which said detent is fulcrumed, a fixed stop to coöperate with the cam-head and turn the detent into position to coöperate with the rocker-arm, a thread-board, and means operated by lifting of the thread-board to move the slide and thereby effect the coöperation of the fixed stop and the cam-head of the detent.

17. In spinning and twisting machines, the thread-board, locking means to hold it lifted, a lifting-handle, the ring-rail, its lifting-lever and a connected rocker-arm, a detent, and means operatively connected with the lifting-handle to operatively position the detent to resist the thrust of the rocker-arm when the lifting-lever is depressed.

18. In spinning and twisting machines, the thread-board, locking means to hold it lifted, a lifting-handle, the ring-rail, its lifting-lever and a connected rocker-arm, a detent, a slide on which it is pivotally mounted, a flexible connection between said handle and slide, and means to turn the detent into position to resist the thrust of the rocker-arm when the slide is raised by movement of the lifting-handle to lift the thread-board.

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

ARTHUR MASON.

Witnesses:

HORACE A. CROSSMAN,  
JOHN T. MEATS.