

No. 763,086.

PATENTED JUNE 21, 1904.

F. S. BERRY.
SHEDDING MECHANISM FOR LOOMS.

APPLICATION FILED APR. 16, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

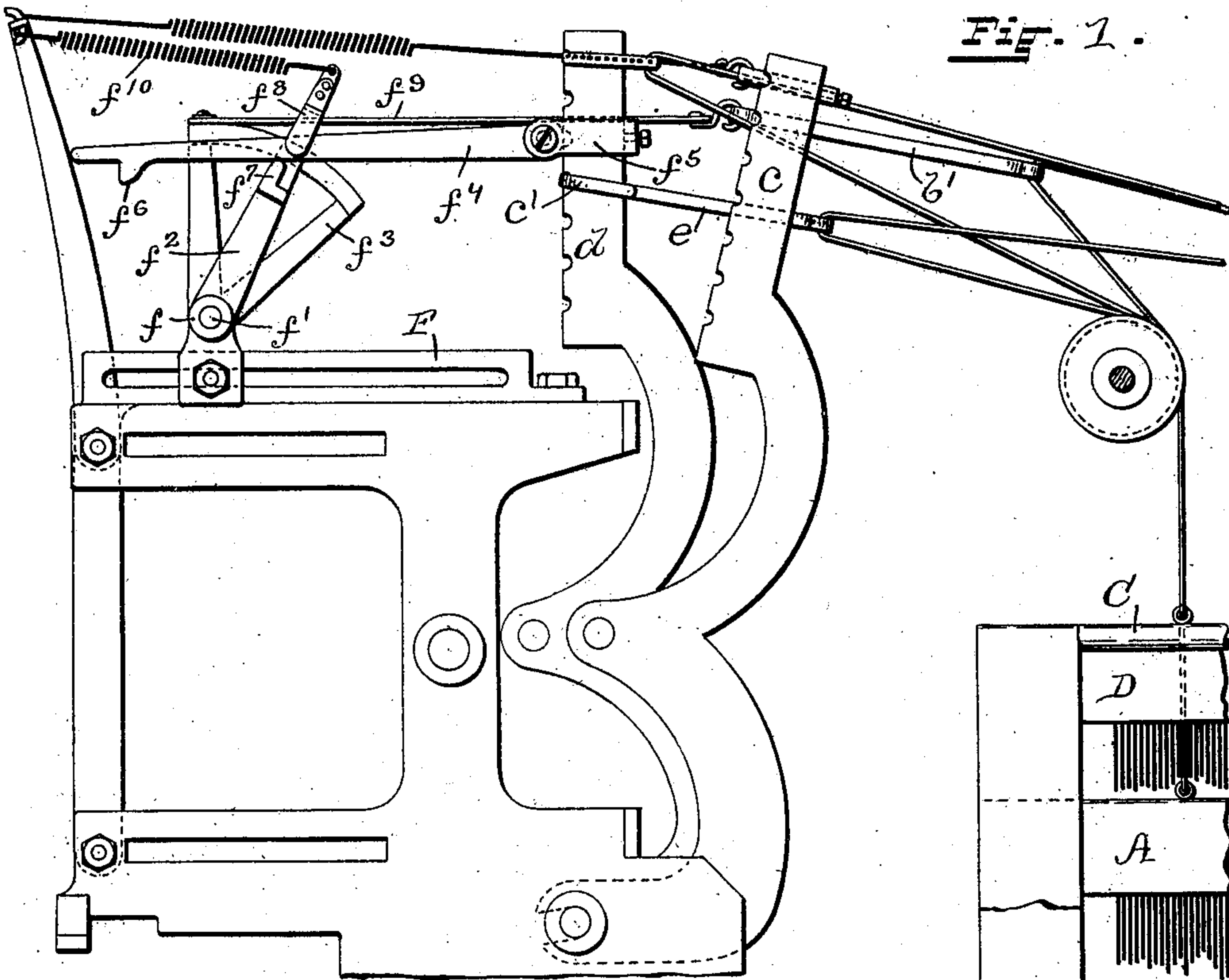
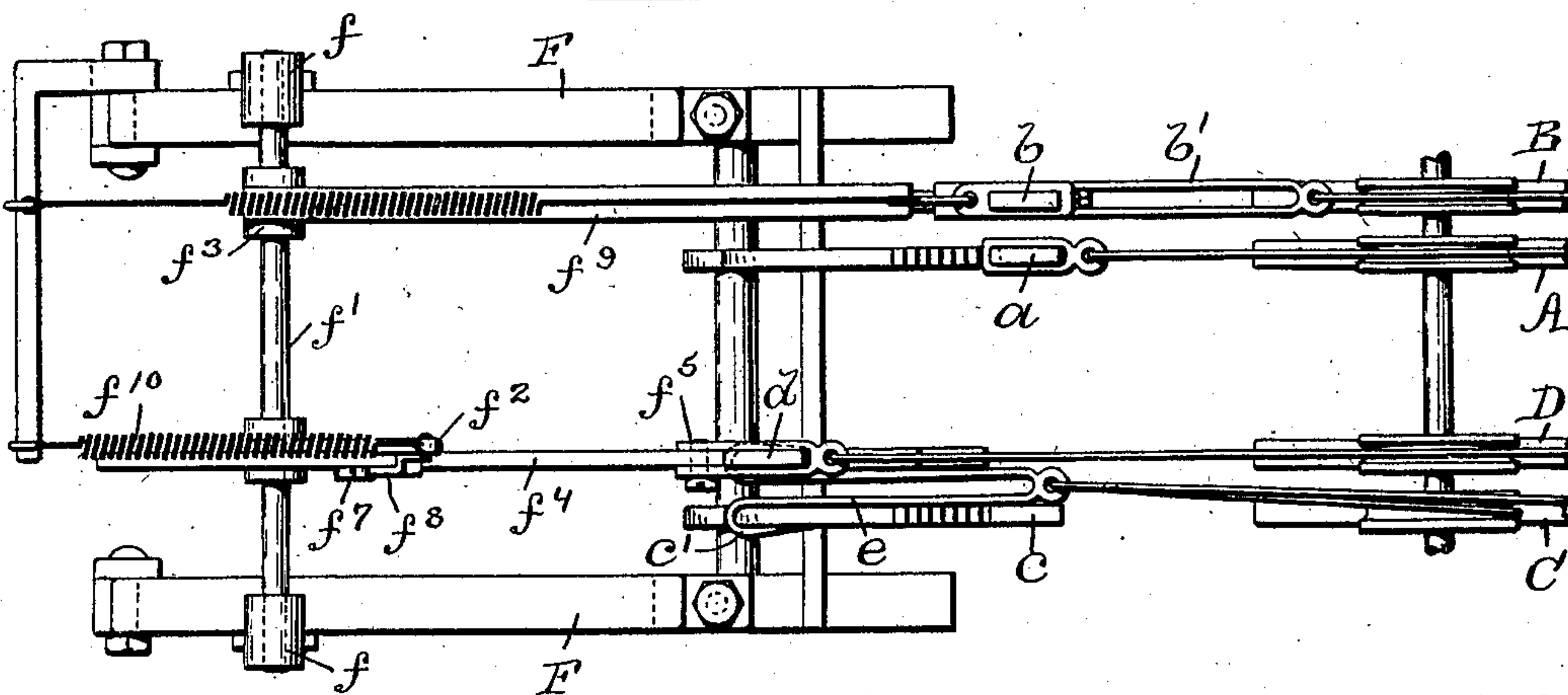


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

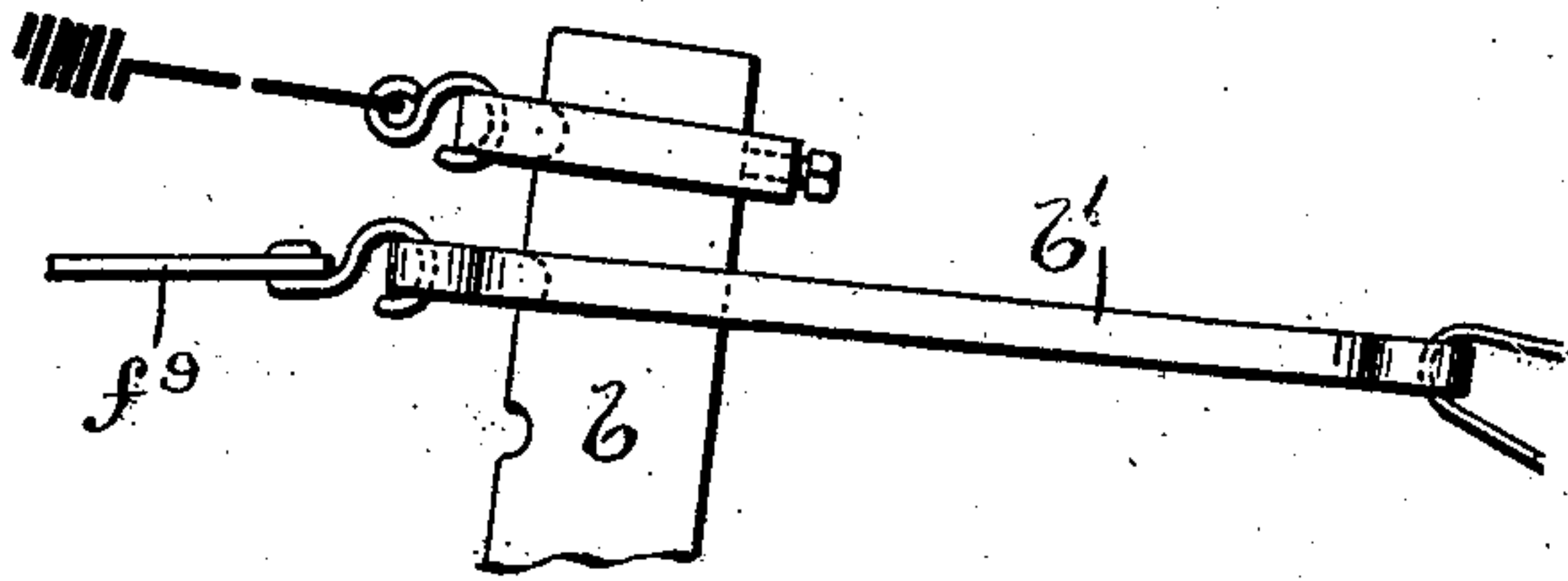


Fig. 4.

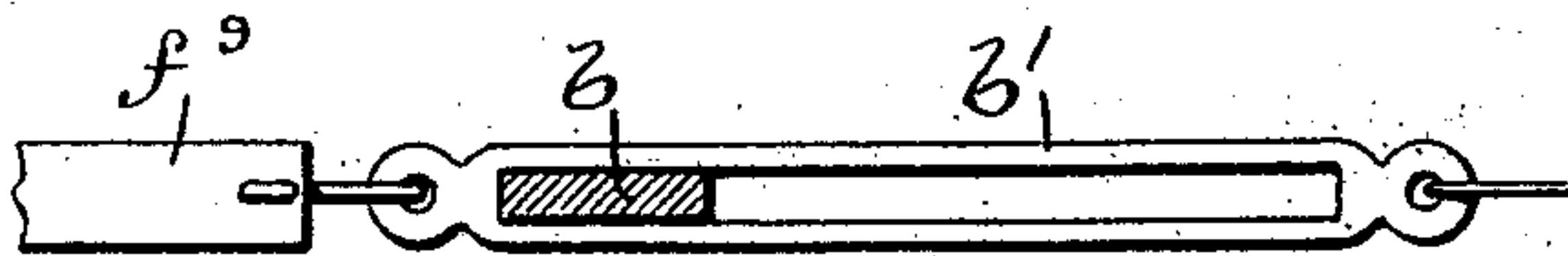


Fig. 5.

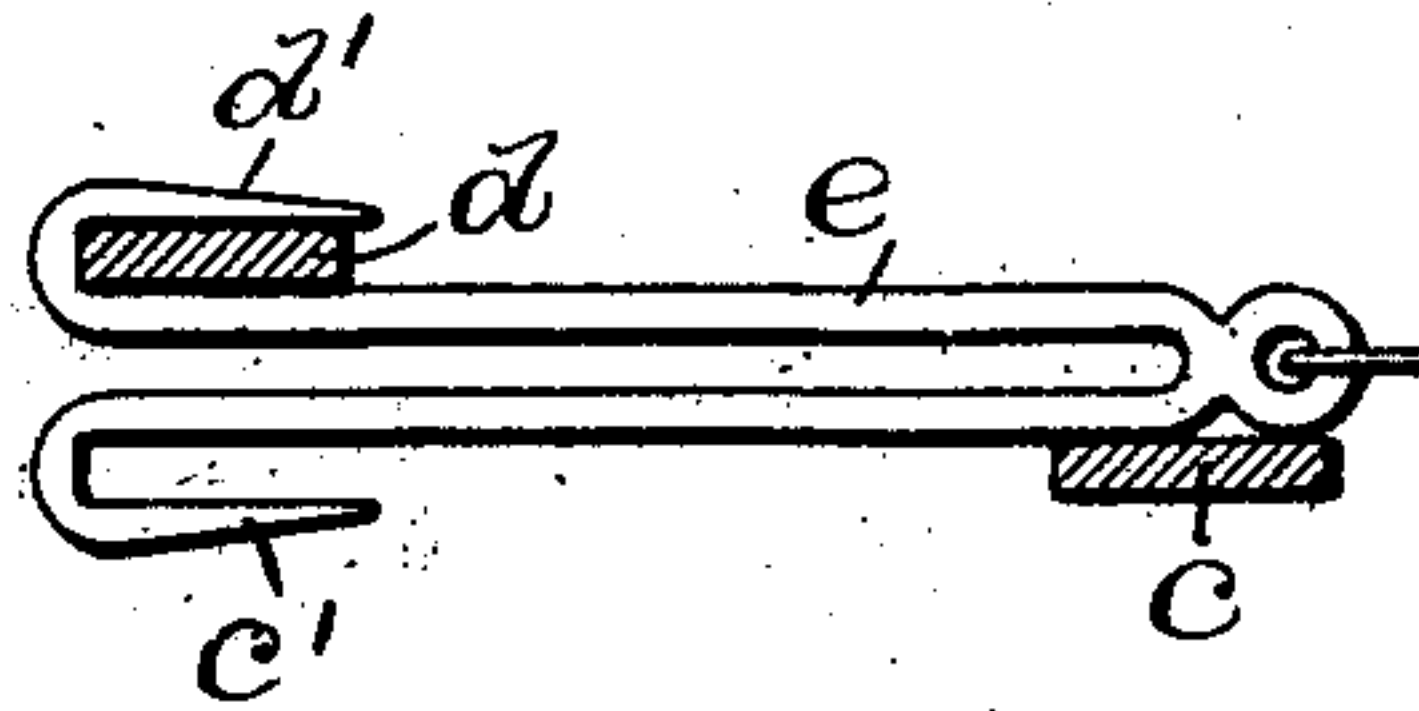


Fig. 6.

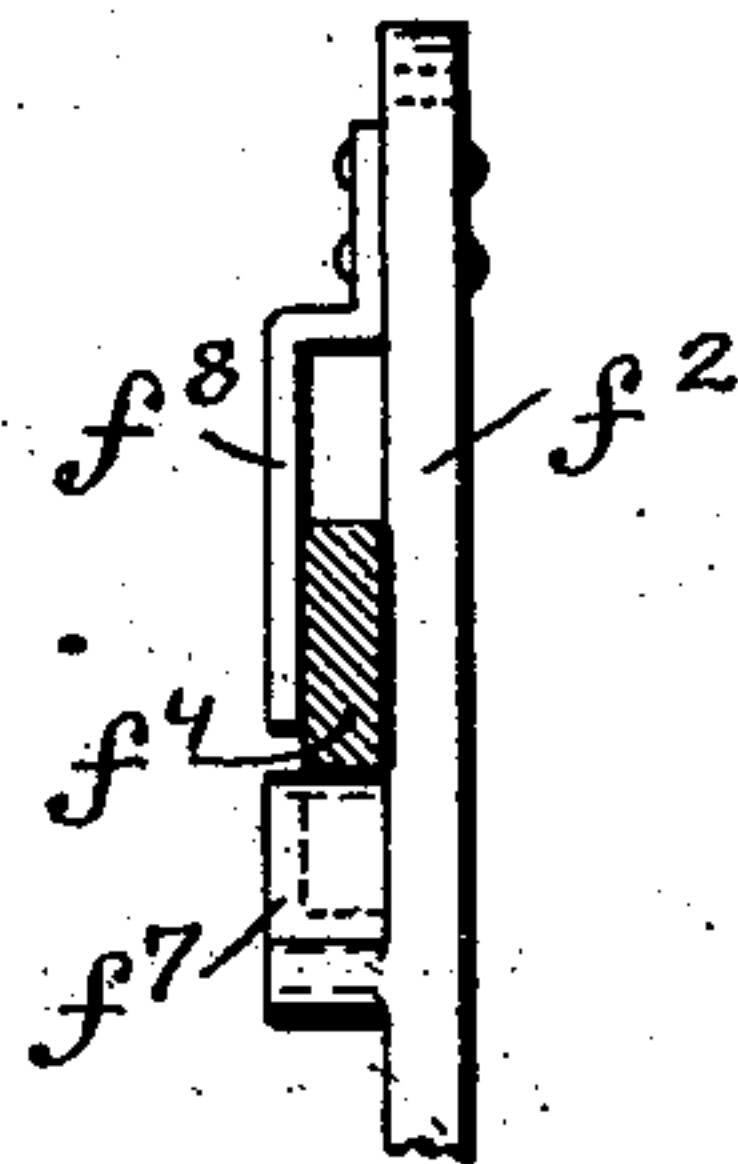


Fig. 7.

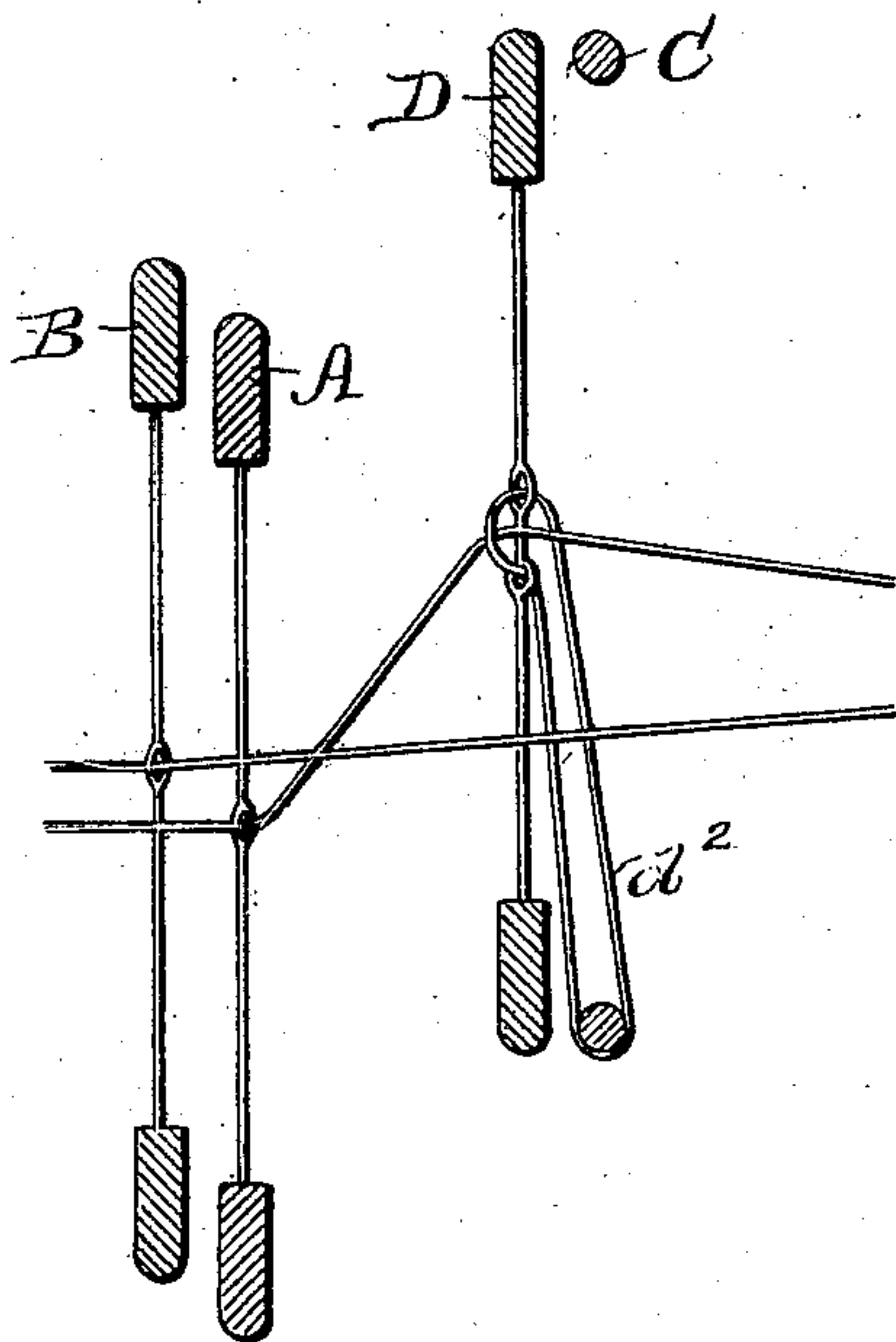
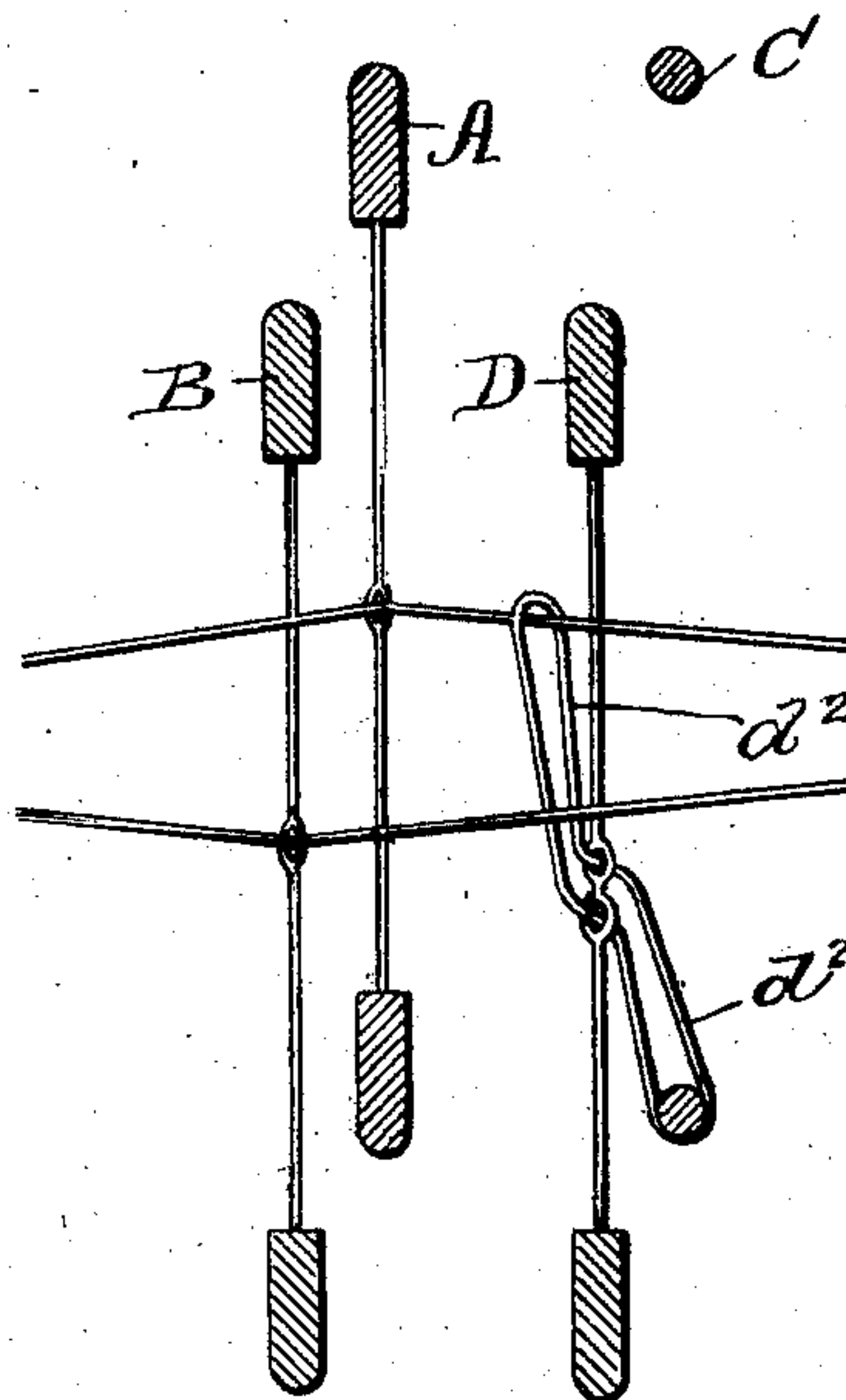


Fig. 8.



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SHEDDING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 763,086, dated June 21, 1904.

Application filed April 16, 1901. Serial No. 56,151. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. BERRY, a citizen of the United States, residing at Northbridge, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Shedding Mechanism for Looms, of which the following is a specification.

This invention has reference to an improvement in the shedding mechanism for looms, and is more especially designed for leno-weaving on open-shed dobbies.

In the process of weaving on open-shed dobbies it is necessary in order to facilitate the crossing of the warp-threads to raise certain of the harness-frames and the warp-threads therein to about a central point of the full-shed formation—i. e., one-half way between the bottom plane of the shed and the top plane of the same—and then to return to the bottom plane of the shed. This necessitates the use of a motion which will give to certain of the harness-frames and the warp-threads which are controlled thereby at the time of shed formation a "half and return motion," so called.

The object of my invention is to provide a device which may be applied to any of the actuating-levers in the dobby and which will give this half and return motion only at the time when the crossing of the warp-threads takes place and also to allow the harness or harnesses and the warp-threads therein to be raised to the full-shed formation whenever it is necessary. The harness-lever to which this device is applied is brought into action by the use of needles, levers, chains, and pegs, and other accessories which are generally used in the operation, as hereinafter described.

The invention consists in the peculiar and novel method of securing the half and return movement in combination with the regular shedding mechanism, whereby one of the harnesses and the yarn therein are given a half and return movement to allow for the cross-
ing to take place, as before described.

Figure 1 is an end view of the dobby, showing the trip and the connection with the harness-frame to be raised. Fig. 2 is a top view

of the dobby. Fig. 3 is a side view of the jack operating the harness-frame, showing the link connecting the trip with the harness. Fig. 4 is a top view, partly in section, of Fig. 3. Fig. 5 is a top view, partly in section, showing the double hook connecting the jacks of the two front harnesses. Fig. 6 is a front view of part of the trip-operating lever, showing the actuating-arm in section. Fig. 7 is a sectional view of the harnesses, showing the cross-shed position, and Fig. 8 showing the harnesses in the open-shed position.

Similar letters of reference indicate corresponding parts in all the figures.

In the drawings, A indicates the doup-thread harness; B, the standard or ground thread harness; C, the slip-shaft harness, carrying the doup-loop, and D the doup-harness.

The weaving of leno on a double-lift dobby necessitates the use of a motion which will bring the standard threads into a position to allow the doup-threads to pass to the opposite side. To illustrate, the harness A carries the doup-thread, and the harness B carries the ground or standard thread. The thread carried by the harness A is drawn through the doup-loop d^2 on the harness C. The loop d^2 passes through a double eye in a heddle on the shaft D. The "open" shed, so called, is made by the harness A being raised at the same time with the slip-shaft harness C and dropping the harness B. This brings the doup-yarn above the standard thread in the harness B, as shown in Fig. 8. The cross-shed is made by the harnesses A and B being down and C and D being raised, as shown in Fig. 7. In order to allow the yarns to be raised to a sufficient height for the shuttle to pass through, the threads in the harness A are passed over a slackener, which is eased or slackened at this point. The harnesses being in the position shown in Fig. 8, as in plain weaving, the shed being formed by the lifting and lowering of the harnesses A and B, the cross-shed is formed by dropping the harness A and lifting the harness D at the same time as the jack operating the harness D moves inward. The harness B is lifted,

through the action of the arm f^4 and the quadrant, with the harness D until the harness D has almost reached its highest point, when the arm f^4 is released from the quadrant, allowing the harness B to drop to form the shed. The harnesses and threads carried by them are then in the position shown in Fig. 7 to receive the pick. By reason of the lifting of the harness B and then dropping the same to form the shed the crossing is more readily accomplished, there being less breakage of the thread.

The harness A is controlled by the jack a and the harness B by the jack b , to which it is connected by the loop b' , which loop b' is also connected with the segmental arm of the trip, more fully described hereinafter.

The slip-shaft harness C is connected to the double hook e , one hook, e' , engaging with the jack c and the other hook, d' , with the jack d . The harness D is connected with the jack d . By this construction the slip-shaft harness C is controlled by both the jacks c and d . When these jacks are in the position as shown in Fig. 1, the slip-shaft harness C is held in the raised position by the jack d . When now the jack d moves outward and the jack c inward, the jack d lowers the slip-shaft harness C until the hook e' encounters the jack c on its inward movement, when the hook engages with the jack c and the slip-shaft harness C is again raised. The heddles of the harness D have two eyes, through which the doup-loop d^2 is threaded and passed around the lower frame-piece or slip-shaft of the harness C, as shown in Figs. 7 and 8. On the frame F of the dobby are secured the bearings f for the rock-shaft f' , and on the rock-shaft are secured the lever f^2 on a line with the jack d and the quadrant f^3 on a line with the jack b . The arm f^4 is pivotally connected with the clamp f^5 , adjustably secured to the jack d , and has near the outer end the pawl f^6 . The arm f^4 rides on the thrust-block f^7 on the lever f^2 and is guided by the bracket f^8 . The strap f^9 connects the quadrant f^3 with the loop b' , and the coiled spring f^{10} connects the lever f^2 with a stand of the dobby-frame. The jack d in swinging outward draws the arm f^4 over the thrust-block f^7 until the shoulder of the pawl f^6 bears on the curved face of the thrust-block when the jack reaches its farthest outward movement. On the inward movement of the jack d the arm will act to swing the lever f^2 , rock the rock-shaft f' , and move the quadrant to draw through the strap f^9 the loop b' forward to raise the standard harness B, to raise the standard warp, and permit the passage of the doup-warp under the same. When the lever f^2 has reached the vertical position, the pawl f^6 slides over the curved surface of the thrust-block f^7 , the quadrant swings back into the position shown in Fig. 1, and the loop

b' under the strain of the harness is drawn back against the jack b .

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

1. A shedding mechanism of a loom for leno-weaving, having a quadrant connected with the standard harness and operated by the jack controlling the doup-harness, as described.

2. In a shedding mechanism for looms, the combination with the harnesses controlling the standard warp-threads, the doup-harness and the slip-shaft harness, of two adjacent jacks, a double hook to connect with both jacks and connected with the slip-shaft harness, and a quadrant connected with the standard harness and operated by the jack controlling the doup-harness, as described.

3. In a loom for leno-weaving, a dobby having jacks controlling the warp, a double hook connected with the slip-shaft harness and adapted to engage with the adjacent jack and a quadrant operated by one of the jacks and connected with the standard harness, whereby the said harness may be raised and lowered independent of its jack, as described.

4. In a shedding mechanism for a loom for leno-weaving, the combination with the jacks a , b , c and d and their operative connections, of the rock-shaft f' , the lever f^2 and the quadrant f^3 on the rock-shaft, the operating pawl-arm f^4 pivoted on the jack d and the connection between the quadrant and the standard harness comprising the loop b' , whereby the standard warp-threads may be raised for doup-ing, as described.

5. In a shedding mechanism for looms, the combination with a quadrant, a loop connected with the quadrant and the standard harness, of means comprising a lever provided with a thrust-block and connected to the quadrant, a pawl-arm operated by a jack to move the quadrant through the lever, whereby the standard harness is given a half and return motion, as described.

6. In a shedding mechanism for looms, the combination of the following instrumentalities: a jack, a pawl-arm mounted on the jack, a lever provided with a thrust-block, a quadrant connected to the lever, a loop, and connections between the loop, the standard harness, and the quadrant, whereby upon the action of the pawl-arm by the jack to move the quadrant the standard harness is given a half and return motion, as described.

7. In a leno-motion for looms, a loom-dobby and harnesses operated thereby, mechanism connecting the loom-dobby with the harnesses and operated by harness-levers to give a half and return motion to the harnesses controlling the warp-threads used in cross-weaving.

8. In a leno-motion for looms, a loom-dobby and harnesses operated thereby, mechanism

connecting the loom-dobby with the harnesses,
means for operating the mechanism consist-
ing of harness-levers to give a half and return
motion to the harness controlling the cross-
5 threads, and means consisting of a harness-
lever to operate the mechanism and give a full
movement to the harness when not in use for
cross-weaving.

In testimony whereof I have signed my name
to this specification in the presence of two sub- 10
scribing witnesses.

FRANK S. BERRY.

Witnesses:

B. M. SIMMS,

J. A. MILLER, Jr.