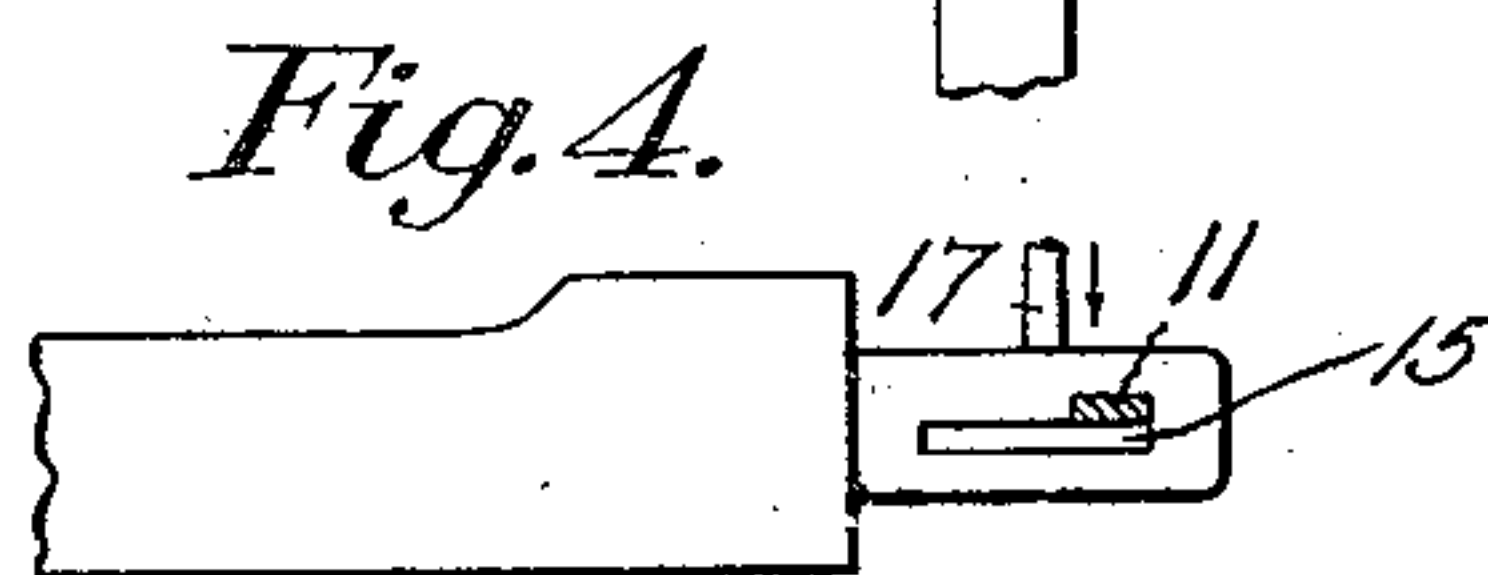
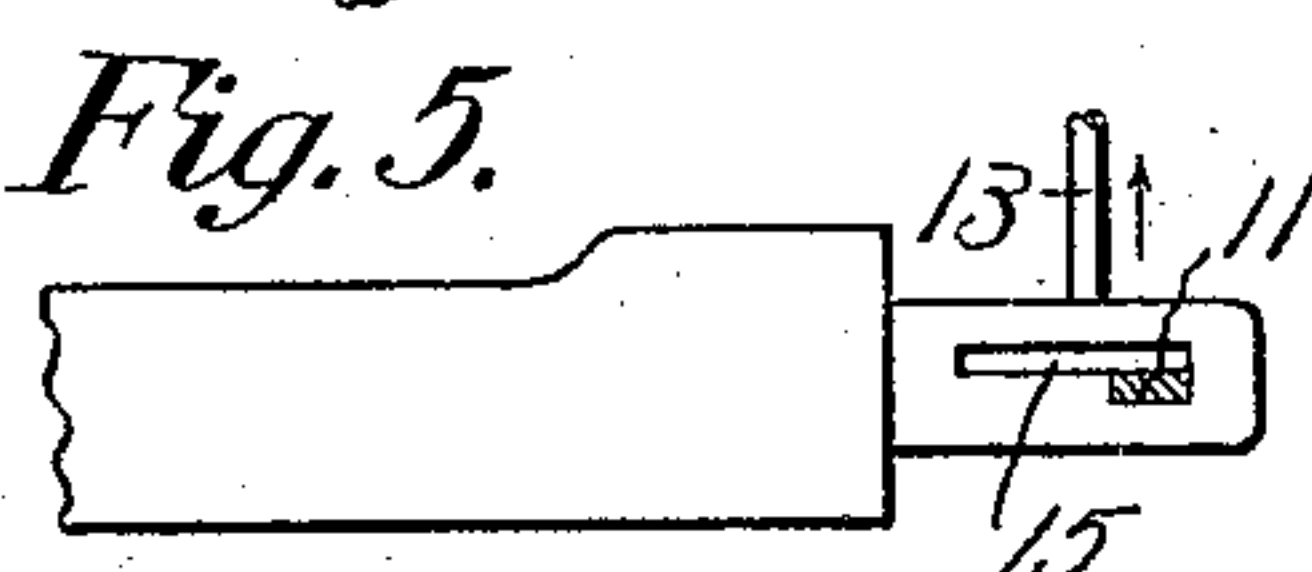
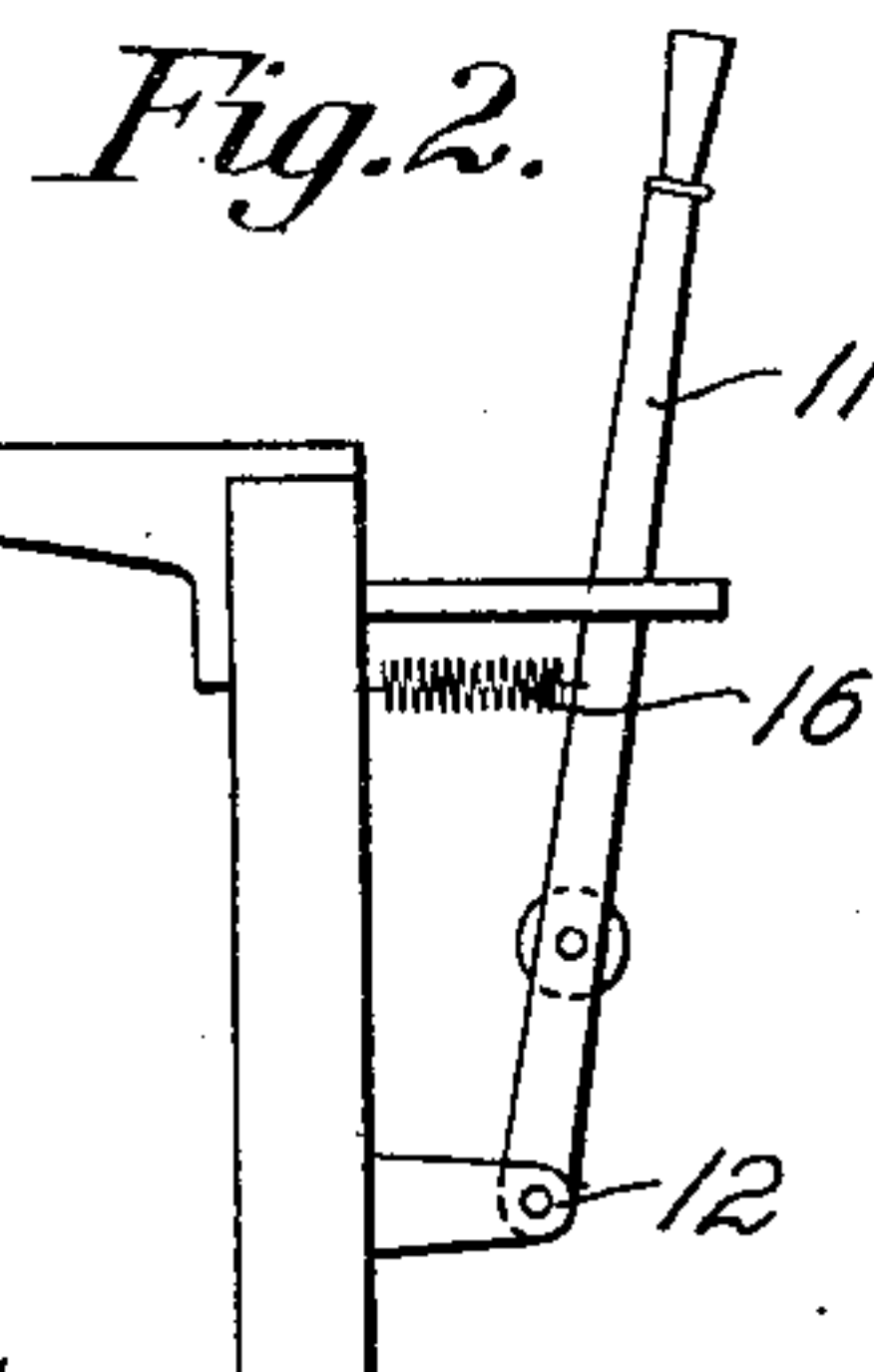
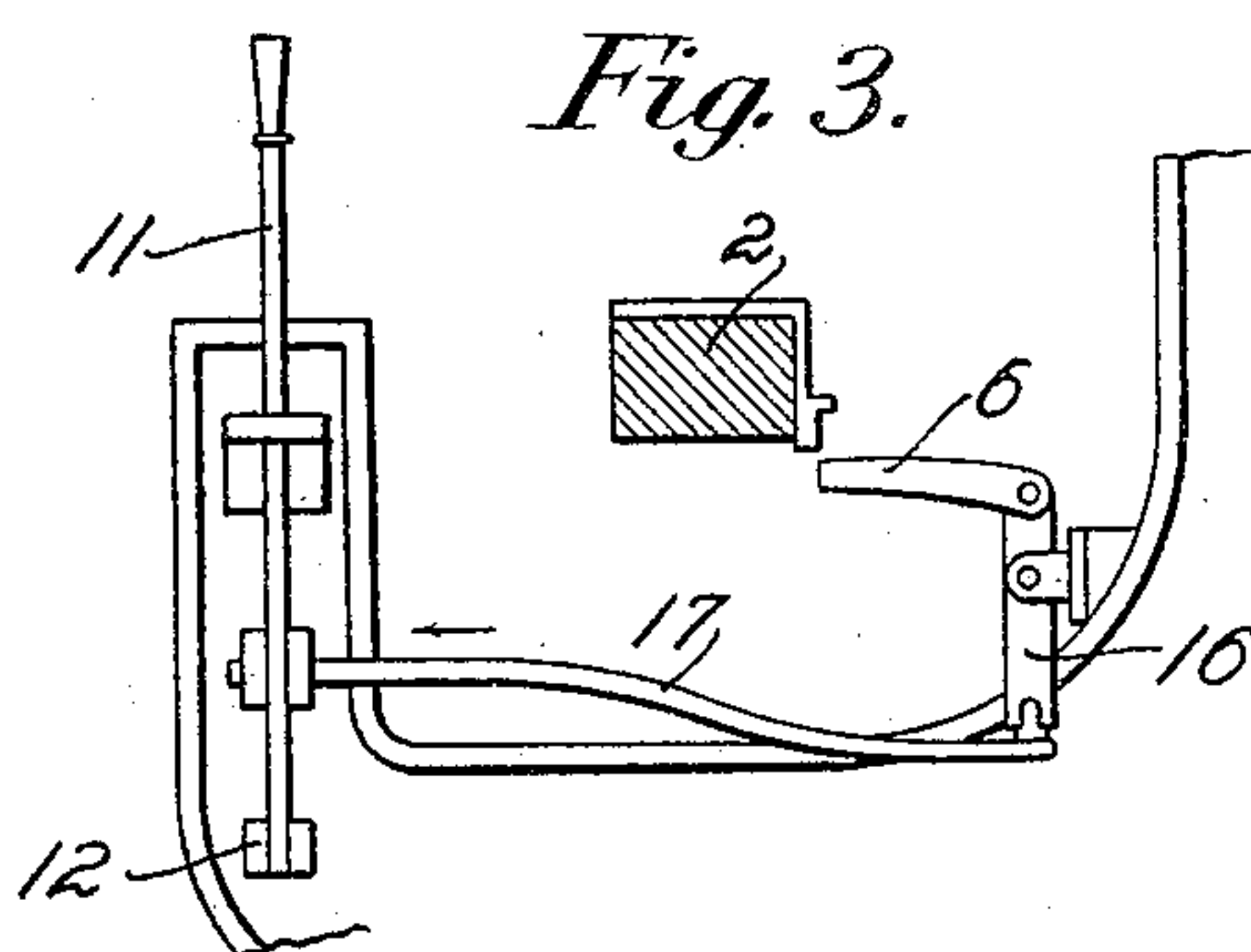
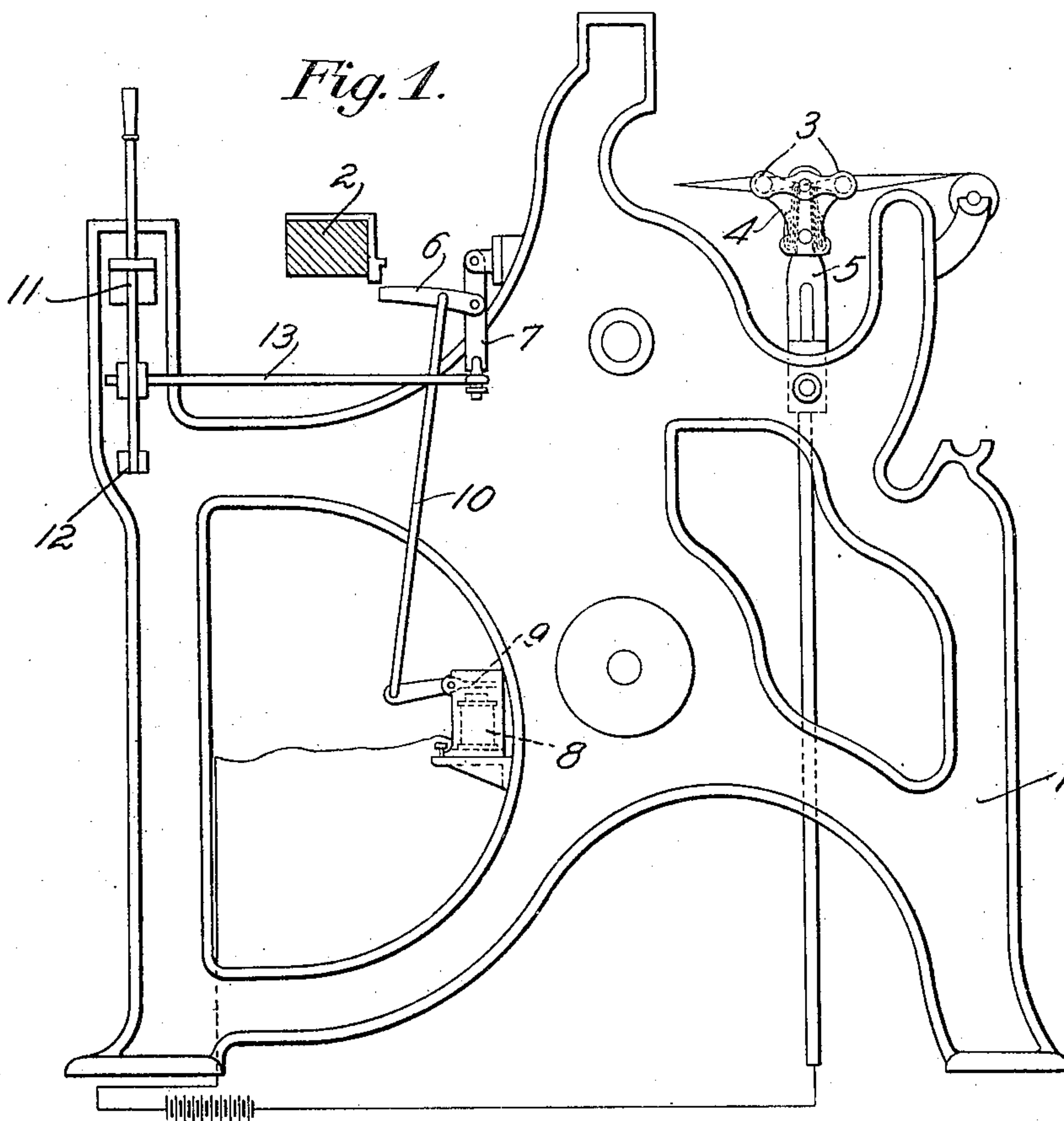


J. K. LANNING.
 WARP STOP MECHANISM.
 APPLICATION FILED MAR. 19, 1909.

976,379.

Patented Nov. 22, 1910.



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 Francis H. Bishop.

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UNITED STATES PATENT OFFICE.

JAMES K. LANNING, OF DORCHESTER, MASSACHUSETTS.

WARP STOP MECHANISM.

976,379.

Specification of Letters Patent.

Patented Nov. 22, 1910.

Application filed March 19, 1909. Serial No. 434,463.

To all whom it may concern:

Be it known that I, JAMES K. LANNING, a citizen of the United States, residing at Dorchester, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Warp Stop Mechanism, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to loom stopping mechanism and as herein shown is more particularly intended for stopping the loom upon the occurrence of warp fault, although it may be utilized to stop the loom upon the occurrence of any thread fault.

In order that the principles of the invention may be readily understood, I have disclosed an embodiment thereof in the accompanying drawing, wherein—

Figure 1 is a side elevation of a loom embodying my invention; Fig. 2 is a detail showing one manner of supporting the shipper; Fig. 3 is a detail representing modified means for operating the shipper; Fig. 4 is a detail in plan representing the manner of operating the shipper shown in Fig. 3; and Fig. 5 is a similar detail representing the manner of operating the shipper shown in Fig. 1.

An object of my invention is to provide simple but effective means, preferably electrically operated, for stopping the loom and preferably upon the backward beat. As herein represented, the loom is stopped in the event of warp failure, but it may be employed in use in the event of weft failure by suitably connecting the bunter operating means with means actuated upon weft fault. It is highly desirable that in the event of thread fault the loom be stopped upon the backward beat of the lay; that is, before the beat-up, thus preventing as far as possible the incorporation of a broken thread into the cloth.

In Fig. 1, I have represented a loom which may be and preferably is of the general construction illustrated in the patent to Coldwell and Gildard, No. 658,237, September 18, 1900, though it will be understood that my invention may be employed in any desired type of loom.

In the drawings, the frame of the loom is represented at 1, the lay at 2, the lease rods at 3, the warp drops or detectors at 4, and the contact bar at 5, the said parts being

preferably of the usual construction, such, for example, as shown in my Patent No. 861,217, July 13, 1907. While an electrical stop motion is here shown, it is to be understood that I am not limited thereto.

I suitably mount a bunter or knock-off finger normally held stationary and out of the path of movement of the lay and move it into the path of the lay, at such time and in such manner that it is struck by the lay upon the backward beat of the latter, connections being provided between the bunter and the shipper immediately to stop the loom. The said bunter or knock-off finger is represented in Fig. 1 at 6 and is there shown as pivoted upon the knock-off lever 7 mounted upon the frame of the loom. Inasmuch as the bunter is normally stationary and is moved into operating position only in the event of thread failure, a simple construction of parts may be utilized. While the bunter may be moved into operative position in any suitable manner, in the event stated, I have represented the same as operated by a magnet 8 mounted upon the loom frame and in circuit as shown with the contact bar 5 in such manner as to actuate the armature 9, thereby elevating the lift wire 10 and lifting the bunter 6 into the path of the lay when upon its backward beat.

The shipper lever, which may be any suitable loom stopping member, is represented at 11, it being herein shown as pivoted at 12 upon the loom frame and connected by a link 13 with the lever 7. The said shipper lever is preferably positioned in a shouldered slot 15 in the loom frame, and when released from the shoulder it is drawn by the coiled spring 16 toward the opposite end of the slot, thereby to shift the belt to stop the loom. In the construction shown in Figs. 1 and 5, the shoulder of the slot is so positioned that when the finger or bunter 6 is impinged upon the shipper is pulled through the connecting rod 13 from behind the shoulder in the direction of the arrow in Fig. 5.

In certain construction of looms, the shoulder of the slot 15 instead of being placed as represented in Fig. 5 is positioned as represented in Fig. 4. In such constructions it is preferable to push the shipper into the slot 15 past the shoulder. To do this I may mount the finger or bunter 6 upon a lever 16 having its fulcrum intermediate its ends and connected to a rod 17 in such

manner as to move the latter in the direction of the arrow shown in Figs. 3 and 4, so as to push the shipper 11 past the shoulder and into the main portion of the slot 15.

5 A loom stop mechanism constructed in accordance with my invention is of exceedingly simple construction and of comparatively few parts, and which may be held stationary when the loom is running under
10 normal conditions. It is therefore distinguished from looms having a feeler acting to impart constant movement to a bunter or the like to move it out of the path of the lay, but permitting it to remain in such
15 path in the event of warp failure. Such constructions require a multiplicity of constantly moving parts. The mechanism herein disclosed acts to stop the loom upon the backward beat of the lay and immediately
20 upon the occurrence of thread failure.

Having thus described one illustrative embodiment of my invention, I desire it to be understood that although specific terms are employed, they are used in a generic and
25 descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims.

1. Warp stop mechanism for looms comprising in combination detectors adapted to be displaced upon warp fault, a knock-off
30 lever mounted upon the loom frame in the rear of the lay, a bunter mounted upon said knock-off lever, electrical connections from said detectors for positioning the bunter
35 for loom stopping actuation upon a backward beat of the lay, a shipper lever mounted in front of the lay, and a link connecting said knock-off lever and said shipper
40 lever to actuate the latter.

2. Stopping mechanism for looms comprising in combination a knock-off lever mounted upon the loom frame in the rear
45 of the lay, a bunter mounted upon said knock-off lever, connections to said bunter for positioning the latter for loom stopping actuation upon a backward beat of the lay in the event of thread fault, a shipper lever

and a direct connection from said knock-off lever to said shipper lever to actuate the latter in the event of thread fault. 50

3. Stopping mechanism for looms comprising in combination a knock-off lever mounted upon the loom frame in the rear of the lay, a bunter mounted upon said knock-off
55 lever, connections to said bunter for positioning the latter for loom stopping actuation upon a backward beat of the lay, in the event of thread fault, a shipper lever in front of the lay, and a link directly connecting said knock-off lever and shipper lever, said link being connected to said levers
60 below the level of the lay.

4. Stopping mechanism for looms comprising in combination a vertical knock-off
65 lever mounted upon the loom frame in the rear of the lay, a bunter upon said knock-off lever, connections for positioning said bunter for loom stopping actuation, upon a rearward beat of the lay in the event of thread
70 fault, a shipper lever in front of the lay, and a link connected to said knock-off lever below the bunter and below the level of the lay and directly connected to the shipper lever below the level of the lay. 75

5. Stopping mechanism for looms comprising in combination a knock-off lever mounted upon the loom frame in the rear of the lay, a bunter mounted upon said knock-off
80 lever, connections for positioning said bunter for loom stopping actuation, upon a backward beat of the lay, in the event of thread fault, a shipper lever in front of the lay, and means arranged below the level of the lay for connecting the knock-off lever
85 and the shipper lever, whereby the loom is stopped upon the backward beat of the lay in the event of thread fault.

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

JAMES K. LANNING.

Witnesses:

EVERETT S. EMERY,
THOMAS B. BOOTH.