

No. 773,587.

PATENTED NOV. 1, 1904.

C. F. PERHAM.
LOOM.

APPLICATION FILED AUG. 28, 1900.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1.

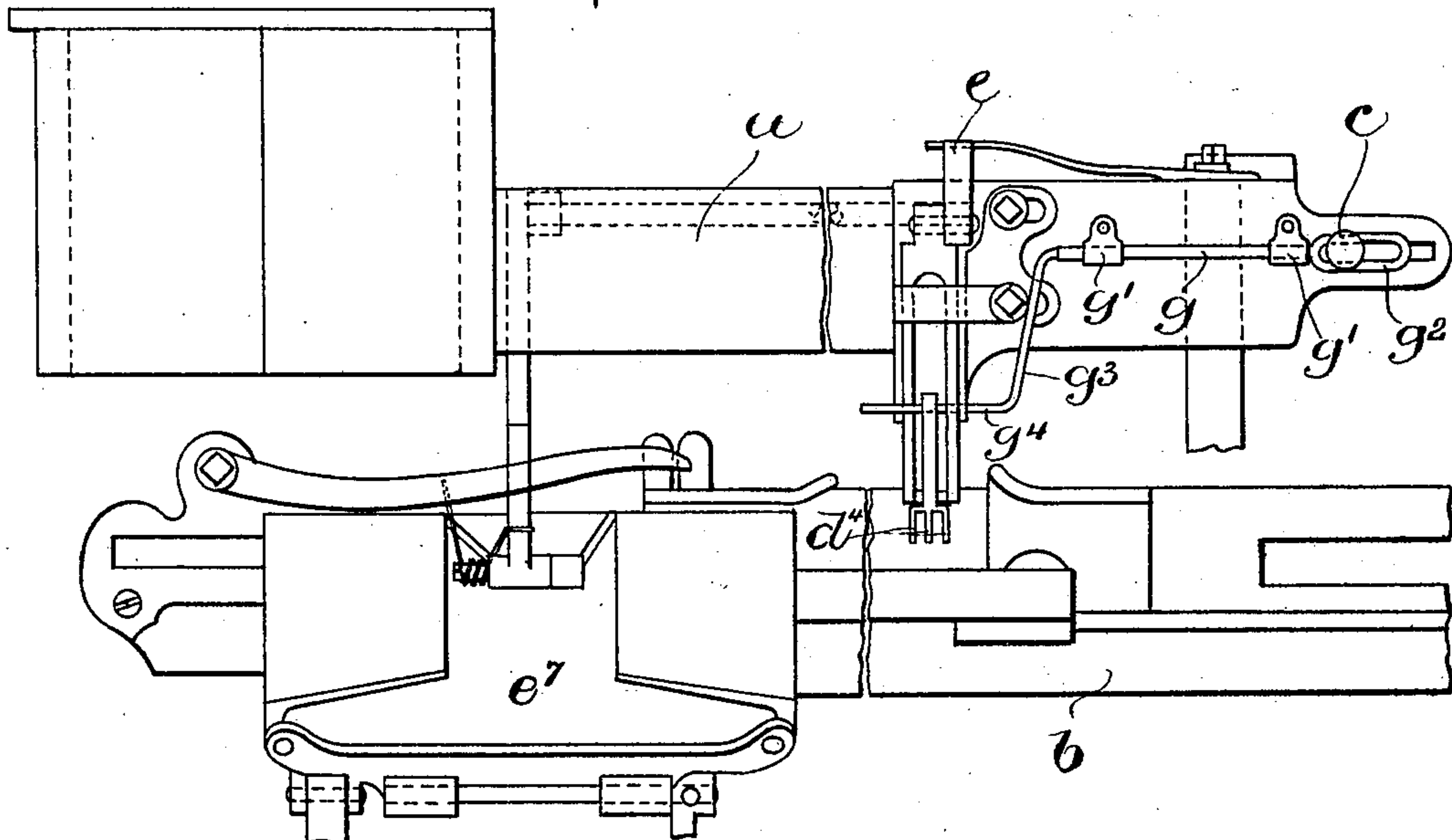
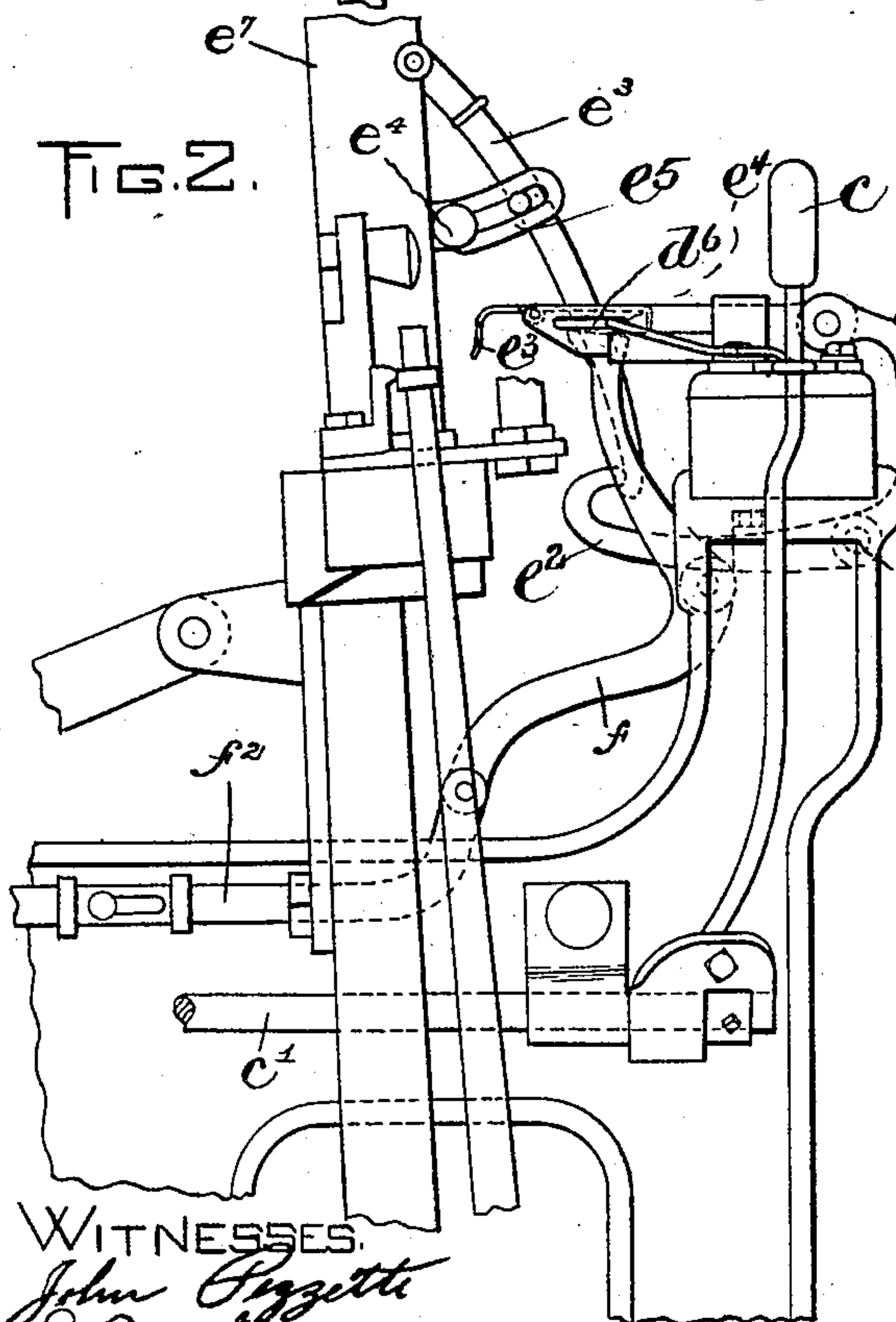
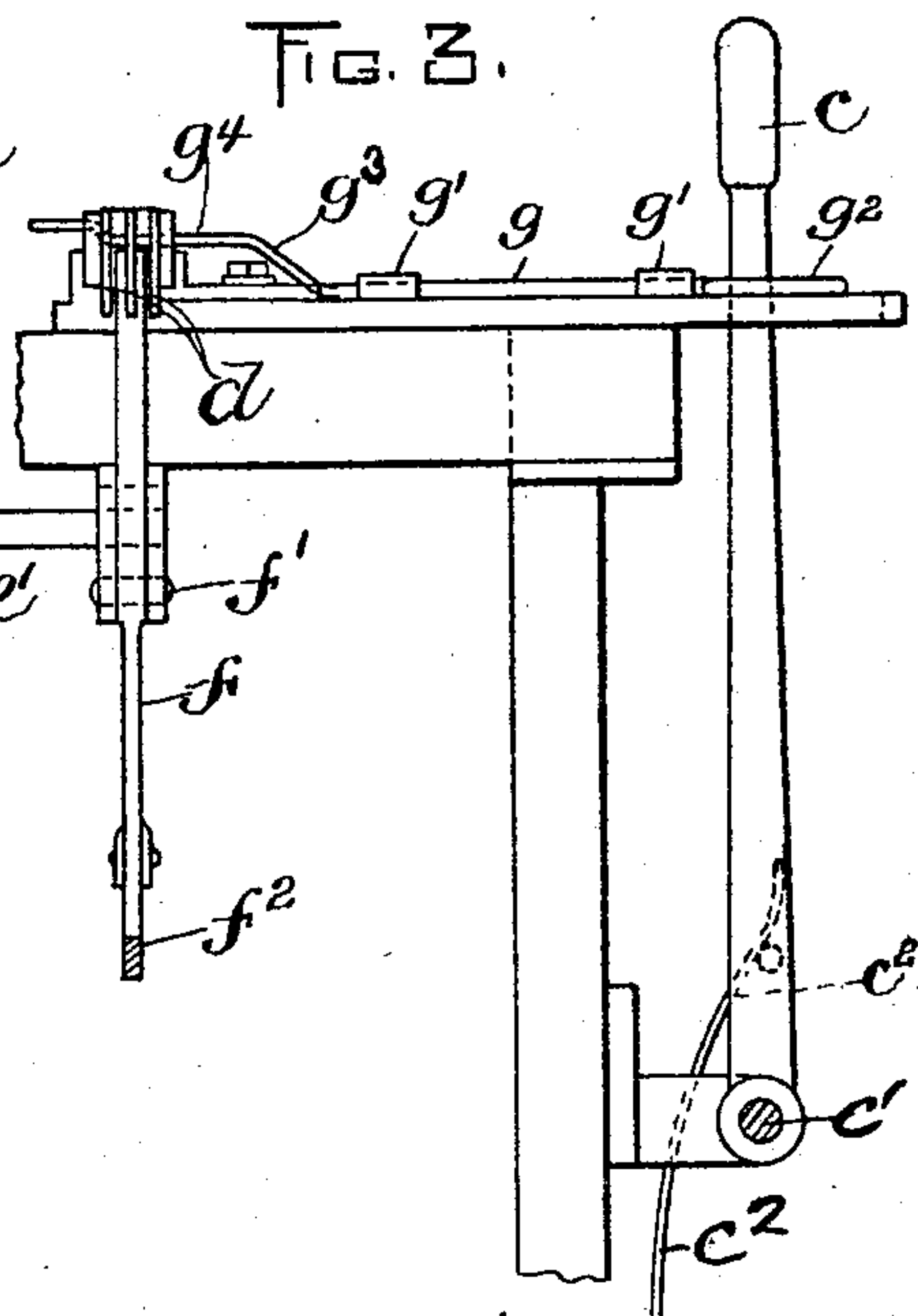


FIG. 2.



WITNESSES:
John Pizzetti
E. Barthelemy

FIG. 3.



INVENTOR:
C. F. Perham
by Wright Brown & Quincy
his attys

No. 773,587.

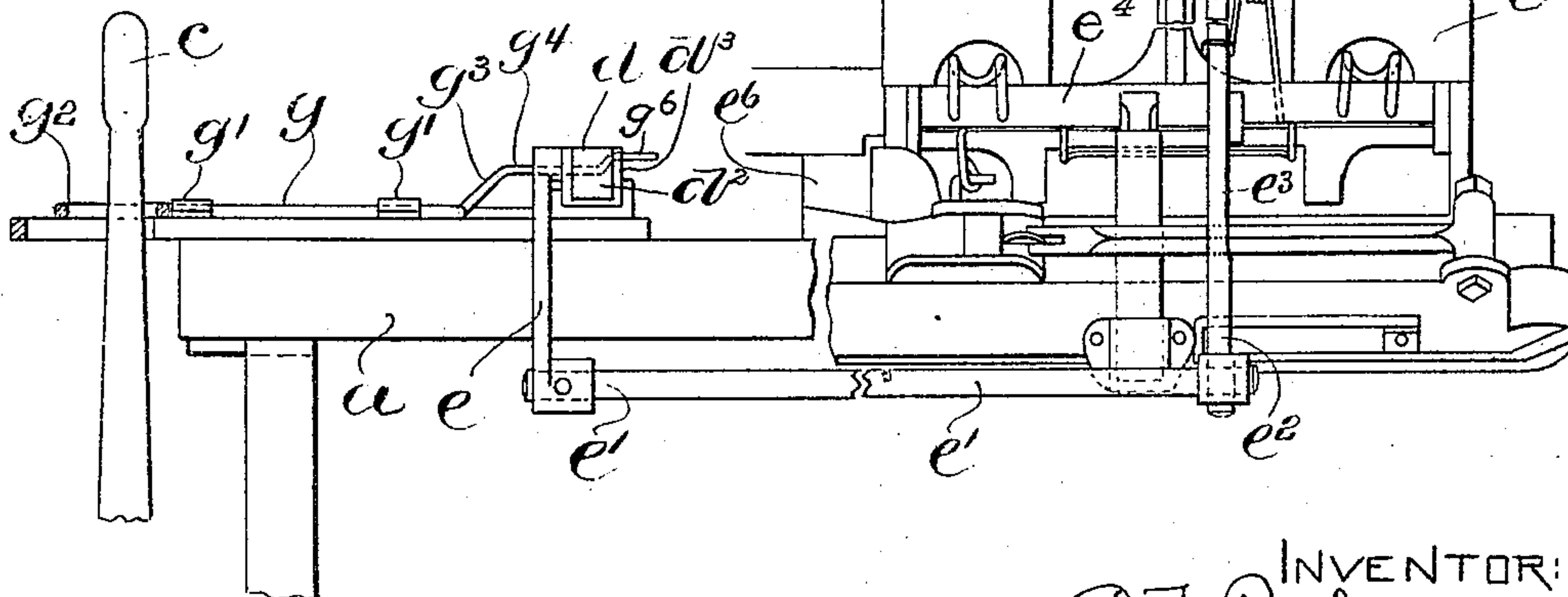
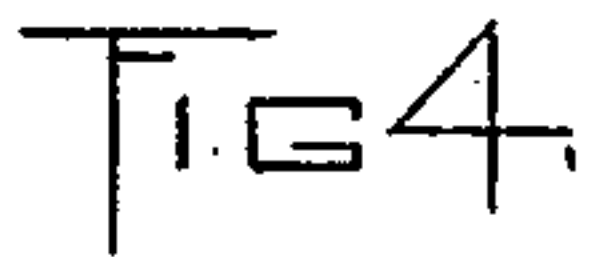
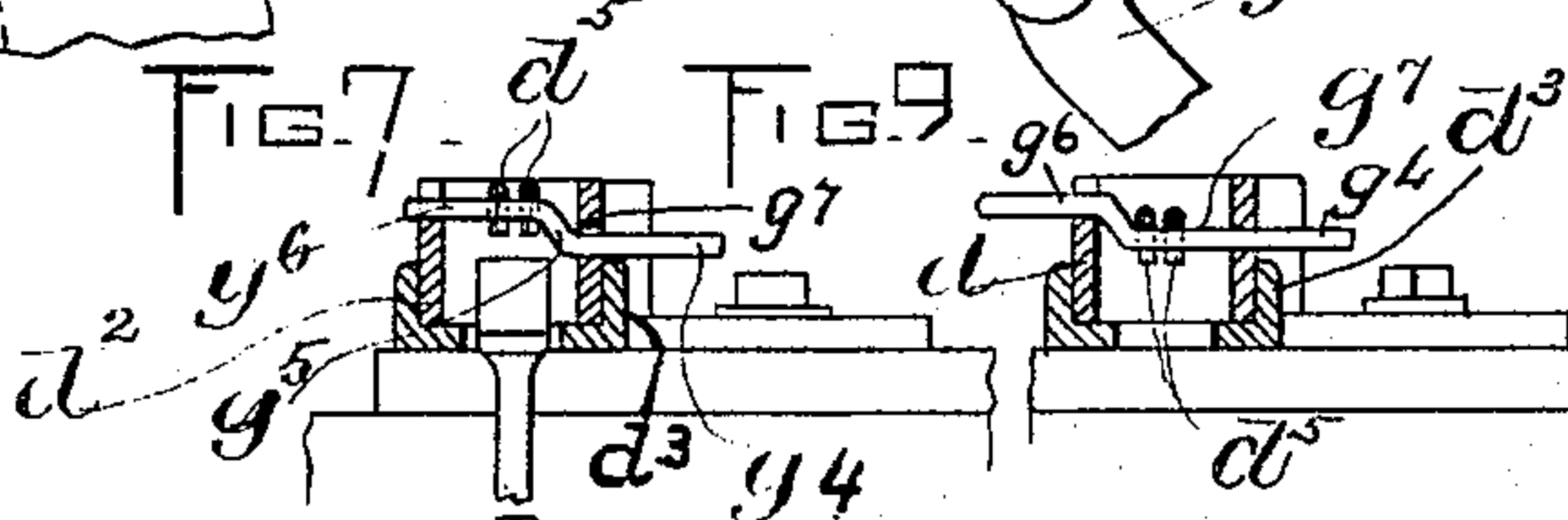
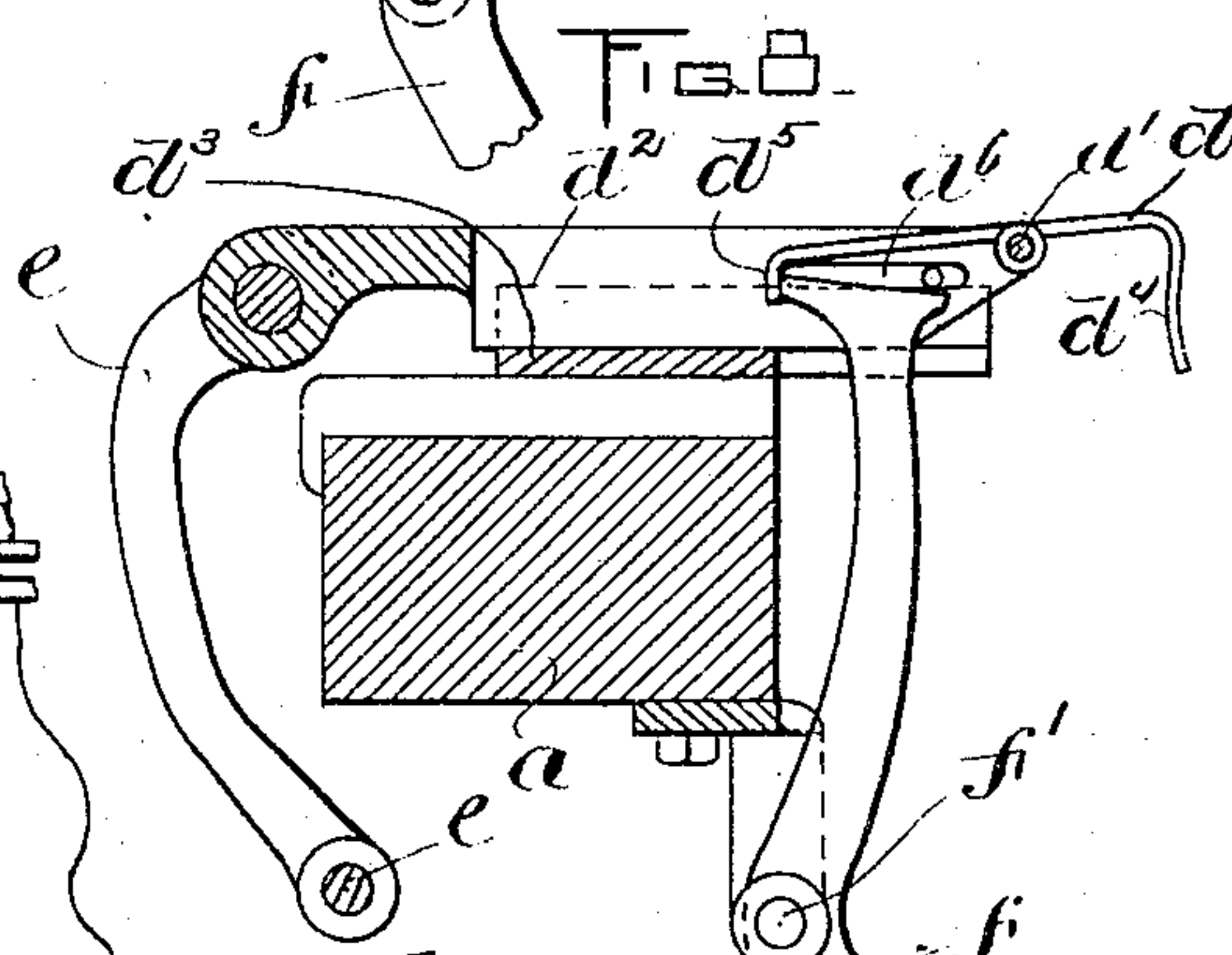
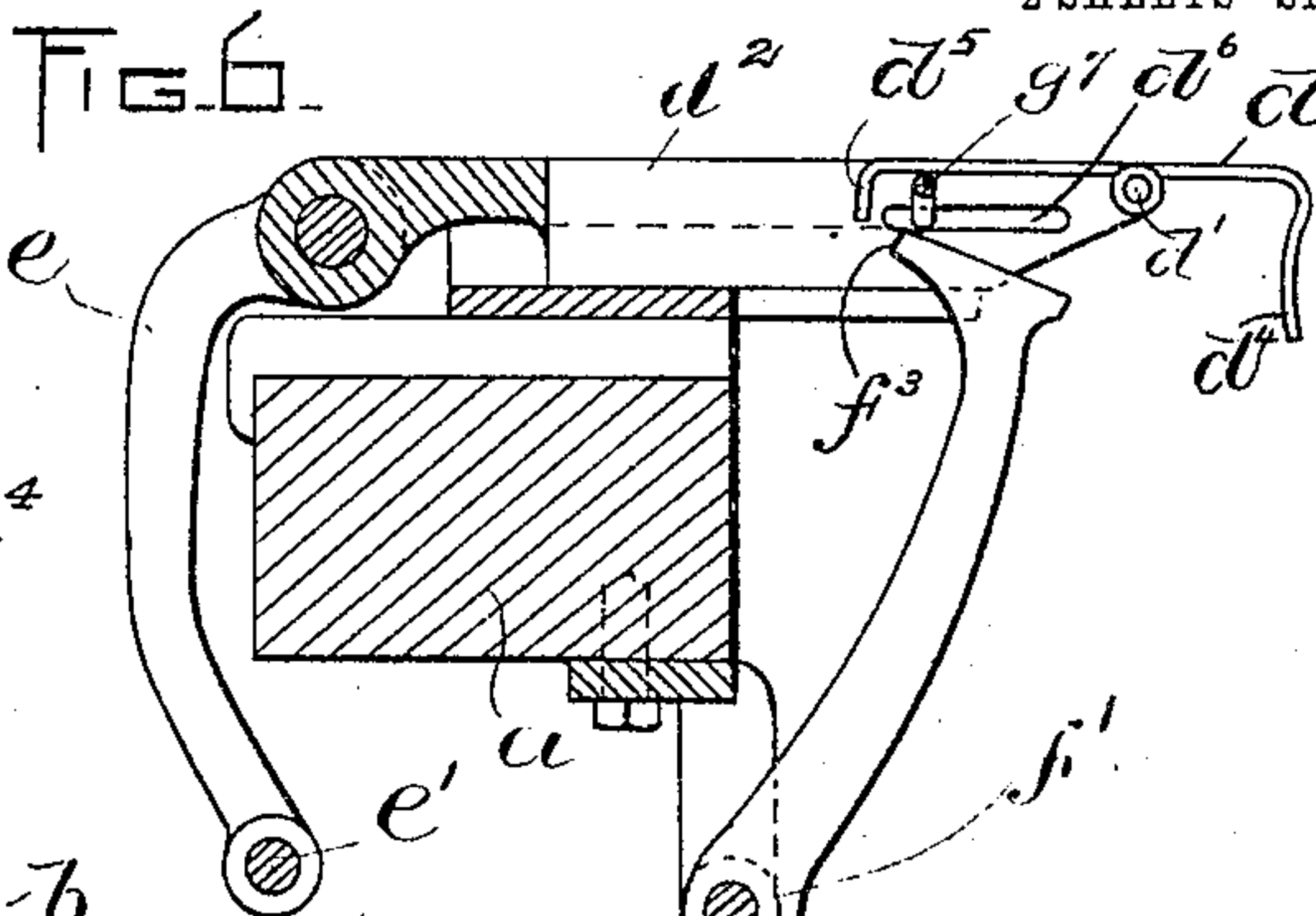
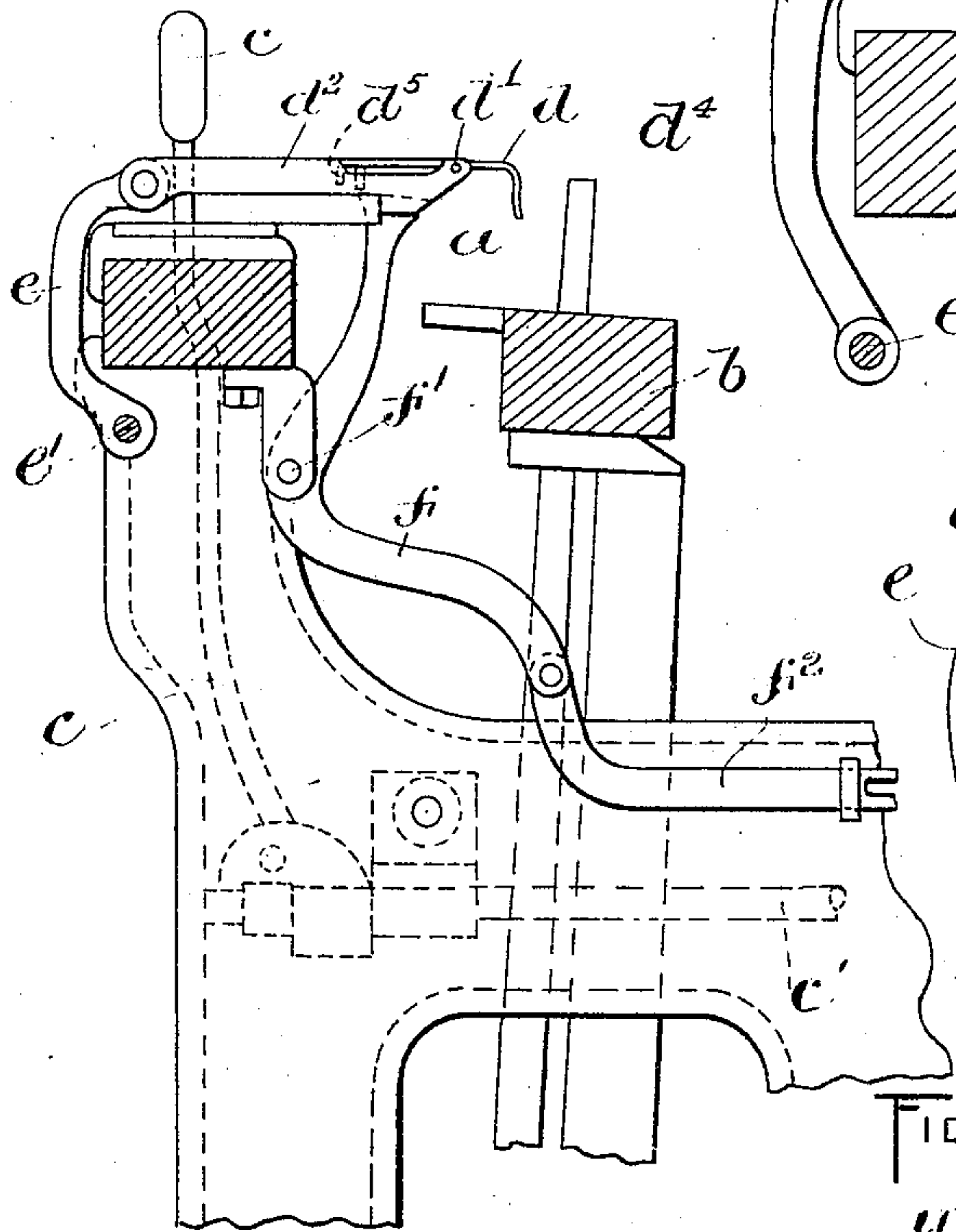
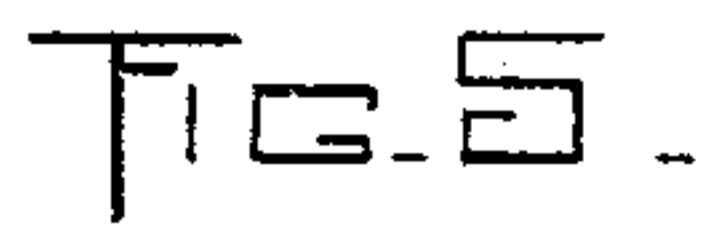
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NO MODEL.

2 SHEETS—SHEET 2.



WITNESSES:

WITNESSES
John Pizzette,
Ed. Archuleta

INVENTOR:

C. F. Perlman

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his attys

UNITED STATES PATENT OFFICE.

CHARLES F. PERHAM, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO PERHAM-STICKNEY COMPANY, OF TEWKSBURY, MASSACHUSETTS, A CORPORATION OF MAINE.

LOOM.

SPECIFICATION forming part of Letters Patent No. 773,587, dated November 1, 1904.

Application filed August 28, 1900. Serial No. 28,280. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. PERHAM, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Looms, of which the following is a specification.

This invention has relation to looms, and more particularly to the weft-fork mechanism in those looms in which the fork accomplishes other functions than that of merely stopping the loom on the breakage or failure of the weft. Where the fork is employed in connection with weft-replenishing mechanism, for instance, it frequently occurs that upon the stoppage of the loom, by reason of a broken warp-thread or for repairs, the attendant in the course of his work turns the loom a few picks or in some cases even a fraction of a pick and in so doing causes the fork to operate the weft-replenishing mechanism, and in some classes of looms this actuation of the fork and weft-replenishing mechanism effects a starting of the loom automatically. In either case undesirable results occur—to wit, either the improper actuation of the weft-replenishing mechanism, with the consequent breaking out of the warp, and perhaps the harness, or else the injury of the attendant, who may be caught unawares while having his arm or hand in the path of the shuttle, the lay, or some other movable part of the loom.

The present invention has for its object the provision of mechanism for automatically preventing the actuation of the weft-replenishing mechanism or the fork when the power is cut off from the loom.

In the embodiment of the invention which is illustrated upon the drawings forming a part of this specification a device is connected with the shipper-lever and operates in such a way that when the lever is thrown to an inoperative position to cut off the power or unclutch the driving-pulley from the shaft the fork is likewise held in an inoperative position, whereby it is impossible for it to be actuated and to thereby cause the actuation of the weft-replenishing devices or other mechanism operated or controlled by or connected with the fork.

Referring to the said drawings, Figure 1 represents in plan view the front end of a loom, all the parts being omitted with the exception of the lay, the breast-beam, and the parts mounted immediately thereupon. Fig. 2 represents an end elevation of the same. Fig. 3 represents a rear view of the end of the breast-beam upon which the mechanism embodying the present invention is mounted. Fig. 4 represents a front elevation of the loom. Fig. 5 represents a front and rear section through the front portion of the loom and shows the actuator for the fork. Figs. 6, 7, 8, and 9 illustrate the operation of the invention.

It will be understood that the invention may be employed in connection with any kind or style of loom and that although I have shown it in connection with a particular form of weft-replenishing mechanism, yet I am not limited to its application thereto and reserve the right to employ it on looms containing other forms of weft-replenishing mechanism or other mechanism actuated or controlled by the weft-fork.

On the drawings, *a* indicates the breast-beam of the loom, and *b* the lay thereof.

c indicates the shipper-lever, mounted, as shown, at the end of the loom and connected with the rock-shaft *c'* to operate the clutch mechanism. (Not shown.) The shipper-lever is adapted to be held outward by springs *c''*, as usual.

d indicates the weft-fork, which is pivoted at *d'* in a slide *d''*, mounted in a suitable guide-box *d'''*. The rear end of the slide is connected by an arm *e* with the rock-shaft *e'*, arranged under the breast-beam *a*, said rock-shaft having a hooked arm *e''*, adapted to engage and operate the lever *e'''* of the weft-replenishing mechanism. Said replenishing mechanism forms no part of the present invention, it sufficing to state that said mechanism includes a detent rock-shaft *e''''*, which is operated by the arm *e'''* through the medium of the cam-lever *e'''''*, and that by the rocking of the said shaft the shuttles are permitted to drop successively into the shuttle-box as occasion requires. Under normal conditions the hooked

arm e^2 lies below and out of the path of the lever e^3 ; but upon the rocking of the shaft e' , due to the actuation of the slide d^2 , a switch or deflector e^6 is thrown into operative position across the path of the incoming shuttle, and a fresh shuttle is dropped by the detent mechanism into the shuttle-box, said shuttles being arranged in a pile in a reservoir or chute e^7 .

10 The actuator which coöperates with the fork consists of an elbow-lever f , fulcrumed at f' to a bracket underneath the breast-beam, said actuator being operated by suitable mechanism, such as a cam on a crank-shaft adapted to engage a pivoted arm (not shown) connected by a link f^2 with the said lever. The inner end of the fork is bent downwardly, as at d^4 , so as to engage the weft-thread when it is left in the shed, and the actuator f is so
20 timed that its end f^3 moves forwardly under the bent end d^5 of the fork immediately after the end d^4 thereof engages the weft-thread and is moved downwardly thereby. In case of the breakage or failure of the weft-thread
25 the end d^4 is not engaged, and consequently the actuator in its forward movement engages the hooked end d^5 of the fork and carries it forward, thereby moving the slide and actuating the rock-shaft e' , with the consequent
30 operation of the weft-replenishing mechanism.

As thus far described the mechanism forms no part of my invention, save that it is combined therewith and is controlled thereby.

35 As previously stated, any other form of weft-replenishing mechanism may be used instead of that which I have described.

The present invention contemplates the employment of a device for preventing the actuation of the weft-fork or the mechanism actuated or controlled thereby and in the present embodiment consists of a slide g , mounted to slide in guides g' g' upon the top of the breast-beam. At one end the slide is formed
45 with a loop g^2 , through which the shipper-lever extends, so that when the said lever is thrown outward to stop the loom the slide moves with it. The opposite end of the slide is bent obliquely upward and rearward, as at g^3 ,
50 and then extends approximately parallel to the rear edge of the breast-beam, as at g^4 . The portion g^4 projects through the box d^3 (see Figs. 7 and 9) and under the front portion of the fork d . It is bent at g^5 to provide two
55 operative portions g^6 g^7 , located in different horizontal planes.

When the shipper is in its operative position, the slide is moved so that the portion g^7 thereof rides beneath the fork and permits
60 the latter to drop down into operative position to be engaged by the actuator; but when the shipper is moved to its inoperative position

the slide is moved with it to bring the portion g^6 thereof under the fork, and said part by reason of its being in a plane above that in which g^7 lies holds the fork upward and prevents it from dropping into operative position, as clearly shown in Figs. 6 and 7.

In order to permit the movement of the slide d^2 , the latter is slotted at d^6 , so that it may be moved relatively to the end g^4 , passing through the slot.

From this description it is evident that when the shipper is moved to inoperative position the fork is so held that it is impossible for it to cause the actuation of the weft-replenishing mechanism or other mechanism controlled thereby, even though the operative actuate the loom by hand.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. In a loom, the combination with weft-replenishing mechanism, of a shipper, and means for preventing the actuation of the weft-replenishing mechanism when the shipper is in an inoperative position.

2. In a loom, the combination with a shipper, a weft-fork, and an actuator therefor, of means for preventing the operation of the weft-fork by the actuator when the shipper is in an inoperative position.

3. In a loom, the combination with a shipper, a weft-fork, an actuator therefor, and operative mechanism operated or controlled by said weft-fork, of means coacting with the shipper for preventing the actuation of said operative mechanism.

4. In a loom, the combination of a shipper, weft-fork mechanism, and a cam-slide controlled by the shipper for preventing the accidental operation of the weft-fork mechanism when the shipper is in an inoperative position.

5. In a loom the combination of a shipper, weft-fork mechanism, and a device located on the breast-beam connected to the shipper and movable therewith for preventing the accidental operation of the weft-fork mechanism when the shipper is in an inoperative position.

6. In a loom the combination of a shipper, weft-fork mechanism, and a slide on the breast-beam controlled by the shipper and adapted to hold the weft-fork in an inoperative position.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES F. PERHAM.

Witnesses:

M. B. MAY,

E. BATCHELDER.