

No. 780,715.

PATENTED JAN. 24, 1905.

J. FORMES.
SCUTTLE.

APPLICATION FILED MAY 20, 1904.

2 SHEETS—SHEET 1.

Fig: 1.

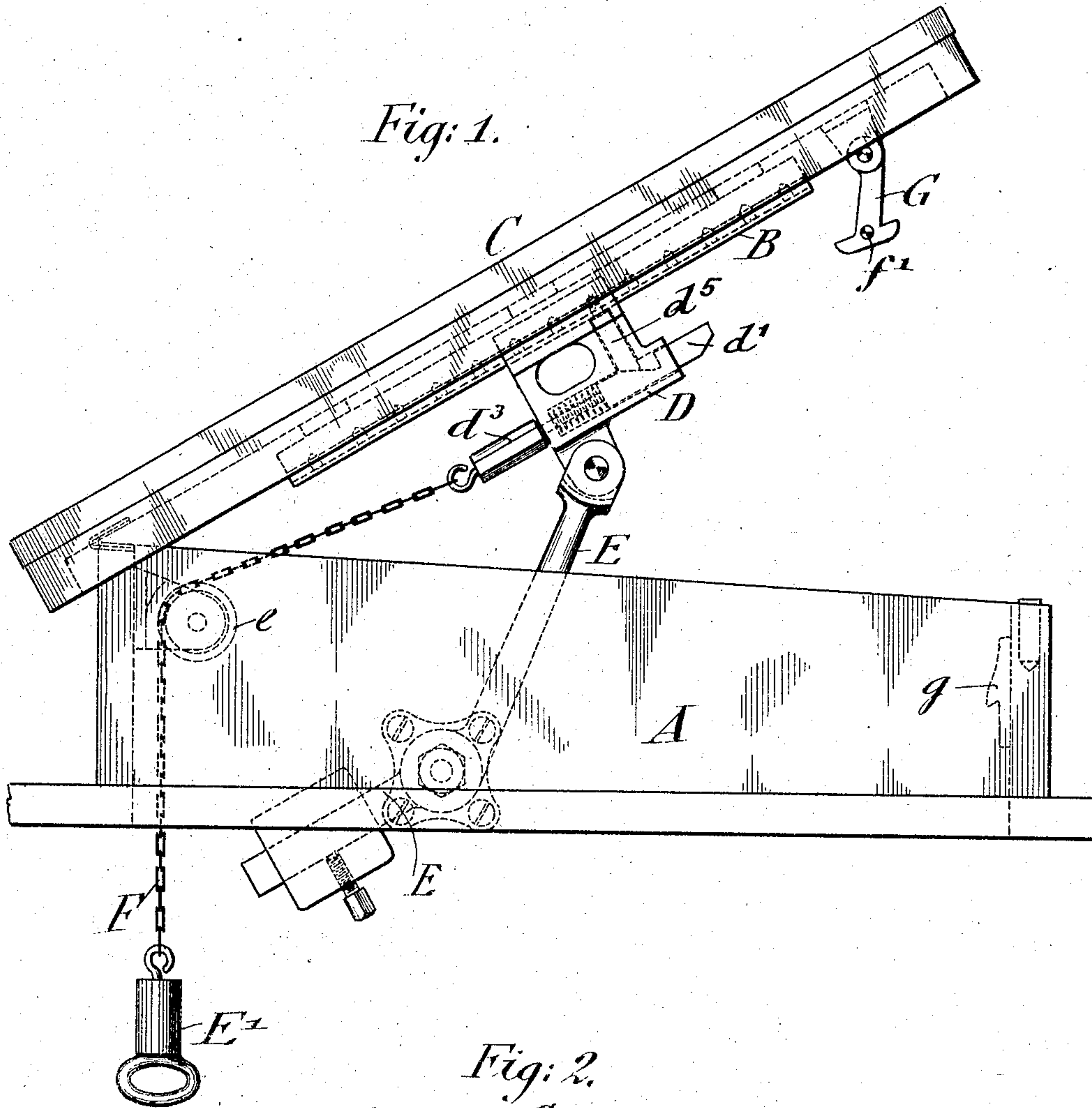
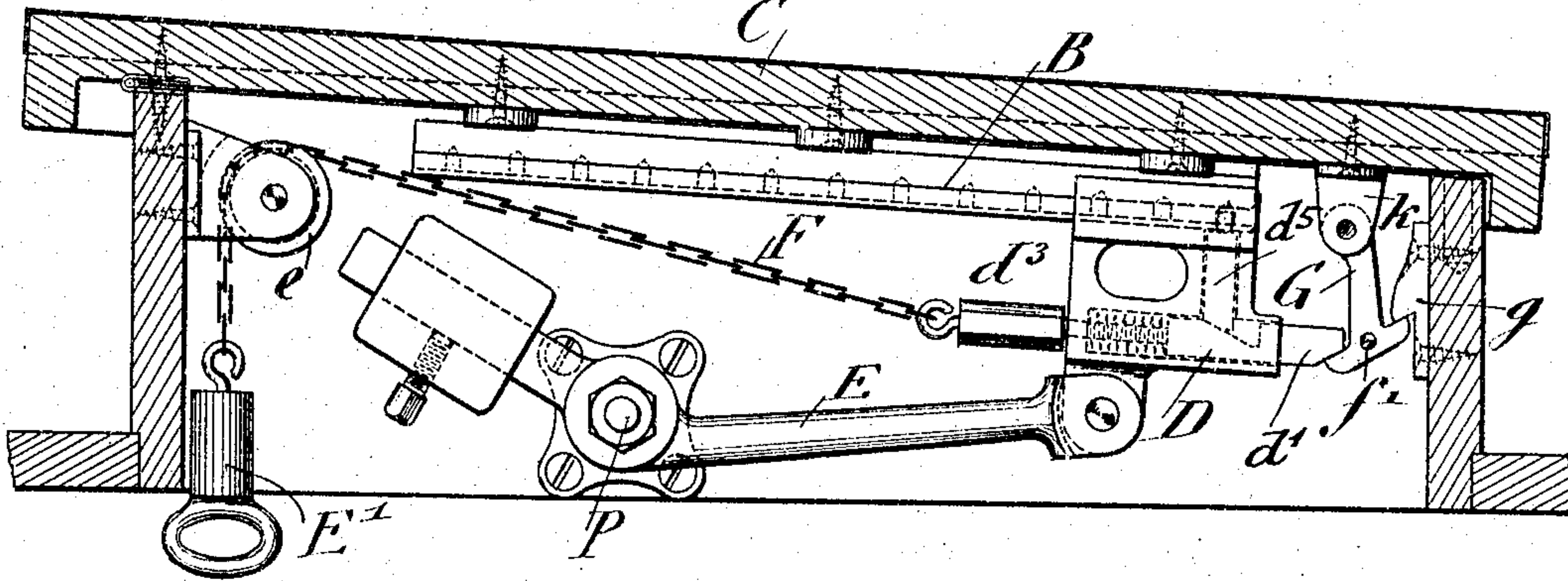


Fig: 2.



Witnesses
Henry J. Substier.
W. E. Beckwith

By *his* Attorney, *John. Permes*
James Miles

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2 SHEETS—SHEET 2.

Fig. 3.

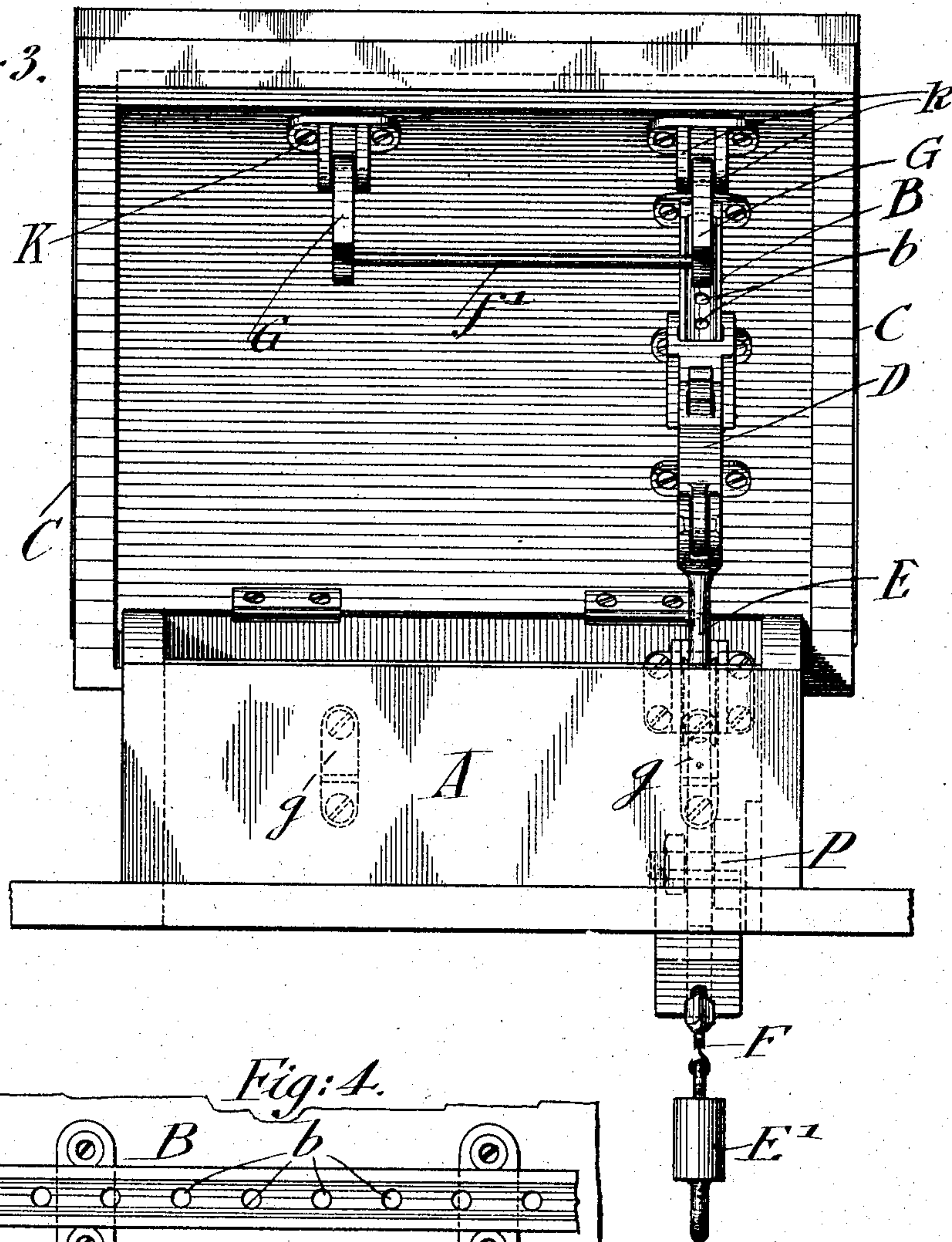


Fig. 4.



Fig. 5.

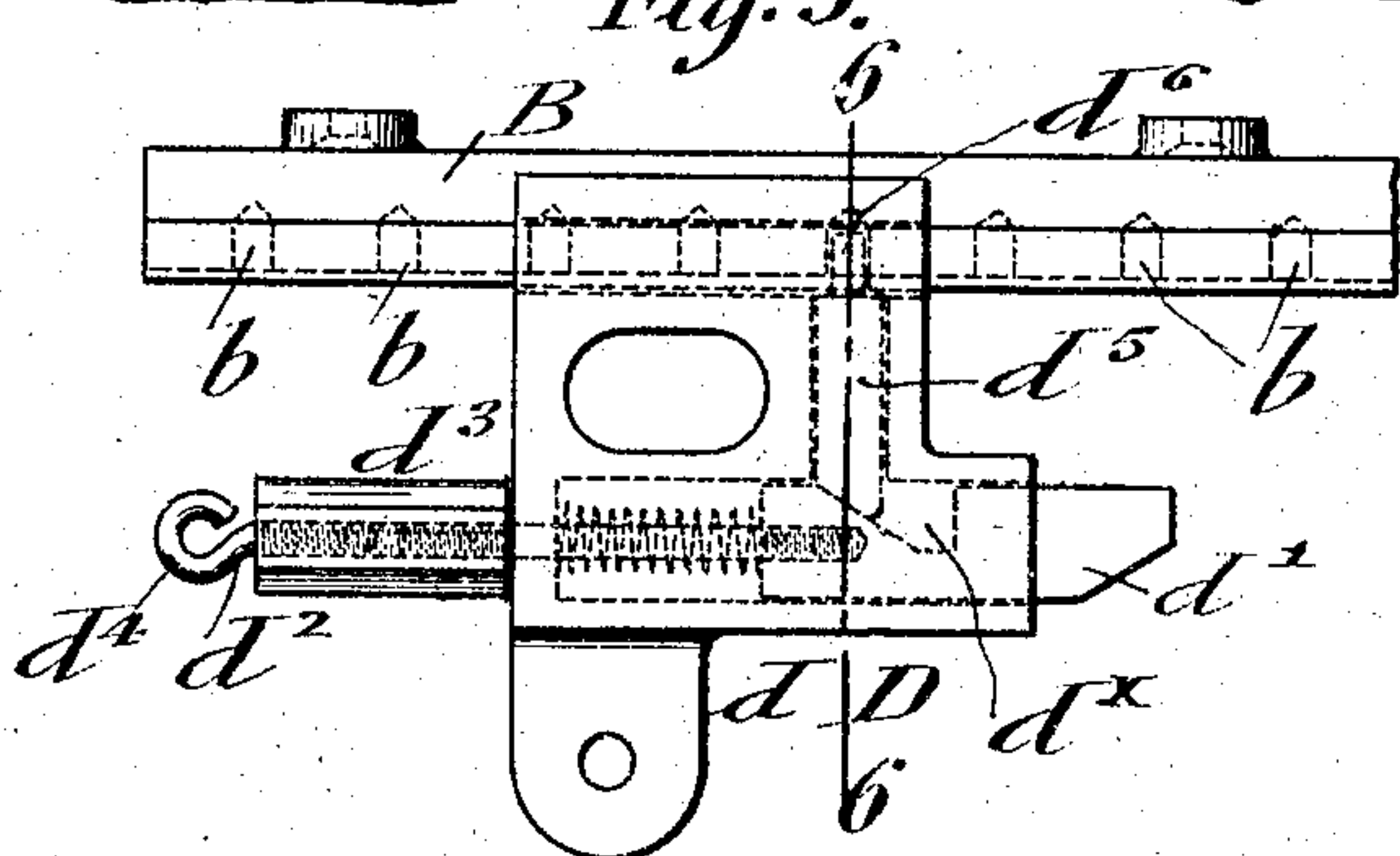
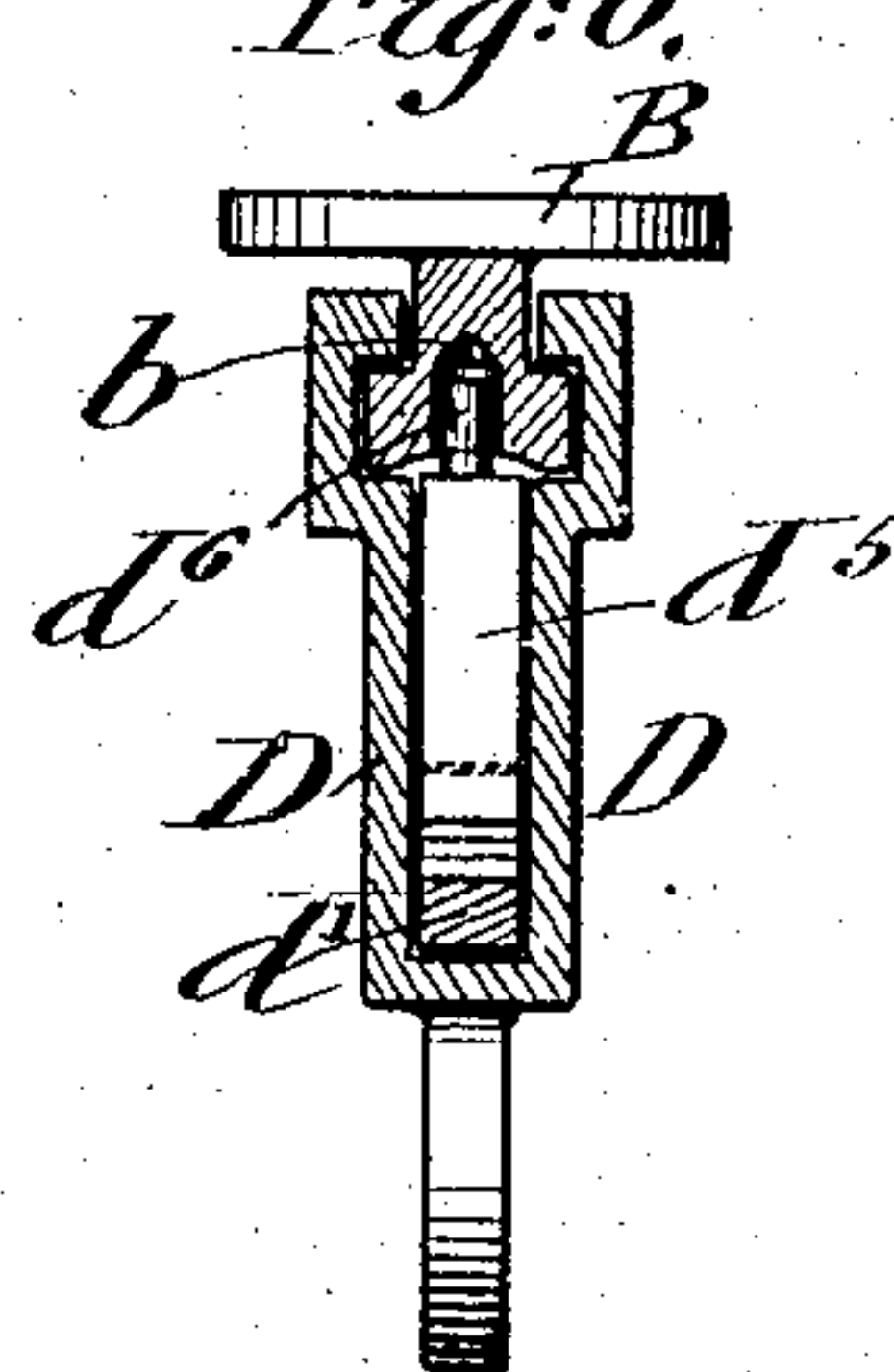


Fig. 6.



Witnesses
Henry J. Lachier
W. H. Lachier

Inventor
John Formes
By his Attorneys
Gruenewald

UNITED STATES PATENT OFFICE.

JOHN FORMES, OF NEW YORK, N. Y.

SCUTTLE.

SPECIFICATION forming part of Letters Patent No. 780,715, dated January 24, 1905.

Application filed May 20, 1904. Serial No. 208,900.

To all whom it may concern:

Be it known that I, JOHN FORMES, a citizen of the United States, residing in New York, borough of Queens, in the State of New York, have invented certain new and useful Improvements in Scuttles, of which the following is a specification.

This invention relates to certain improvements in the scuttle for which Letters Patent were granted to me on December 17, 1901, No. 689,044, whereby the construction is considerably simplified and rendered more effective, and the scuttle may be firmly locked into raised position and automatically unlocked for opening and locked when in closed position from any convenient point; and for this purpose the invention consists of a scuttle comprising a scuttle-frame, a cover hinged thereto, a stationary perforated guide-rail at the under side of the cover, a counterbalanced slide-piece moving on said rail, a spring-actuated latch in said guide-piece, a gravity-latch at right angles to the main latch and operated by the same for locking into one of the perforations in the guide-rail, the auxiliary latch being released by gravity but positively operated by the main latch when the cover is to be raised, a weighted chain attached to the rear end of the main latch and provided with a suitable counterbalancing-weight, locking-latches pivoted to the under side of the cover in front of the guide-rail, and a keeper on the scuttle-frame coöperating with the pivot-latches and the main latch for locking or releasing the cover from the scuttle-frame when the cover is to be closed or opened.

The invention consists, further, of certain details of construction and other novel features, which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved scuttle, showing the cover in raised position. Fig. 2 is a vertical longitudinal section showing the cover in closed position. Fig. 3 is an end elevation of the scuttle. Fig. 4 is a detail bottom view of the guide-rail attached to the under side of the cover. Fig. 5 is a detail side eleva-

tion of the guide-rail, guide-piece sliding thereon, and latches in said guide-piece; and Fig. 6 is a vertical transverse section on line 6 6, Fig. 5.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A designates a scuttle-frame, to which is hinged at one side the usual scuttle-cover C. To the under side of the cover and preferably near one side of the same is attached a guide-rail B, which is made of T-shaped cross-section and provided with a number of perforations *b* at suitable distances from each other. On the rail is guided a guide-piece D, the upper end of which engages the T-shaped guide-rail B and which is provided at its lower end with a lug *d*, connected to a weighted counterbalancing elbow-lever E, fulcrumed to the side wall of the scuttle-frame A at P, as shown clearly in Figs. 1 to 3. The counterbalancing-lever E serves to move the guide-piece D freely on the guide-rail whenever the locking devices of the cover are released and the cover moved into raised or closed position, the counterbalancing-weight following the motion of the guide-piece as the same is moved over the longitudinal guide-rail B. In the lower part of the guide-piece D is guided a spring-actuated main latch *d'*, which projects beyond the front end of the guide-piece, the front end being inclined at its lower part, as shown in Figs. 2 and 5. The main latch *d'* is connected at its inner end with a screw-rod *d''*, that passes through the opposite end of the guide-piece D and is provided with a sleeve-shaped stop *d'''*, by which the forward motion of the main latch under the tension of the spring is arrested. The outer end of the rod *d''* is provided with an eye *d''''*, to which an operating-chain F is attached, which is guided over a pulley *e* on the wall of the scuttle-frame and provided with a weighted handle E', by which the scuttle is operated for being unlocked and placed in open or closed position.

In the guide-piece is located, adjacent to the main latch *d'*, an auxiliary latch *d''''*, which is guided in the guide-piece and made inclined

at its lower end, so as to slide on the correspondingly-inclined side of a recess d^x in the main latch d' , while its upper end is provided with a pin d^6 , that serves to engage one
 5 of the holes b in the guide-rail B as soon as the guide-piece arrives at a position of rest on the guide-rail. When the main latch is drawn by a pull on the actuating-chain F, the auxiliary latch moves by gravity into the recess d^x of the main latch, so that the pin at
 10 its upper end clears the holes b in the guide-rail B, thus permitting a sliding motion to be imparted to the guide-piece on the rail until at the moment when the cover C is released and the action of the spring on the main latch will move the same forward and raise the pin of the auxiliary latch into locking position with one of the holes of the
 15 guide-rail, as shown in Figs. 5 and 6, so that thereby the cover is held in raised and firmly-locked position. For lowering the cover the actuating-chain F is pulled and the main latch withdrawn against the tension of its spring, so that the auxiliary latch can slide
 20 by gravity into the recess of the main latch, clear the holes of the guide-rail, and permit the forward motion of the guide-piece D on the guide-rail b under the influence of the weight on the counterbalancing-lever until
 25 said guide-piece arrives at the forward end of the guide-rail and the cover is in closed position, as shown in Fig. 2.

By the forward motion of the guide-piece the projecting end of the main latch engages
 35 one of two T-shaped latches G, pivoted to perforated ears k at the under side of the cover C, said latches being connected by a transverse rod f' . The T-shaped lower end of one pendent latch G is engaged by the main latch,
 40 so that its opposite end is forced into locking connection with keepers g , attached to the end wall of the scuttle-frame, as shown clearly in Fig. 2. As the latches G are fast on the same shaft, it is clear that in actuating one of
 45 them the main latch actuates both. The pendent latches in connection with the main latch and the keeper hold the cover firmly in closed position, so that it cannot be opened from the outside. When it is desired to unlock the
 50 scuttle for the purpose of raising the cover, a pull on the actuating-chain withdraws the main latch against the tension of its spring, moves simultaneously the guide-piece in backward direction on its guide-rail, permits the
 55 dropping of the pendent T-shaped latches G by gravity into vertical position, so as to release the keepers and permit the raising of the latches under the influence of the pull exerted on the actuating-chain, so that the automatic unlocking of the cover from the scuttle-frame and the raising of the same is accomplished by the same movement.

The connecting-rod f' between the pendent T-shaped latches serves for the purpose of

65 permitting the opening of the scuttle from the inside when any one desires to pass through the scuttle-frame to the roof. For this purpose the connecting-rod f' is taken hold of and pressed toward the main latch, so that the same is pressed against the tension of its
 70 spring, while the pendent latches are released from their keepers, so that the scuttle can be placed in entirely open position for permitting egress and ingress through the scuttle-frame.

75 My improved scuttle has the advantage that it can be automatically placed in raised position for using the scuttle for ventilating purposes and likewise automatically lowered and locked when the ventilation is not required; 80 secondly, that it can be opened or closed independently of the locking mechanism, and, lastly, that the raising, lowering, and locking devices are of comparatively simple and strong construction and not liable to get out of order, 85 and they perform their functions in a reliable and effective manner, so as to permit the use of the scuttle as an effective ventilating device for the upper parts of houses in which the improved scuttle is used. The scuttle may also be used for skylights of any size, 90 so as to permit the opening and closing of the same and for the ventilation of the upper stories of buildings.

Having thus described my invention, I claim 95 as new and desire to secure by Letters Patent—

1. A scuttle, comprising a scuttle-frame, a cover hinged to one side thereof, a perforated longitudinal guide-rail secured to the under side of said cover, a guide-piece slidable on 100 said guide-rail, a weighted lever fulcrumed to said frame and pivoted to said guide-piece for counterbalancing the latter, and a latch in said guide-piece operable to engage the perforations of said guide-rail for locking the cover 105 in raised position.

2. In a scuttle, the combination, with a scuttle-frame, and a cover hinged to one side thereof, of a perforated longitudinal guide-rail secured to the under side of said cover, a guide-piece slidable on said guide-rail, a weighted lever fulcrumed to said frame and pivoted to said guide-piece for counterbalancing the latter, and a latch slidable in said guide-piece and disposed at approximately right angles to 110 said guide-rail, said latch being operable to engage the perforations of said guide-rail for locking the cover in raised position. 115

3. In a scuttle, the combination, with a scuttle-frame, and a cover hinged to one side thereof, of a longitudinal guide-rail secured to the under side of said cover, engaging means on said guide-rail, a guide-piece guided on said guide-rail, a spring-controlled main latch slidable in said guide-piece and provided at one 120 side with a recess having an inclined side, means for actuating said main latch, means on the scuttle-frame cooperating with said main 125

latch for locking said cover in closed position,
and a gravity-latch slidable in said guide-piece
and having an inclined end engaging the in-
clined side of said recess in said main latch,
5 whereby said gravity-latch is operable to en-
gage the engaging means on said guide-rail
for locking the cover in raised position.

In testimony that I claim the foregoing as
my invention I have signed my name in pres-
ence of two subscribing witnesses.

JOHN FORMES.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.