

T. Powers,
Litch.

Π^o 31,258.

Patented Jan. 29, 1861.

Fig. 1.

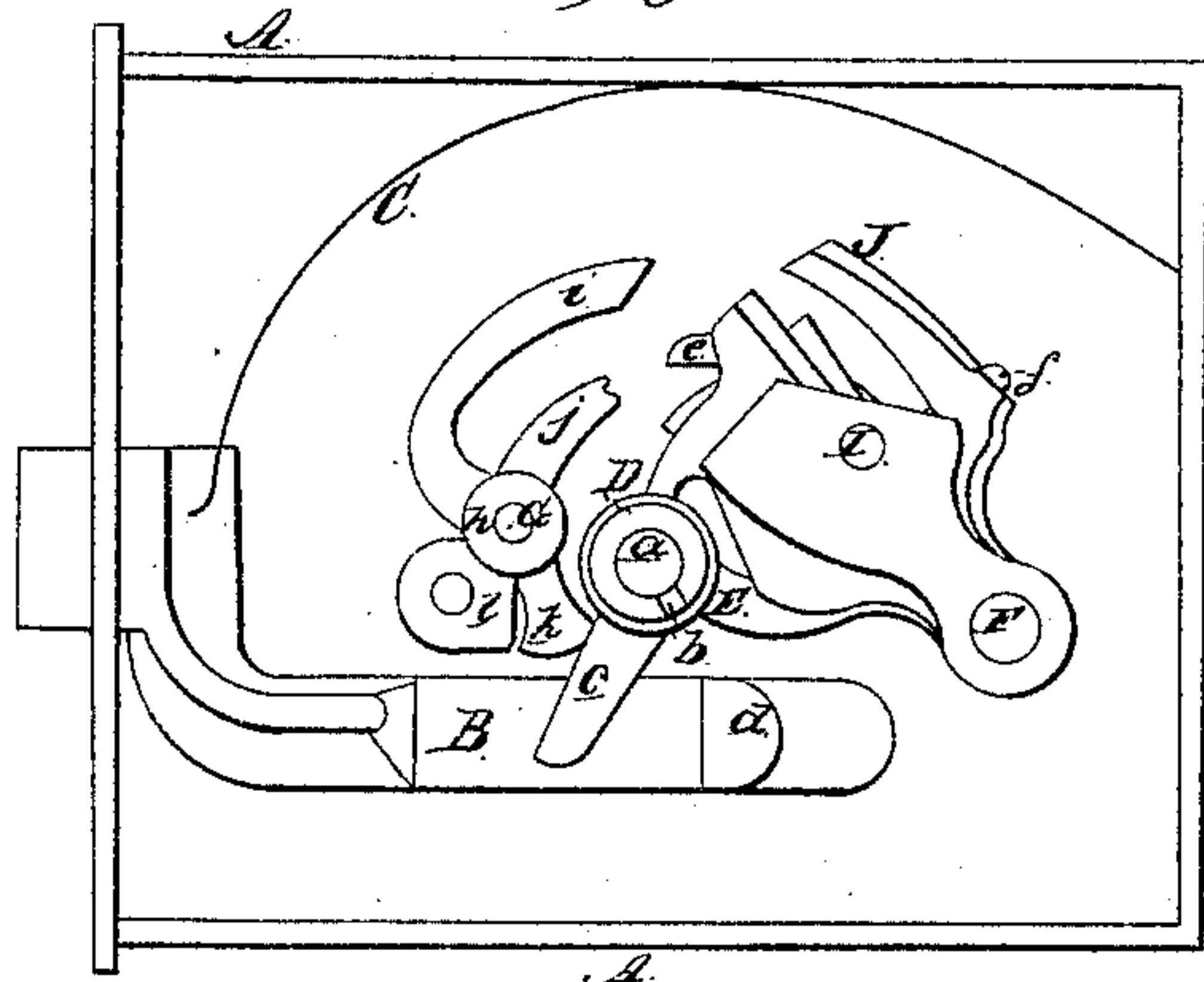


Fig. 2.

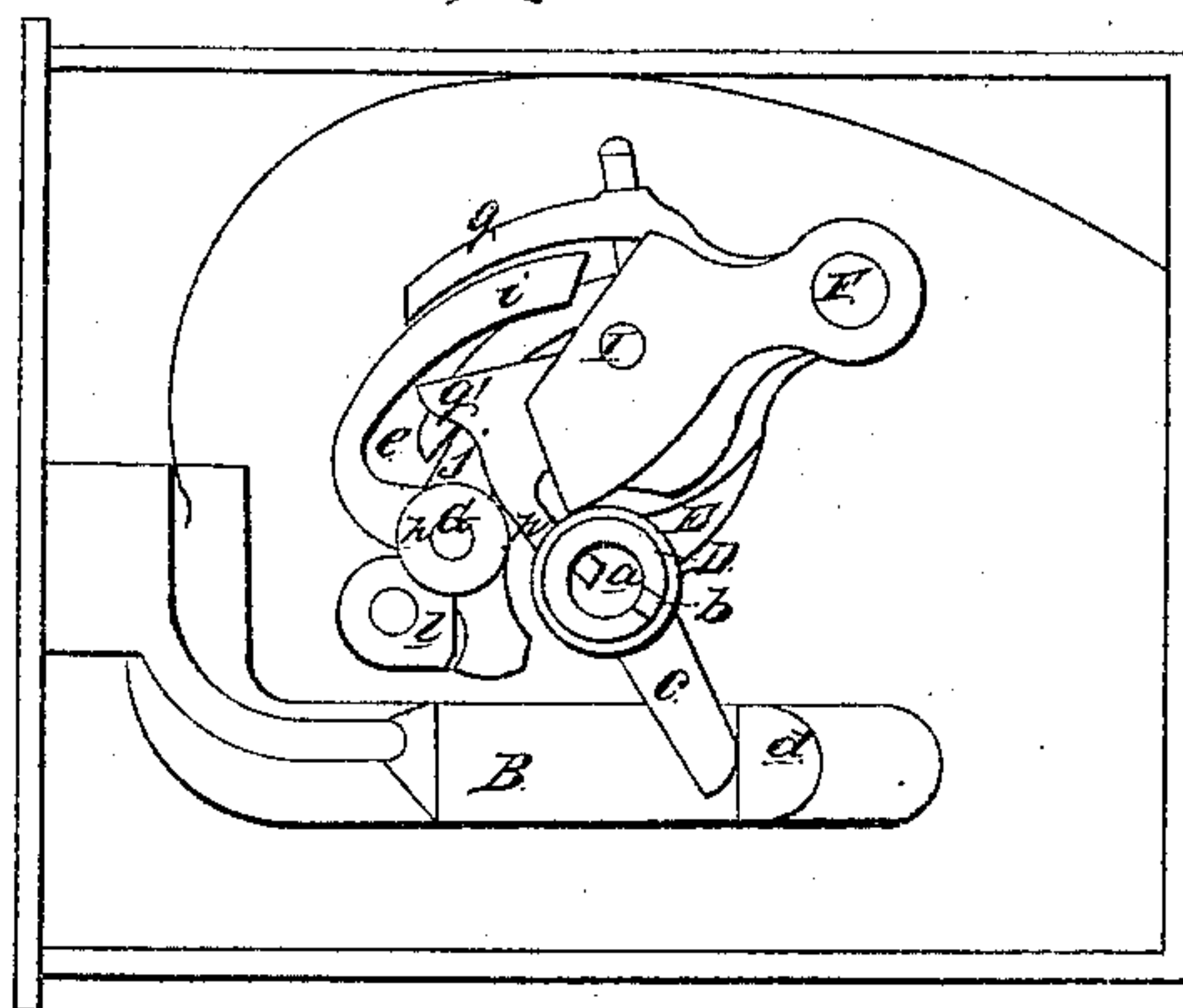


Fig 3.

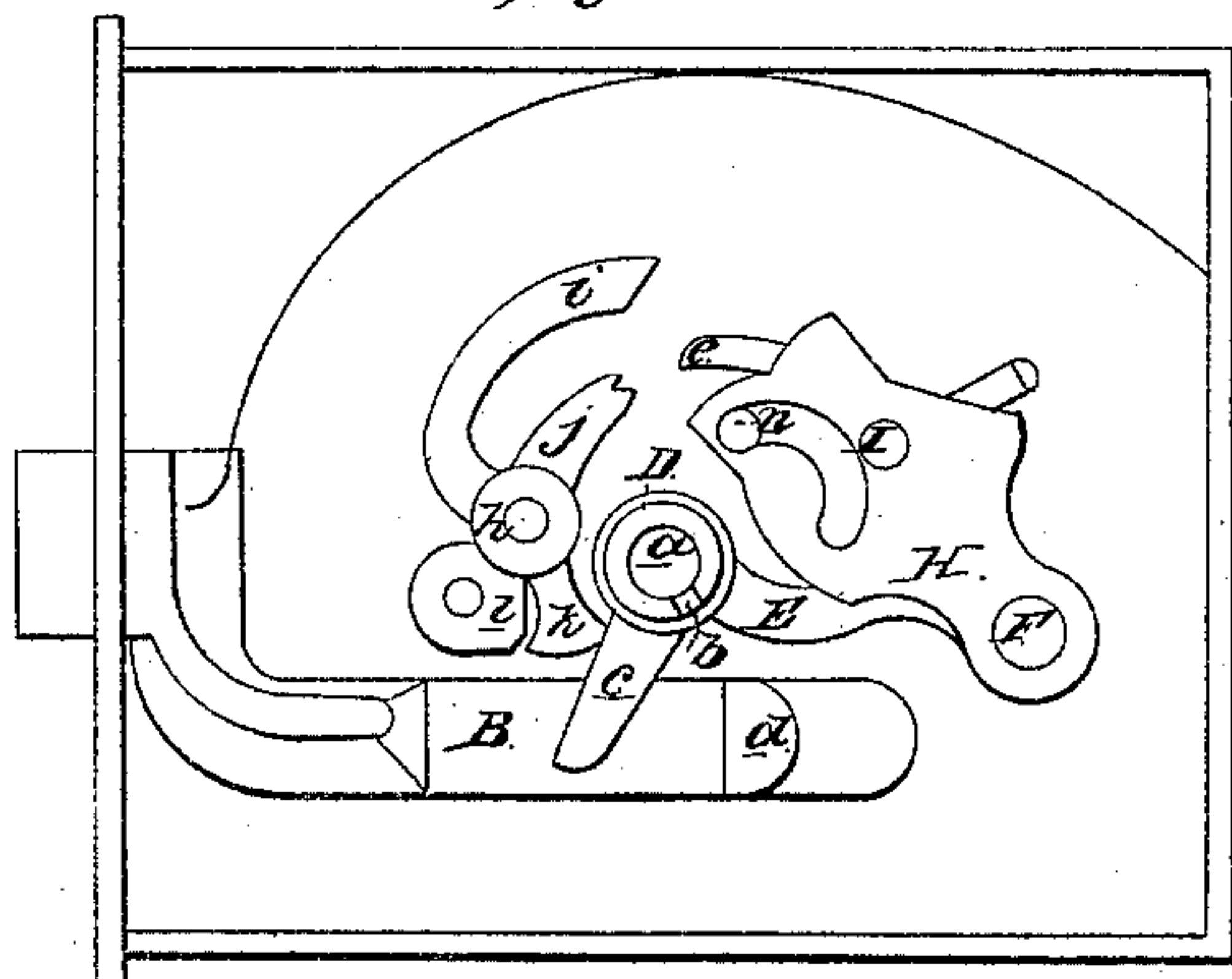


Fig. 4.

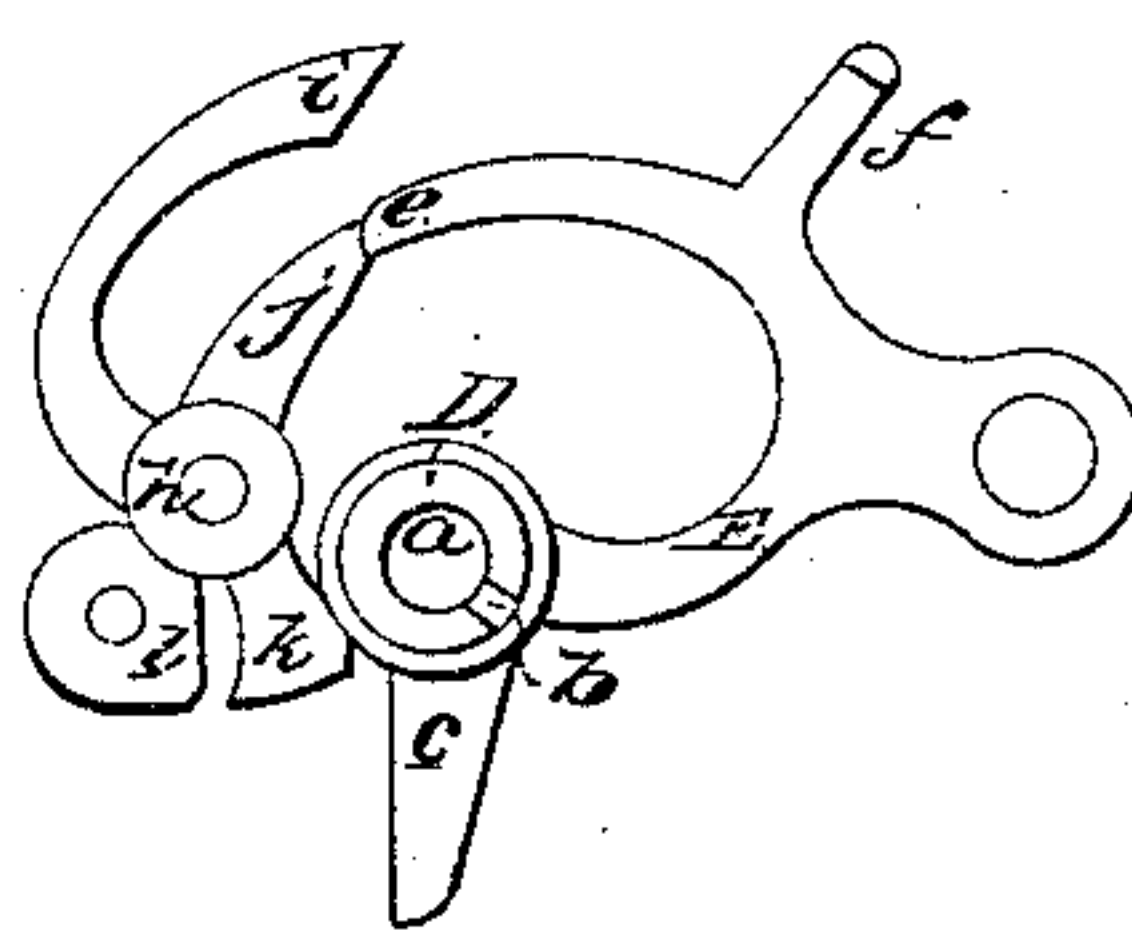
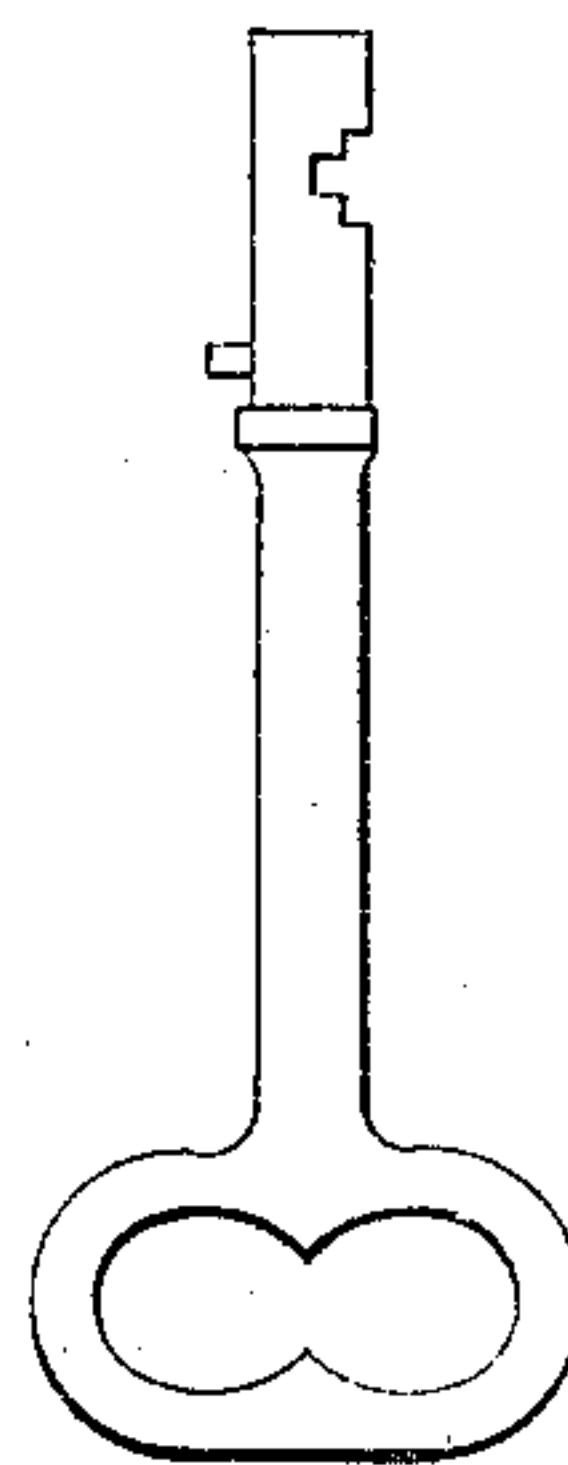


Fig. 5



Witnesses:

Chas. Houston
Charles C Foster

Inventor:

Henry Howson
Atty for T. Powers

UNITED STATES PATENT OFFICE.

TITUS POWERS, OF PHILADELPHIA, PENNSYLVANIA.

LOCK.

Specification of Letters Patent No. 31,258, dated January 29, 1861.

To all whom it may concern:

Be it known that I, **TITUS POWERS**, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Locks; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention consists in the employment of a "fence" having certain arms formed substantially as described hereafter and so applied to a lock, that on any attempt to pick the same one or more of the tumblers will so act on the fence as to cause the latter to obstruct the withdrawal of the bolt without any strain being exerted on the said tumblers.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawing, which forms a part of this specification, Figure 1 represents the interior of a lock with my improvement. Fig. 2 the same with the operating parts of the lock in a position differing from that shown in Fig. 1. Fig. 3 the same as Fig. 1 with the tumblers removed. Fig. 4 a diagram illustrating my improvement, and Fig. 5 a view of the key with its notches.

Similar letters refer to similar parts throughout the several views.

A represents the casing of the lock and B the bolt arranged to slide horizontally within the case, and pressed against by a spring C which tends to force the bolt outward.

A hub D arranged to turn in the case has an orifice *a* for the admission of the key and a notch *b* for the reception of a projection on the side of the key. From this hub projects an arm *c* which, when the hub is turned, bears against a projection *d* on the bolt B and forces the latter back. The hub D has also a curved arm E terminating at the point *e* and having a projection *f* hereafter alluded to, as well as another projection to which is secured the pin F.

On a pin G secured to the interior of the case is hung the "fence" of the lock which consists of a hub *h* adapted to the said pin and three arms projecting from the said hub, namely the curved arm *i*, a curved arm *j*, and an arm *k*. The fence is arranged to occupy two positions one in which the arms *i* and *j*

are thrown forward and the arm *k* thrown back against the permanent stop *l* which forms a part of the casing. When the fence is in this position as illustrated in Fig. 1 the point *e* of the curved arm E can, on turning the key, be moved forward and clear of the end of the arm *j* of the fence thereby enabling the operator to turn back the bolt. The other position of the fence is when its two arms *i* and *j* are thrown back so that the end of the arm *j* may be within the range of the end *e* of the arm E as seen in Fig. 4.

To the pin F of the arm E is loosely hung the carrier H having a curved slot *m* through which passes a pin *n* attached to the case of the lock so that on moving the arm E by means of the key a movement, the purport of which will be rendered apparent hereafter, will be imparted to the carrier. On this carrier H is a pin I to which as well as to the pin F of the arm E are hung the supplementary carriers alluded to hereafter.

Immediately above the carrier H is situated the first tumbler J which is hung to the pin F of the arm E this tumbler as well as each of the tumblers above it, having two curved arms *p* and *q* and a projection *q'* the arms *p* of the whole of the tumblers passing through an opening in the side of the hub D so as to be under the control of the notches cut in the key Fig. 5. The curved arm *q* of each tumbler and the projection *q'* of the same are of such a form that on turning the key and moving the arm E and with it the tumbler, the end of the curved arm *q* and the projection *q'* will both move in arcs of circles so as to clear the projection *i* of the fence providing the key applied to the lock is the proper one to properly control the tumblers. Above the first tumbler is placed the first supplementary carrier which, as before remarked, is hung to the pin I of the carrier H and to the pin F of the arm E. Above this supplementary carrier is hung another tumbler and above this another supplementary carrier and so on, three tumblers being used in the present instance as will be seen on reference to the key Fig. 4 which has three notches, it being understood that the arms *p* of the tumblers are arranged to suit the notches of the key.

Operation: Supposing the bolt of the lock to have been projected outward, the hub D having been turned so that the arm E with its tumblers and carriers has been thrown back to the position shown in Fig. 1, and

supposing it be desirable to withdraw the bolt, and a wrong key to be inserted for that purpose. On turning this wrong key the notches of which do not correspond to the projections p of the tumblers the hub with its arm E and tumblers will be turned up but the whole will be arrested before the arm c can come in contact with the projection d of the bolt for the following reason.

10 A projection f on the arm E has been previously alluded to, on the end of this projection is another standing up from the former to a height equal to that of the highest tumbler so as to bear against the whole of the tumblers and bring the ends of their projections p in a line with each other when the arm E with its appendages is thrown back. As the arm E with its tumblers &c. is turned upward by the wrong key the several carriers will draw the projections p downward into the notches of the key but as one or more of the notches is not properly formed, the arms q as well as the projection q' of the tumblers will not be in a line with each other and one or more of these projections or arms will strike the curved arm i of the fence turning the latter upward and presenting the curved arm j to the advancing end of the point e of the arm E thus presenting a solid obstruction to the further movement of the key inasmuch as the movement of the fence is limited by its arm k bearing against the hub D as seen in Fig. 4; the tumblers are thus relieved from all strain exerted to pick the lock, the whole strain being received by a solid part of the lock and the whole duty the tumblers have to perform during any attempt to withdraw the bolt by a wrong key being that of temporarily touching the arm i and thereby moving the fence on its pin, and this fence is so loosely hung and so nicely balanced

that but the slightest force is required to move it. On the application of a properly constructed key to the lock however the case will be different as, on turning such a key the projections p of the tumblers will fall into their proper notches of the key and the projections q and q' of the tumblers will fall into a line with each other and pass, the projections q above the arm i and the projections q' below the arm i of the fence which remains undisturbed and thus admits of the complete turning of the key to withdraw the bolt as seen in Fig. 2. The duty of the projection f as will now be seen is to throw the ends of the projections p of the tumblers in line with each other and the duty of the carriers to raise and lower the tumblers.

The difficulty of picking the above described lock will be obvious when the difficulty of moving the tumblers to a position in a line with each other by inserting any instrument other than the proper key into the key hole a , is taken into account.

I claim as my invention and desire to secure by Letters Patent—

The employment of the within described fence having arms i j and k formed substantially as described when the said fence is so applied to a lock that on attempting to pick the same one or more of the tumblers will so act on the fence as to cause the latter to obstruct the withdrawal of the bolt without any strain being exerted on the said tumblers as herein set forth.

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

TITUS POWERS.

Witnesses:

HENRY HOWSON,
JOHN WHITE.