A. Patterson,

Latch.

No 14,618. Patented Apr. 8, 1856.

Fig. 3.

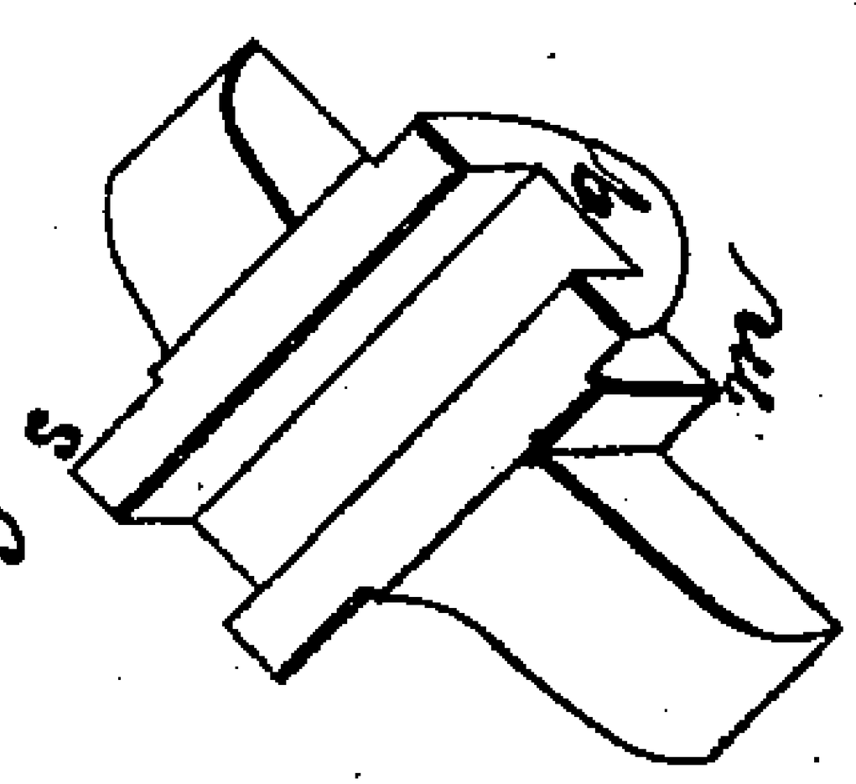


Fig. 2.

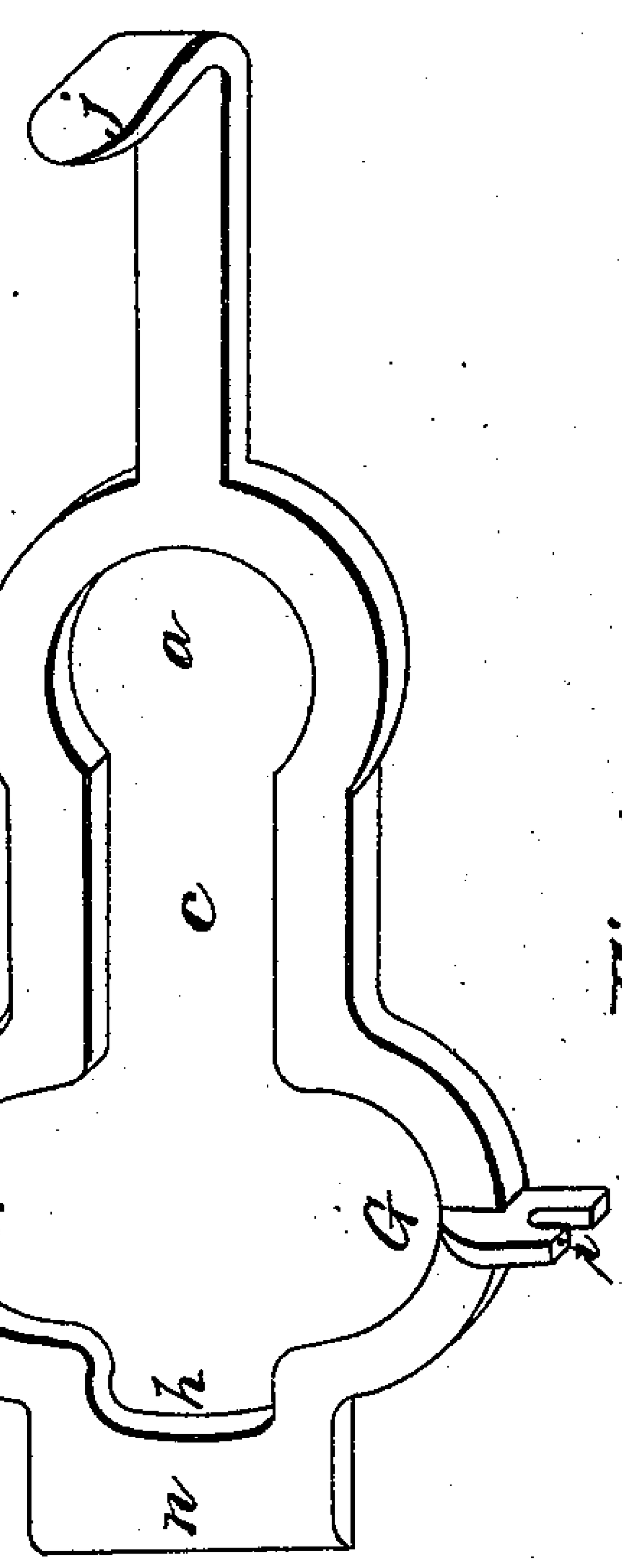
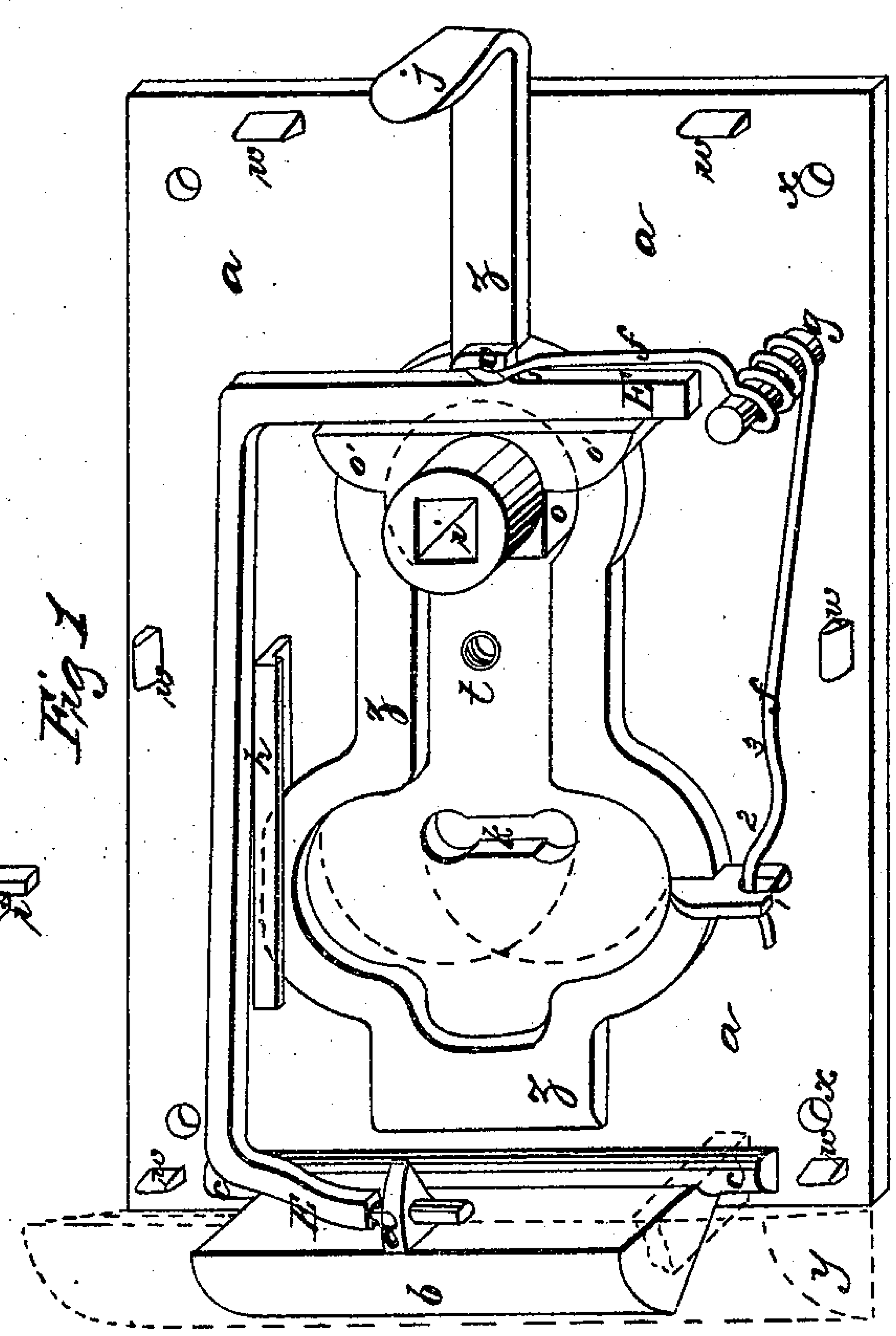


Fig 1



AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

ANDREW PATTERSON, OF PITTSBURGH, PENNSYLVANIA.

DOOR-LOCK.

Specification of Letters Patent No. 14,618, dated April 8, 1856.

To all whom it may concern:

Be it known that I, ANDREW PATTERSON, of the borough of South Pittsburgh, county of Allegheny, State of Pennsylvania, have invented a new and useful Improvement in the Manner of Constructing and Operating Locks, Bolts, and Latches for Fastening Doors; and I do hereby declare that the following specification contains a full and exact description of the same, reference being had to the annexed drawing, forming part of this specification, in which—

Figure 1 is a view of a lock embodying my said improvement (the cap or top plate being removed). Fig. 2 is a view of the guard by which the follower is grasped to prevent its turning when it is desired to lock the door. Fig. 3 is a section of the follower.

My invention consists in the employment of a vibrating bolt which shall act as a brace between the groove or chamber or shaft in or on which it turns and its point of contact in the keeper or jamb piece into which it falls when the door is closed.

To enable persons skilled in the art to construct such a lock latch or bolt I will more fully explain its various parts and their operation.

a a a Fig. 1 is the bottom plate of the lock.

b is the bolt. It vibrates on a shaft or pivot in a semicircular groove in the plate *a a a* as shown at *c*. It is retained in its place by brackets attached to the top plate, the operation of which are indicated by the dotted lines at *n*.

o o′ o′ is the follower through which the shaft of the knobs passes at the square hole *i*.

O′ O′ are the arms or sweeps of the follower which when the shaft and follower turn force the guide *e e e* toward the back part of the lock and it being connected with the bolt as shown at *d* draws in the bolt so as to allow the door to be opened. The projection to which the guide is attached at *d* springs from the top of the bolt (which is circular) at a tangent, so that if the top plate fits closely, the spring *f* which operates on the guide cannot force it (the bolt) to a greater protrusion than is desired; it also, by coming in contact with the bottom plate or the end of the guard, limits the extent to which the bolt can be drawn in.

z z z is the guard, A is shown in full in Fig. 2 where the letters, *a*, *j*, *c*, *h*, *i*, *n*, G, G show its various parts.

j is the handle by which it may be moved back and forth, there is an opening in the rim of the top plate (not shown) through which this handle moves freely.

a is a circular opening in the guard through which the follower passes and in which the square part of it, shown at *m* Fig. 3, turns freely without contact.

c is an oblong continuation of the opening *a* of such dimensions as will permit it to slide, fitting closely, over the square part of the follower *m* Fig. 3.

G G is an enlargement of the opening *a*, *c* of such shape as will permit a right or left turn of the key from either end of the key hole to draw the slide or guard out or in as the case may be as shown at *k* Fig. 1.

h Fig. 2 is a continuation of the opening *a*, *c*, G G into which the key falls when it is turned the wrong way when the guard is at the locking point.

n is a part of the guard which, (when the guard is withdrawn as far as the rim of the lock will permit) covers and closes the outside key hole.

i Fig. 2 is a projection with a groove or hole in which the wire spring *f* Fig. 1 projects as shown at I Fig. 1 and in connection with the stationary guide *h* Fig. 1 prevents the vertical displacement of the guard. The guide *h* in connection with the arms *o′ o′* which project over the guard prevent its lateral displacement.

g is a pin on which the wire spring *f f′* is coiled.

f′ is attached to the guide *e e e* which it actuates so as to force out the bolt. The attachment is made by a loop on its end which passes over the hook *v* which is fast to the guide.

f is bent into the curves 1 2 3 for the purpose of retaining the guard at those points.

w w w w are brackets on the bottom plate over which the top plate or cap fits.

t is a hole through which a screw passes so as to secure the top plate in its place.

x x x x are screw holes corresponding to others in the top by which the lock is fastened to the door. The keeper or jamb piece into which the bolt falls when the door is closed as indicated by the dotted lines *y y*.

Fig. 3 is a section through the follower

showing the square part in which the guard grasps when at the locking point and also the round ends or journals *s* and *q* on which it turns in proper holes in the top and bottom plates.

When all the parts of the lock above described are properly fitted and joined together it operates as a latch lock and bolt in the following manner. As arranged in the diagram Fig. 1 the guard is in such a position that the part *a'* Fig. 2 surrounds the square (*m* Fig. 3) of the follower so that it turns freely and its arms *o' o'* press against the guide *e e e* and withdraws the bolt as described and set forth. The wire spring *f* Fig. 1 presses at the curve 1 on the guard and retains it in its position. In this condition it is a spring latch operated by turning the knob or handle. By giving the handle of the guard a slight pull it is withdrawn so that the part *i* (Fig. 2) rests in the curve 2 of the spring *f* Fig. 1 and the square part of the follower is grasped by *c* (Fig. 2) so that it cannot turn and the door is locked. It may be unlocked by the key or by pushing in the handle of the guard. To bolt the door so that it can be opened only from the inside the key is withdrawn and the guard is withdrawn as far as the rim of the lock will permit. It still grasps the square of the follower and the part *n* (Fig. 2) covers the key hole. The curve in the spring marked 3 resists an effort to remove the key hole covering from the outside by means of a pick or other instrument which might be employed. The security from outside interference with the key hole when closed may be increased by the use of a brace between the end of the handle of the guard and the rim of the lock.

For the information of those interested I will state that the different parts of the lock, latch, or bolt, herein described are susceptible of various modification and application to suit different tastes and circumstances, and that they may be severally modified or changed in their arrangements and attachments without substantially differing from those herein described. I will therefore indicate and describe such modifications as I contemplate in its application to various purposes, viz. The attachment for operating the bolt may be substituted by any suitable mechanical arrangement, or it may be operated by an attached handle without the intervention of any mechanical arrangement. It may be used with or without a spring, as a top or bottom bolt by having a cord chain or wire attached. When used as a top or bottom bolt it may be made to fall in or out of the keeper by having its center of gravity above or below its center of motion as the case may be. All these arrangements will suggest themselves to intelligent mechanics.

The guard may be arranged to move vertically instead of horizontally as described. It may swing on a pivot or move in a circular groove. It is not essential that it should be of the shape here indicated nor that it should grasp the square part of the follower for it would be fully as effective if pressed firmly against a plane surface or a properly constructed eccentric, or it may be arranged with a recess which will clasp by the action of a spring or otherwise, the follower in such a manner as to prevent its turning.

When the part of the guard which operates on the follower is modified for any reason that part of the follower which is its counterpart must be modified to suit.

By the employment of wards for the key to operate on, on the guard, the size of the opening G, G, *h* Fig. 2 may be materially reduced, and consequently the parts outside of G, G, *h* Fig. 2 can be more or less removed.

The guard and its counterpart on the follower are obviously applicable to any latch, lock or bolt which is operated by the turning of a knob whether it have a vibrating sliding or lifting bolt.

By changing the relative position of *a* and *c* Fig. 2 the front end of the guard may be made to protrude as a bolt when the guard is at the locking point.

What I claim as new and desire to secure by Letters Patent is—

The use and employment of a vibrating bolt which shall act as a brace between the seat in or the shaft on which it vibrates and the jamb piece or keeper into which it falls without any other leverage on any other point, and this I claim without reference to the manner in which or the machinery by which the said brace bolt is operated.

ANDREW PATTERSON.

Witnesses:
R. A. Bausman,
A. S. Smith.