A. PELHAM.

Door-Bolts.

No. 136,861. Patented March 18, 1873.

Fig 1

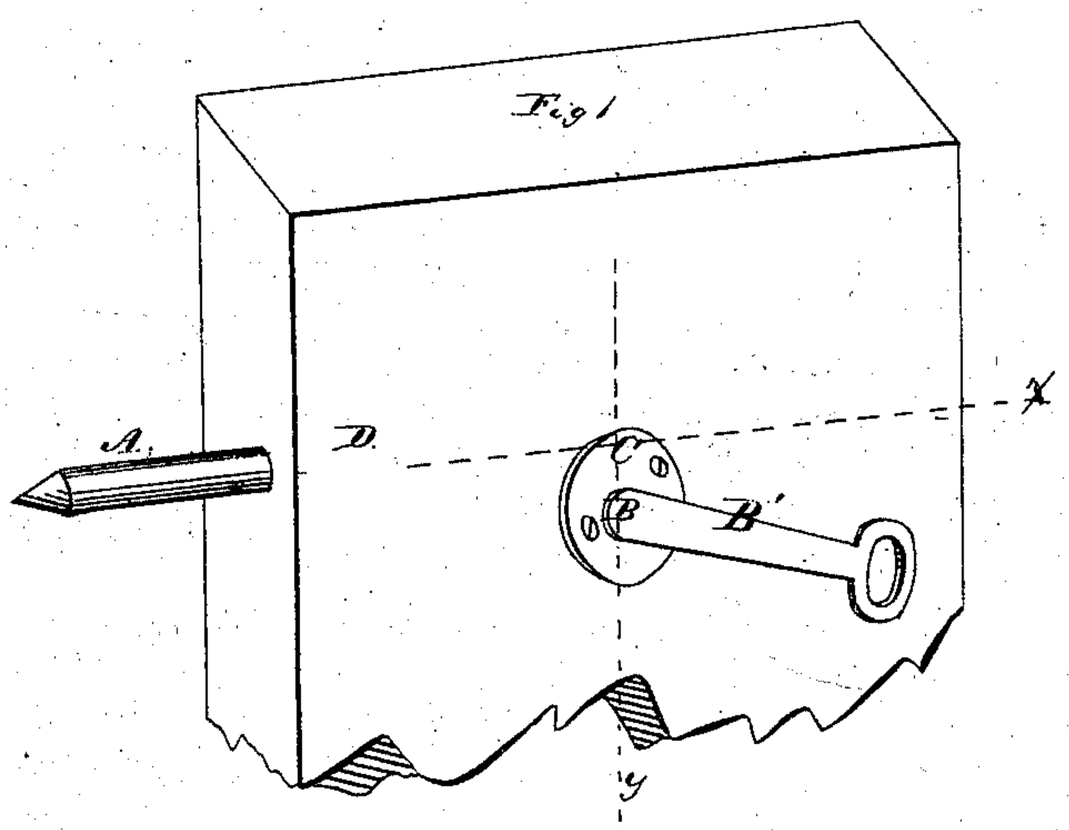

Fig 2.

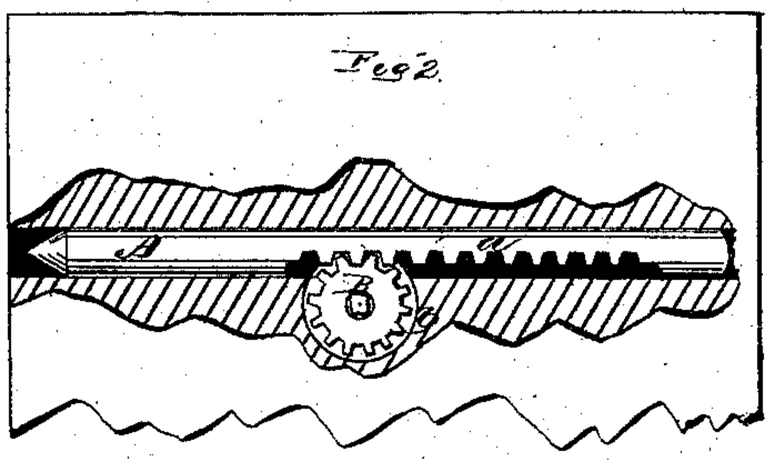

Fig 3.

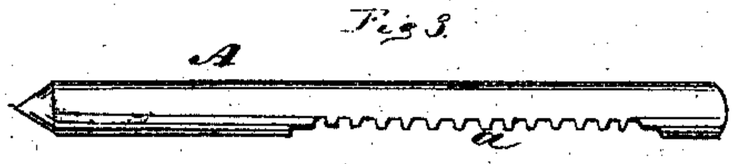

Fig 4.

Witnesses;

H. C. Clark.

Columbus C. Choate

Inventor.

Abram Pelham

by Dyer, Beadle & Co.

Atty's.

UNITED STATES PATENT OFFICE.

ABRAM PELHAM, OF PLYMOUTH, MICHIGAN, ASSIGNOR TO HIMSELF AND REUBEN HAINES, OF SAME PLACE.

IMPROVEMENT IN DOOR-BOLTS.

Specification forming part of Letters Patent No. **136,861**, dated March 18, 1873.

To all whom it may concern:

Be it known that I, ABRAM PELHAM, of Plymouth, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Door-Bolts; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective view of my bolt applied to a door. Fig. 2 is an elevation of the same, the crank and escutcheon being removed, and a portion of the door broken away to show the internal arrangement. Fig. 3 is side elevation of the bolt, and Fig. 4 is a similar view of the pinion-shaft.

Like letters refer to like parts in each figure.

This invention relates to an improvement in mortise-bolts for doors and windows, and has for its object to render it impossible to shoot back the bolt by means of an instrument inserted between the edge of the door and frame, and to simplify the construction and application. The invention consists in providing a plain cylindrical bolt, with a toothed rack at the rear part, which is inserted in a mortise bored from the edge of the door, and in a cranked pinion mortised in a socket bored from the inner side of the door, which pinion engages with the rack of the bolt and reciprocates the latter in the rotation of the crank.

In the drawing, A represents a cylindrical bolt having a toothed rack, *a*, cut or formed in it toward the back part. B is a shaft carrying a pinion, *b*, which engages with the rack *a* when the parts are in position, its inner end forming the spindle *c*. The outer end of the shaft is squared to receive a detachable crank, B′, or the latter may form part of the shaft itself. C is an escutcheon, through which the outer end of the shaft B passes, and in which it is journaled.

To apply the bolt to a door, D, in the edge of the latter, bore a horizontal hole of the diameter and length of the bolt, scribing a line parallel with its axis on the inner face of the door, as seen at *x*. Then measure the distance from the point of the bolt to the front end of the rack, add a quarter of an inch for clearance, and lay off that distance on the line *x*, across which draw the line *y*. Then, with a bit of the diameter of the pinion centered on the line *y*, bore a socket in the side of the door, to whose upper side the line *x* will be tangent. Bore this hole deep enough to receive the pinion on body of the shaft, and then with a smaller bit bore in the bottom of the socket a bearing for the spindle *c* at the end of the shaft. Insert the bolt in its mortise. Then shove the shaft B into its bearing, which will bring the pinion into gear with the rack. Then place the escutcheon C on the shaft, and secure it by two screws to the door, and place the crank on the outer end of the shaft, the rotation of which will shoot out the bolt, and a reverse movement retracts it.

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

The cylindrical bolt A, of uniform size throughout, inserted in a mortise bored from the edge of the door, in combination with the crank B′ and pinion *b*, the bolt being adapted to be used without a covering-plate, as shown and set forth.

ABRAM PELHAM.

Witnesses:
H. F. EBERTS,
H. S. SPRAGUE.