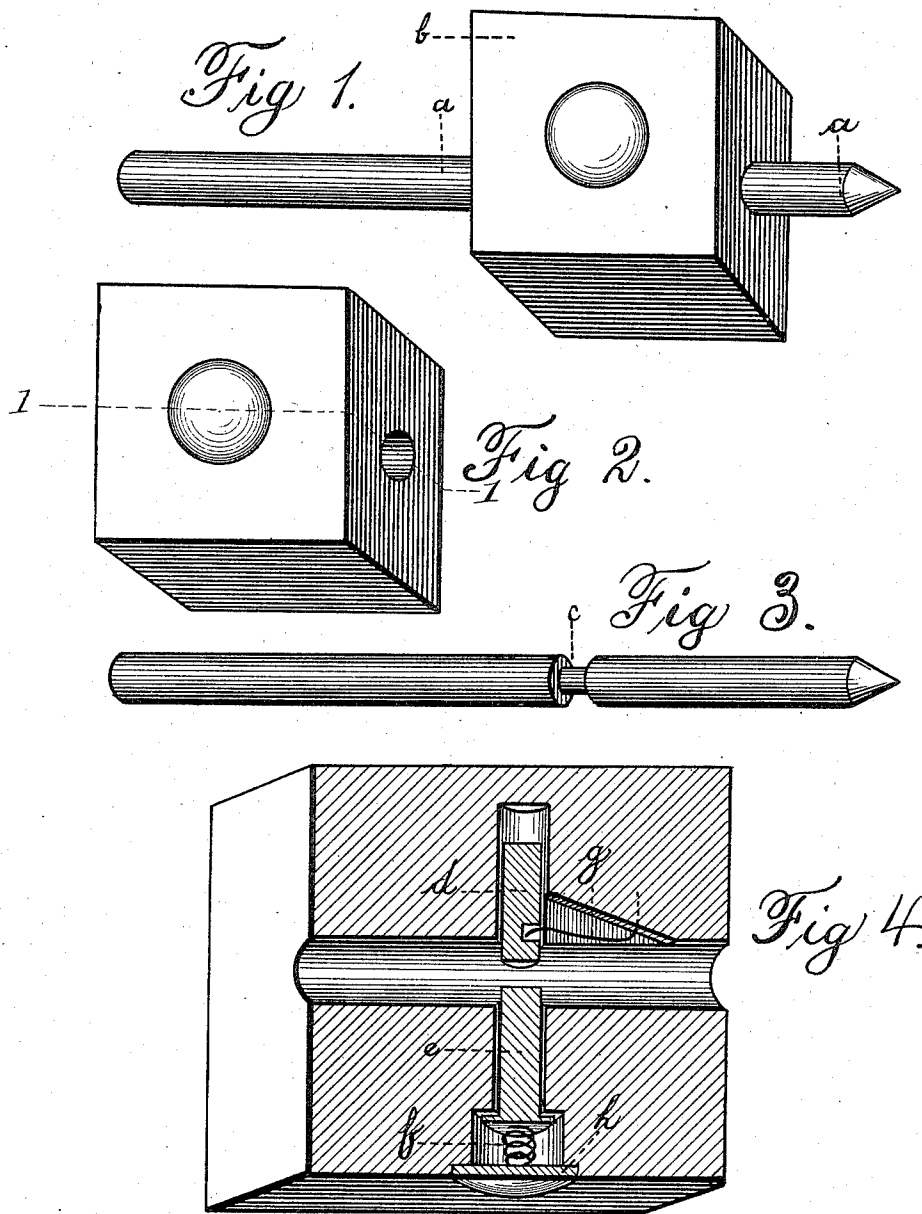


(No Model.)

W. E. BATTEY.
PUZZLE OR TOY.

No. 580,542.

Patented Apr. 13, 1897.



Witnesses:
Geo. M. Hammel
Fred Reuker

W. E. Battey
Inventor

UNITED STATES PATENT OFFICE.

WILLIAM E. BATTEY, OF TOPEKA, KANSAS, ASSIGNOR OF ONE-HALF TO
E. A. WAGENER, OF SAME PLACE.

PUZZLE OR TOY.

SPECIFICATION forming part of Letters Patent No. 580,542, dated April 13, 1897.

Application filed April 2, 1895. Serial No. 544,205. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. BATTEY, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented a new, useful, and instructive Puzzle or Toy, of which the following is a specification.

My invention relates to improvements in puzzles or locks, in the former of which is a perforated cube, ball, or other form of wood and one or more metal plungers operated by metal springs located and fixed securely in the center of the perforation or cylindrical or square hole in conjunction with a bluntly-pointed wooden rod having a well-defined annular groove or recess located about one-third the distance from the bluntly-pointed end; and the objects of my invention or improvement are, first, to illustrate the centrifugal and centripetal forces; second, to afford amusement and instruction to others in their endeavor to solve this simple yet apparently impossible puzzle by removing the wooden rod from the hole in the block or ball of wood after it has been inserted therein and securely locked by means of the metal plungers or bolts operated by metal springs, which removal is accomplished by rapidly revolving the block or ball by means of a piece of string, as with a top, or by twirling with the fingers, the centrifugal force thereby obtained operating on the plungers or bolts, causing the puzzle to unlock, and by holding the rod at an incline the block runs off. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents my puzzle in position

before operation, the rod *a* passing through a loosely-fitted opening in the block (or ball) *b*, into which it is securely locked until released by the proper rotary motion of the block. Fig. 2 shows the block after the rod, Fig. 3, has been removed. Fig. 3 shows the rod, after being removed from the block, pointed at the end to admit of its easy return to position in the block and provided with an annular groove *c*, into which the plungers *d* *e* in Fig. 4 are pressed by springs when the rod is locked in place. Fig. 4 shows an enlarged section of Fig. 2 on line 1 1 1, showing metal plungers *d* *e*, held in position by suitable springs *f* *g*, as shown. The plunger may be slotted, as plunger *d*, to receive spring *f*, or it may be formed with a head, as plunger *e*, to be operated by a coiled spring held in place by the cap *h*, the glue-joint of which shows as a circle on Figs. 1 and 2.

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

The combination in the puzzle, or lock, of the perforated block, or ball, of wood, the metal plungers, or bolts, operated by springs, securely fixed in the interior thereof, with the bluntly-pointed rod of wood, or other suitable material, having an annular groove, or recess, at a convenient point thereon, the rod *a* being cylindrical, or square, or of any desired shape and the opening in the block, or ball, to correspond, all as and for the purpose described above.

W. E. BATTEY.

Witnesses:

GEO. M. HAMMEL,
FRED REUKEL.