No. 680,434. Patented Aug. 13, 1901.

# W. P. LYLE.

## PUZZLE.

(Application filed June 5, 1901.)

(No Model.)

Fig. 1.

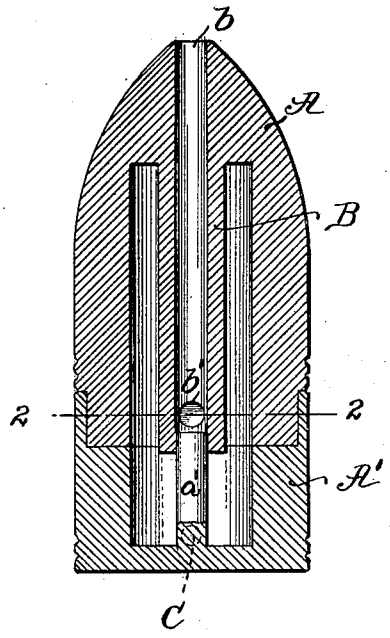



Fig. 3.

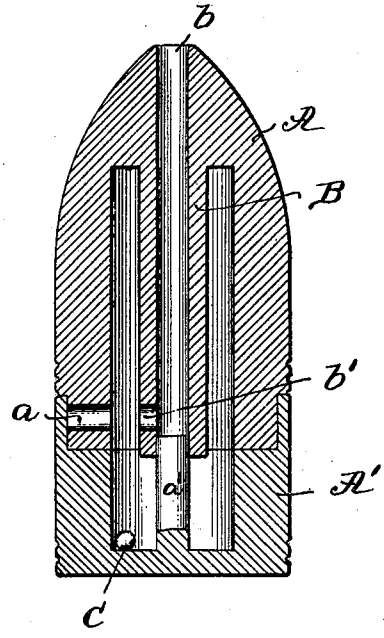
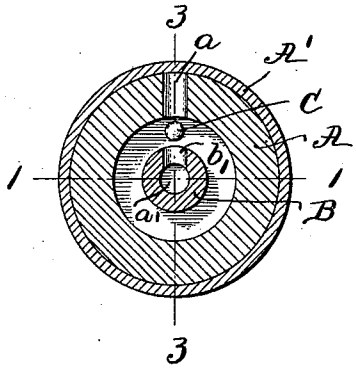



Fig. 2.




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# UNITED STATES PATENT OFFICE.

WILLIAM P. LYLE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO FREDERICK B. MARVEL, OF AVONDALE, AND P. J. LYNCH, OF WESTGROVE, PENNSYLVANIA.

## PUZZLE.

SPECIFICATION forming part of Letters Patent No. 680,434, dated August 13, 1901.

Application filed June 5, 1901. Serial No. 63,188. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM P. LYLE, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Puzzles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to puzzles, and has for its object the provision of a receptacle provided with a single orifice adapted to receive a small sphere and the interior construction of which is such that the sphere cannot be expelled unless the receptacle is manipulated in a certain definite manner.

In the drawings, Figure 1 is a sectional view of the device on line 1 1 of Fig. 2. Fig. 2 is a similar view on line 2 2 of Fig. 1. Fig. 3 is a similar view on line 3 3 of Fig. 2.

The receptacle is preferably made in the form of a projectile, although this particular form is not essential. It consists of a shell preferably made in two sections A and A'. Projecting downward from the tapered end of the section A and extending along the longitudinal center or axis of the shell is the tube B. The tube is preferably made integral with section A. The tubular orifice extends through the section A at the apex thereof, forming an opening *b*, through which the ball is received and expelled. The tube is closed at its lower end; but its wall is perforated just adjacent to its lower end to form an orifice *b'*. The inner wall of section A is provided with an orifice or depression *a*, extending on a radial line from the center of the shell, said depression being of substantially the same diameter as and located immediately opposite the orifice *b'*. The orifice *a* extends entirely through the wall of section A; but it is closed at its outer end by the inner wall of section A'. While the closed lower end of the tube may be made integral with the body of the tube, I prefer in the manufacture of the same to form the tube with its lower end open and close it by means of pin or standard *a'*, integral with and projecting upward from the base of section A'. I prefer to glue or otherwise secure the two sections together, so as to render access to the interior difficult or impossible.

When the sphere C, which is preferably a bullet of lead, is dropped through orifice *b*, the passage formed by tube B, and orifice *b'* into the body of the receptacle, it is apparent that efforts to dislodge the sphere by shaking the receptacle or subjecting it to chance twistings and turnings will be ineffectual. To one familiar with the interior construction, however, it is not difficult to expel the sphere, as by placing the receptacle in a horizontal position, so that depression *a* is immediately below orifice *b'*, the sphere can easily be rolled into the depression, and then by quickly giving the receptacle a half-turn on its longitudinal axis the sphere will be thrown out of the depression and through orifice *b'* into tube B, after which by inverting the receptacle or tilting it somewhat the sphere will roll out.

The receptacle need not be made in the form of a projectile, although I prefer that form; nor need it be made in any particular number of parts, although I prefer two; nor is it necessary that the details of construction or the proportions shown should be rigidly followed. The form, structure, and proportions may all be varied without departing from the invention.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. As a new article of manufacture, a hollow receptacle having a cylindrically-shaped inner side wall and a passage leading from its exterior to its interior, there being a radial depression formed in its inner side wall, said depression being of substantially the same diameter as, and substantially opposite to, the mouth of the passage, substantially as described.

2. As a new article of manufacture, a hollow receptacle having a cylindrically-shaped inner side wall and a tube extending from the top down through the center of the hollow interior of the shell, the tube communicating with the exterior at the top, closed at its lower

end and provided with an orifice in its peripheral wall, there being a radial depression formed in the inner side wall of the shell, said depression being of substantially the same diameter as, and substantially opposite to, said orifice, substantially as described.

3. As a new article of manufacture, a hollow receptacle having a flat bottom and a cylindrically-shaped inner wall, there being a radial depression in the inner wall some distance above the bottom of the shell, the shell having a tube extending from the top down through the center of the hollow interior of the shell, the tube communicating with the exterior at the top, the lower end of the tube terminating some distance above the bottom of the shell, a pin or standard projecting upwardly from the bottom of the shell and extending into and closing the lower end of the tube, said tube being provided with an orifice just above the top of said pin and substantially opposite said depression, substantially as described.

4. As a new article of manufacture, a hollow receptacle formed of two sections A and A′, the upper section A′ having a tube extending from its top down through the center of its hollow interior and communicating with the exterior at its top, said tube being closed at its lower end and provided with an orifice $b'$ in its peripheral wall, said section having a radial orifice $a$ extending from its inner to its outer wall and substantially opposite the orifice in the tube, the side wall of the lower section A′ projecting outside of the lower end of the wall of upper section A and closing the outer end of said orifice $a$, substantially as described.

In testimony of which invention I have hereunto set my hand, at Philadelphia, on this 25th day of May, 1901.

WILLIAM P. LYLE.

Witnesses:
FRANK S. BUSSER,
JESSE B. HELLER.