

(No Model.)

J. P. DENNIS.  
PUZZLE.

No. 584,857.

Patented June 22, 1897.

Fig. 1

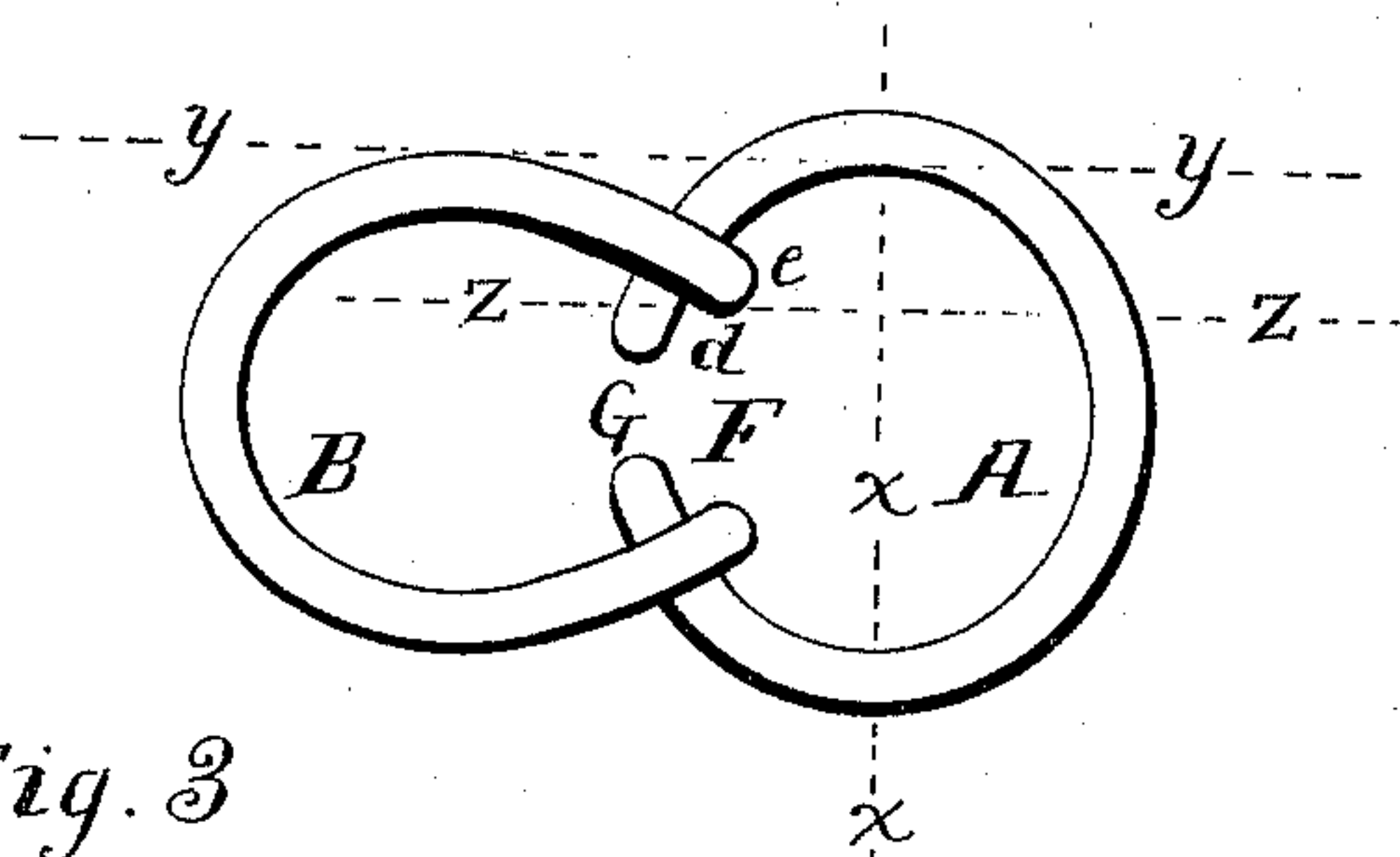


Fig. 2

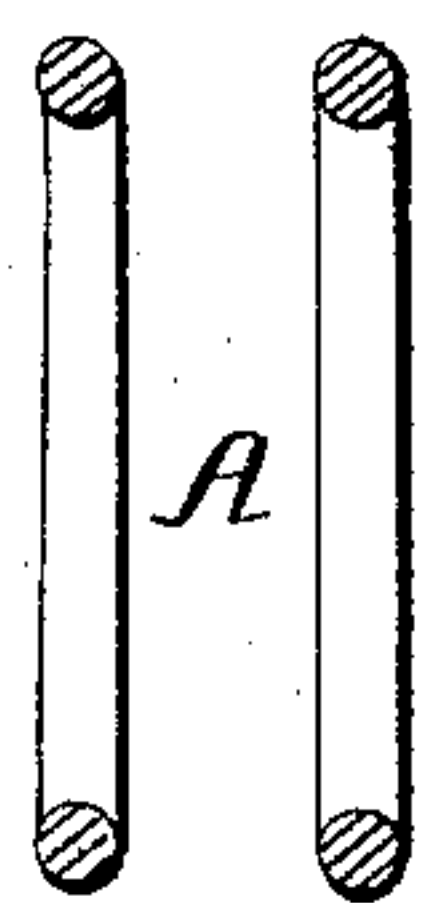


Fig. 12

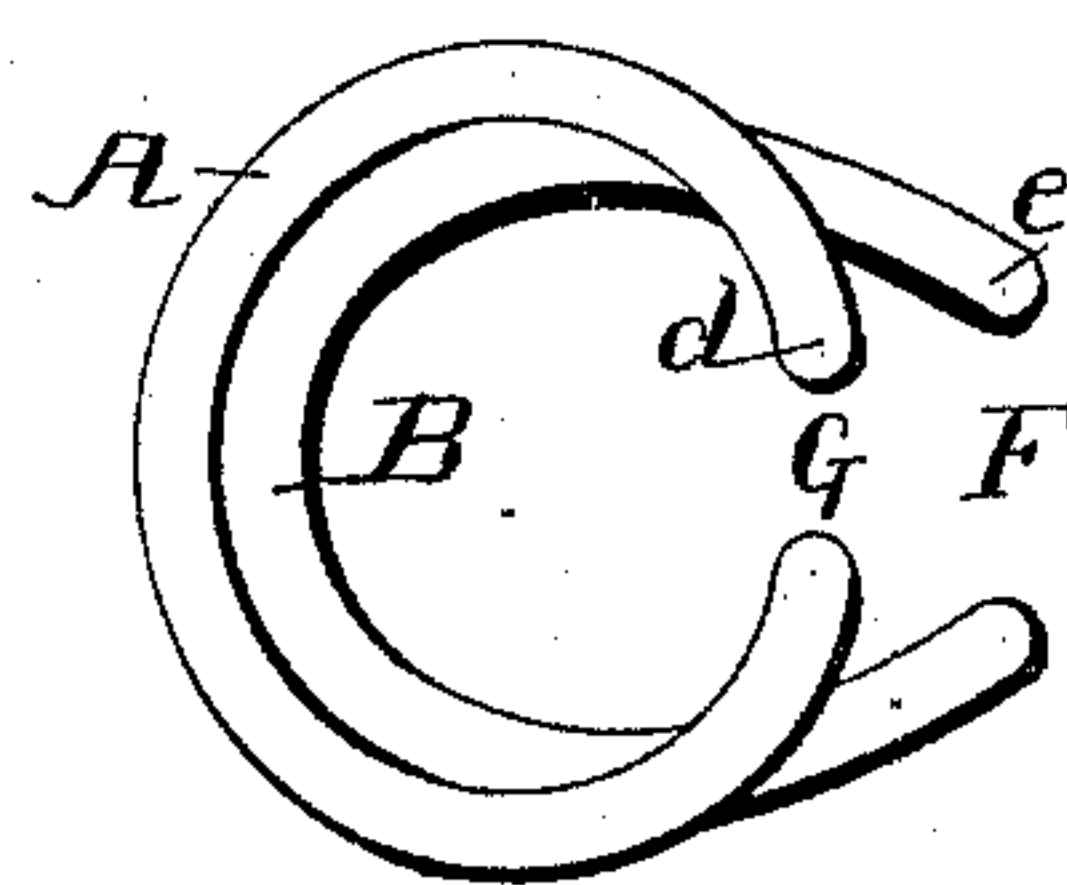


Fig. 3

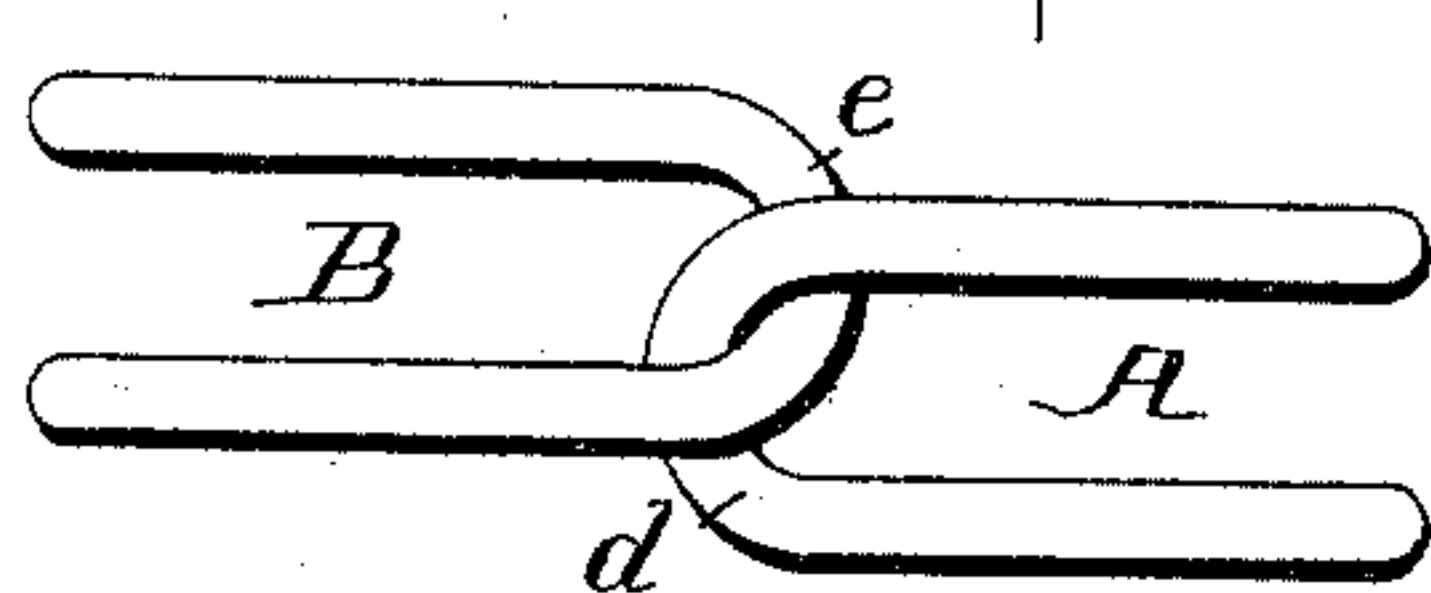


Fig. 4

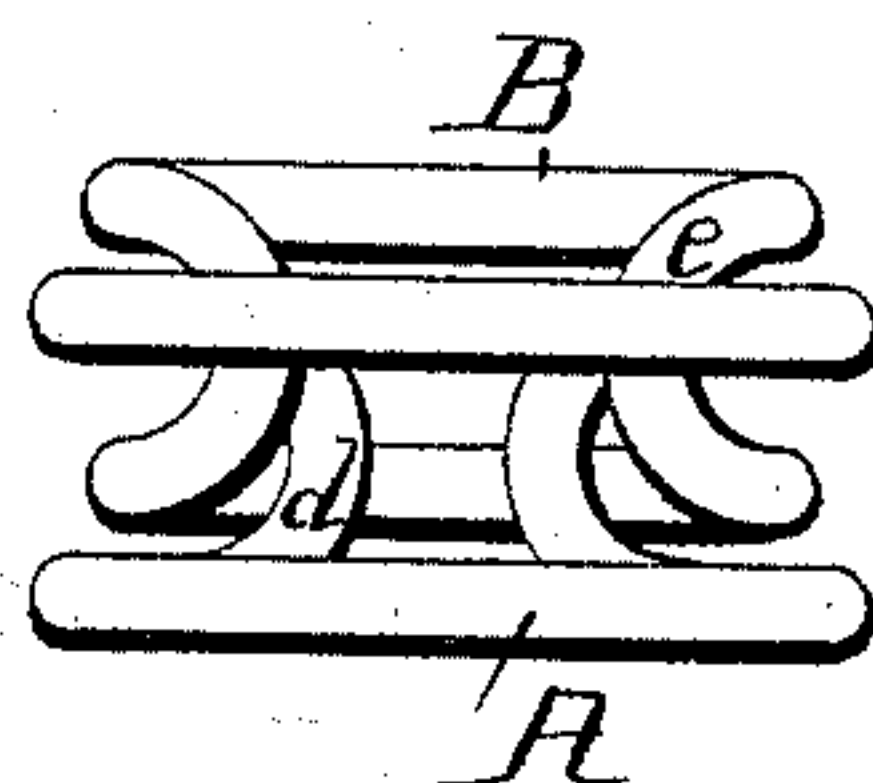


Fig. 6

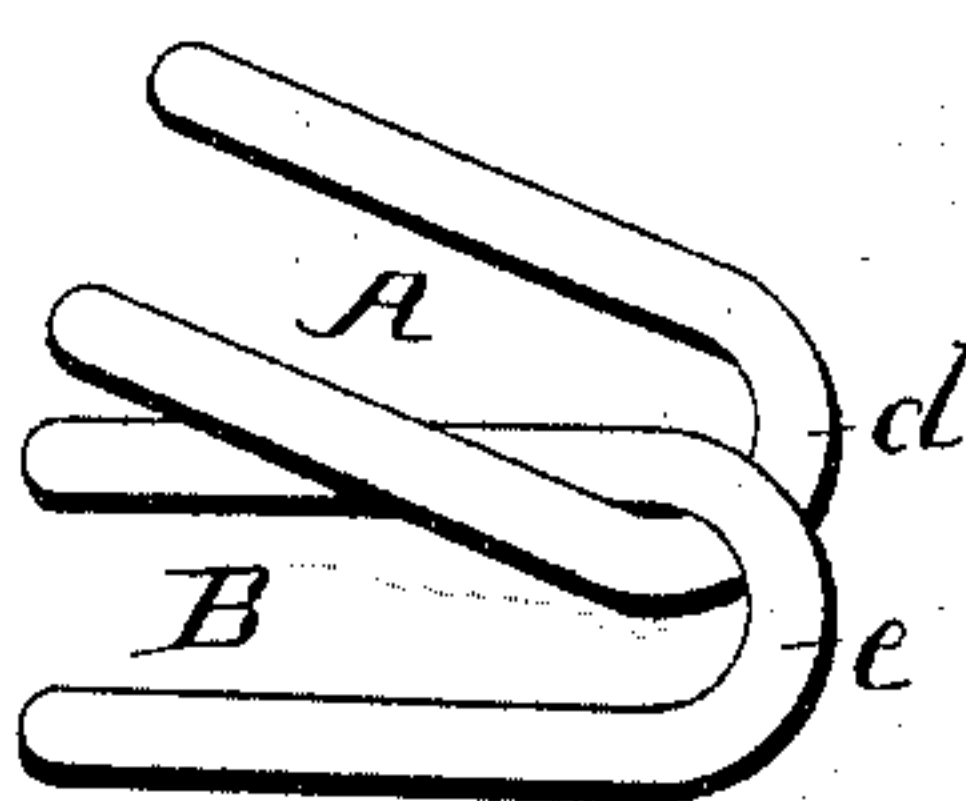


Fig. 5

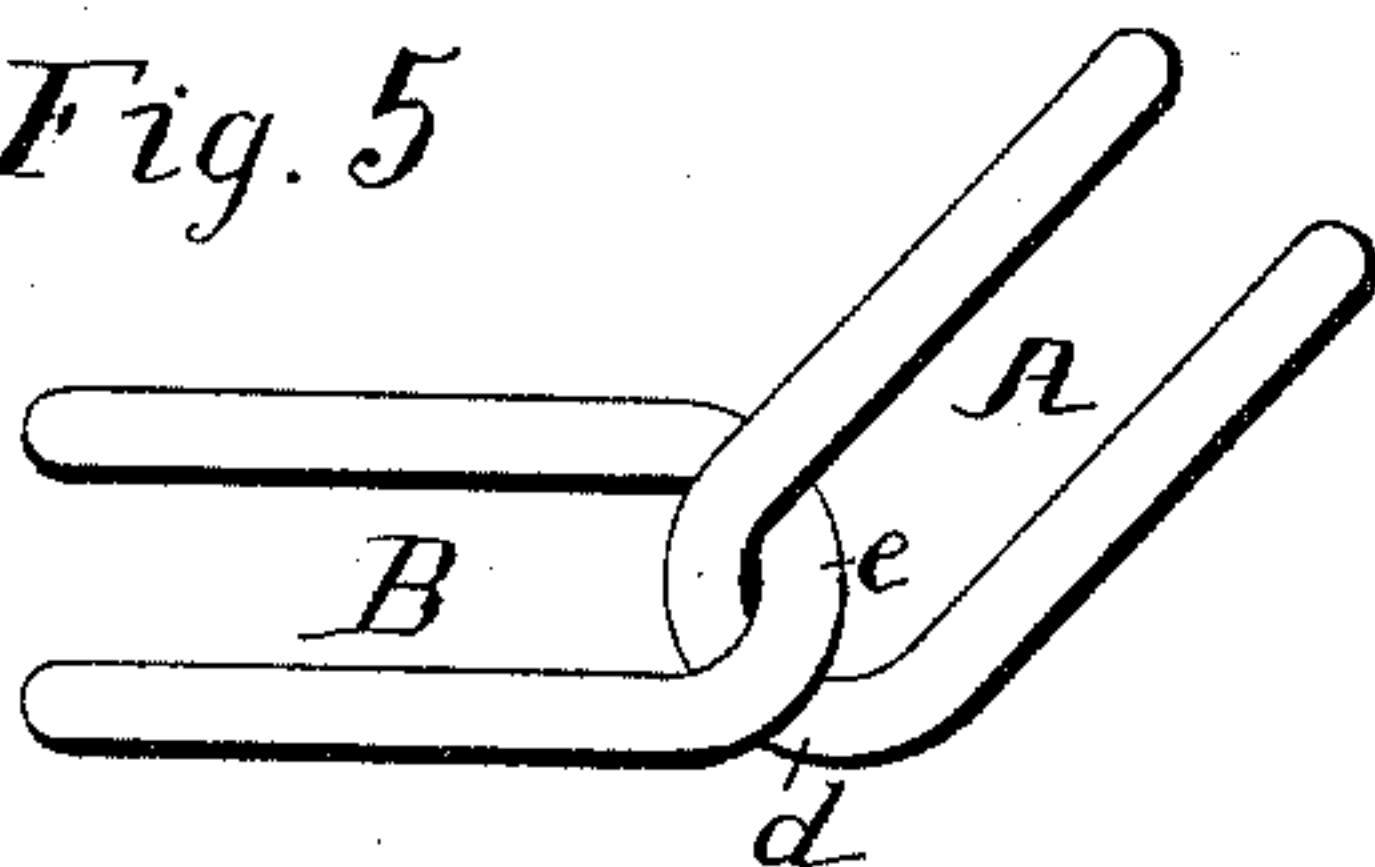


Fig. 7

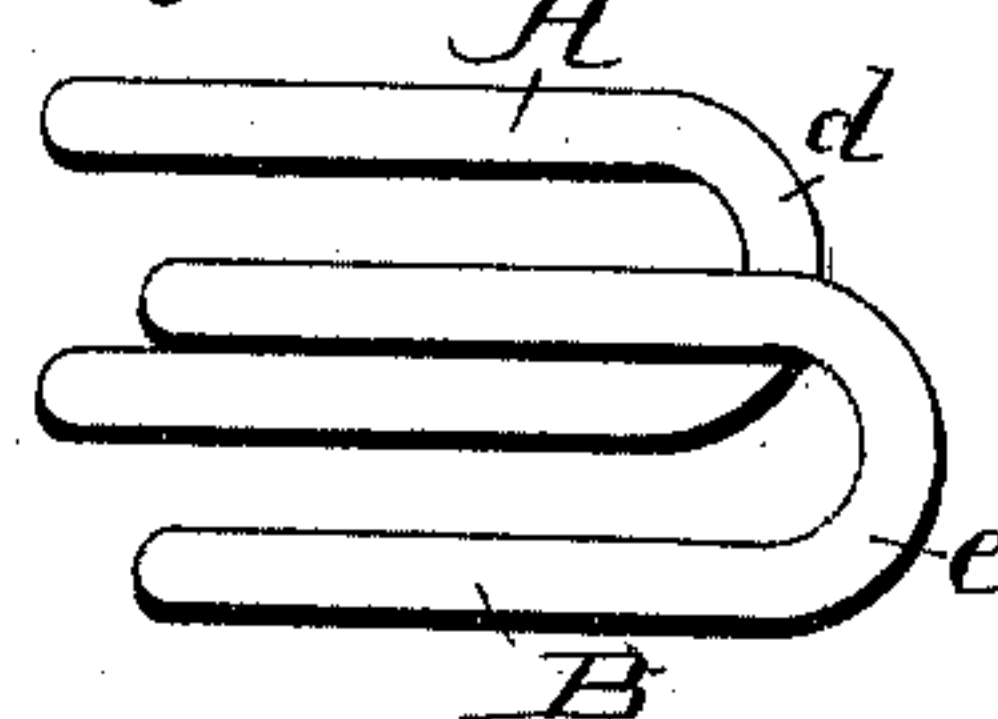


Fig. 8

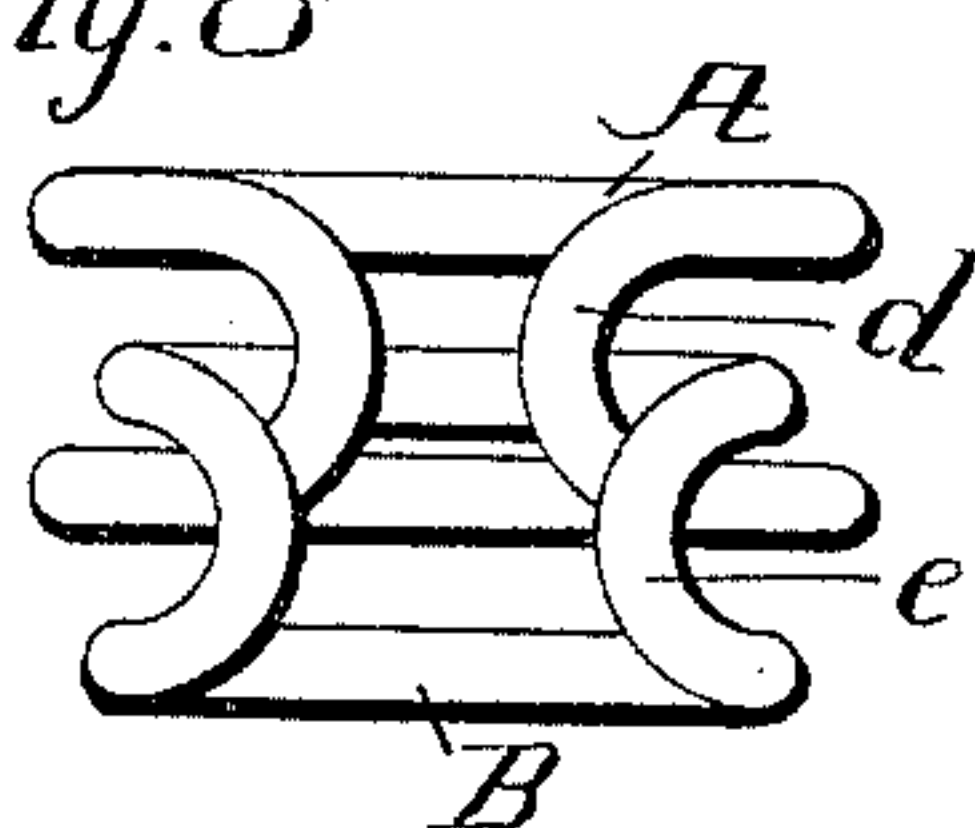


Fig. 9

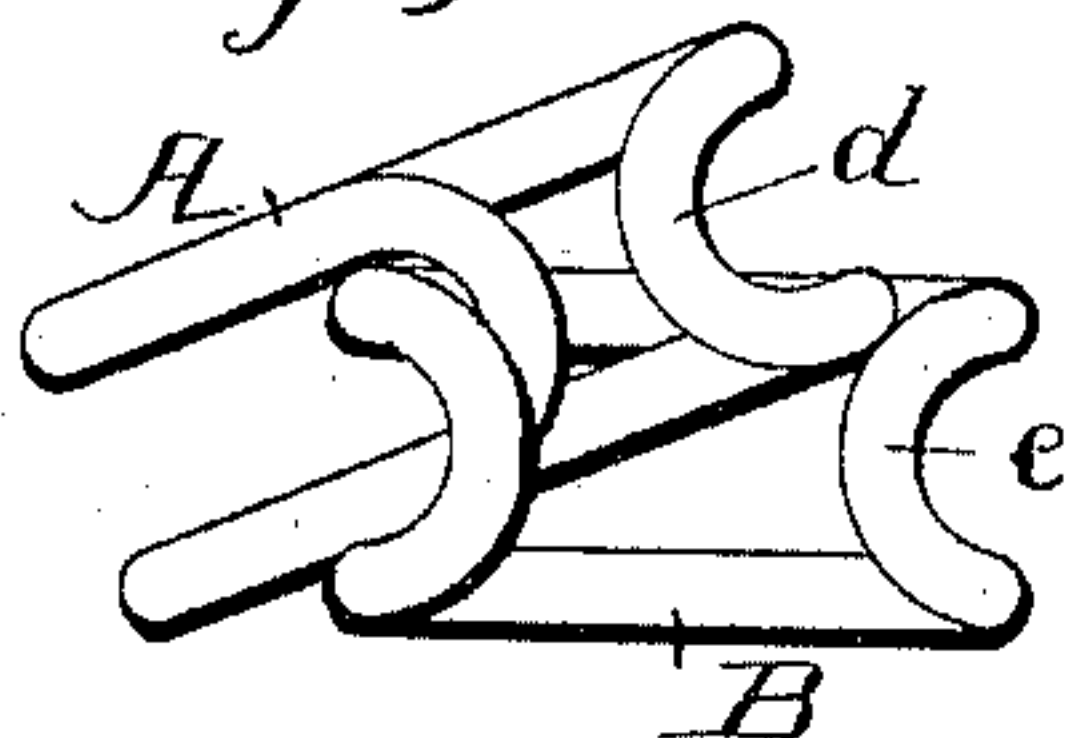


Fig. 10

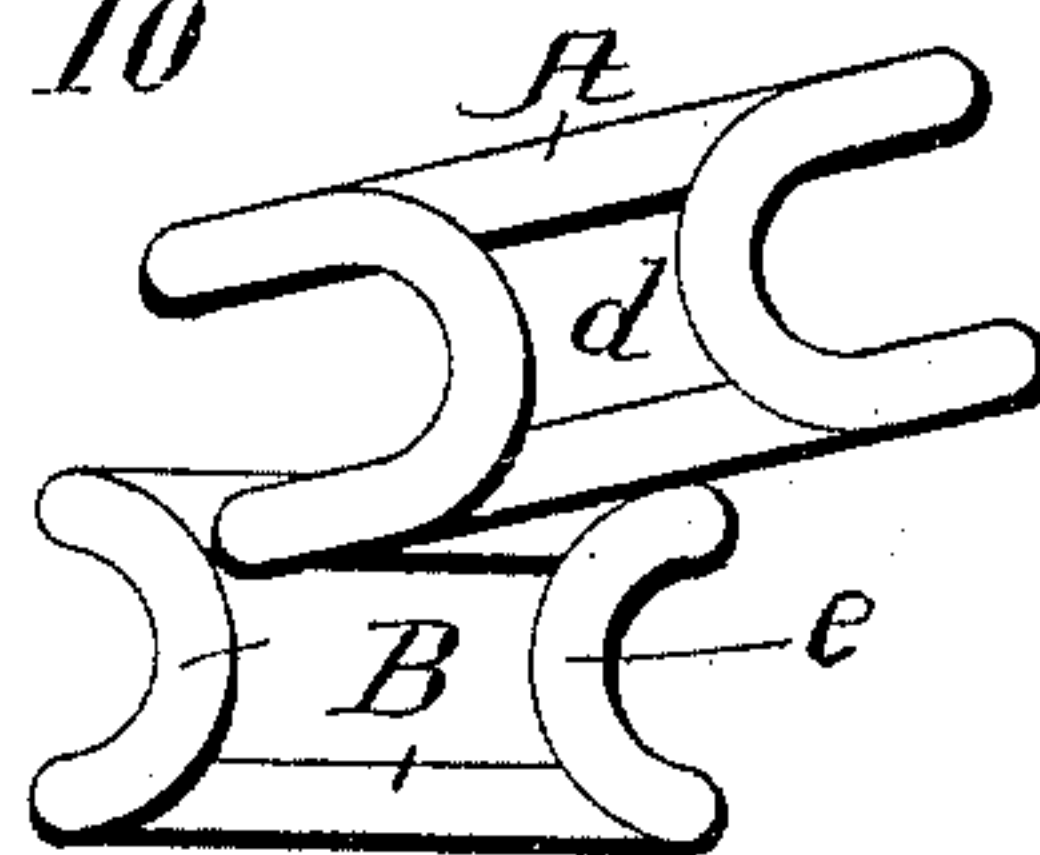
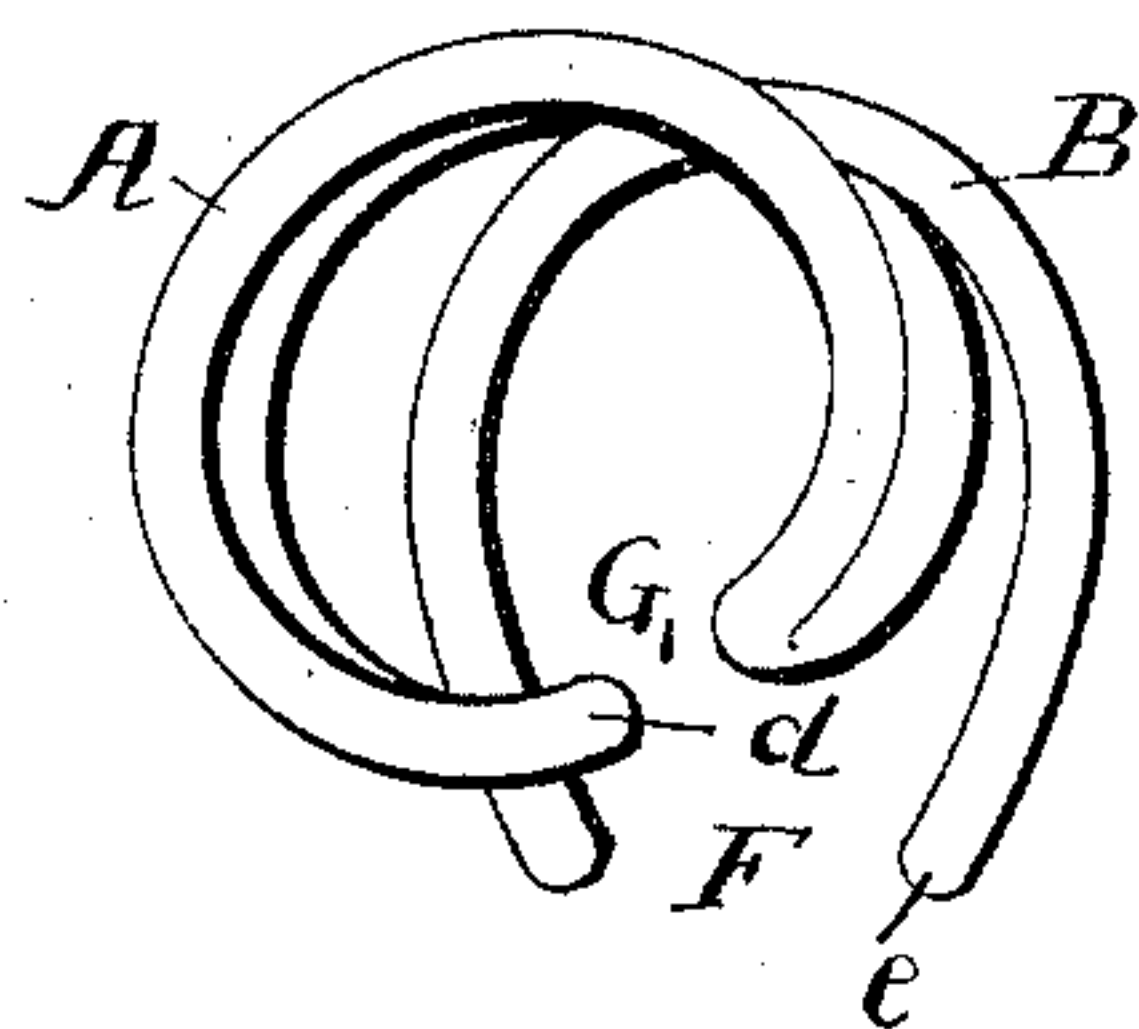


Fig. 11



Witnesses :

Willis Barnes  
Linn Barnes

Inventor :

James P. Dennis  
By  
George L. Barnes  
Atty.



# UNITED STATES PATENT OFFICE.

JAMES P. DENNIS, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO HENRY O'NEIL, OF SAME PLACE.

## PUZZLE.

SPECIFICATION forming part of Letters Patent No. 584,857, dated June 22, 1897.

Application filed October 8, 1896. Serial No. 608,230. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES P. DENNIS, a citizen of the United States, and a resident of New Haven, in the county of New Haven, in the State of Connecticut, have invented certain new and useful Improvements in Puzzles, of which the following is a specification.

The object of my invention is to provide a mechanical puzzle of simple design and interesting novelty; and the invention consists in the novel arrangement, combination, and construction of a pair of looped links adapted to be interlocked in an apparently inseparable relation, while admitting of being readily detached from each other when the peculiar principle of their operation is understood, all as hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of my puzzle; and Fig. 2 is a vertical section on the line  $xx$ , Fig. 1. Fig. 3 is a side view of Fig. 1, and Fig. 4 is an end view of the same. Figs. 5, 6, and 7 are side views showing the parts in different relative positions in the progressive order passed through in the operation of detaching the same. Fig. 8 is an end view of Fig. 7, and Figs. 9 and 10 are end views showing the further relation of the parts in completing the operation of detachment. Fig. 11 is a plan view of Fig. 9, and Fig. 12 is a plan view of Figs. 7 and 8.

Referring to the drawings, the invention is shown to comprise two links A and B, each bent into the form of a loop, the ends of the loops, which are respectively designated by the letters  $d$  and  $e$ , being brought around nearly together, as shown, and the sides of the link being substantially parallel and separated by a space considerably exceeding the diameter or thickness of the metal, which is preferably circular in cross-section, as shown in plan view of the ends of the loops and in the sectional view in Fig. 2. The outline of the loops, as shown in Figs. 1, 11, and 12, is elliptical, and the loop A has a diameter in the direction transverse to a line passing vertically between the ends of the loop, exceeding the corresponding diameter of the loop B by twice the thickness of the cross-section of the metal, so that the outside diameter of the loop A is the same as the inside diameter of the loop B, as indicated by the dotted line

$yy$  in Fig. 1. The width of the space F between the ends of the loop B exceeds the width of the space G between the ends of the loop A by the same amount, as shown by the dotted line  $zz$  in said figure. These proportions and configurations of the parts enable the links to be connected or detached in the manner which constitutes the puzzling feature of the invention.

Constructed as above described and shown the operation of this puzzle is as follows: Supposing the links to be connected together as shown in Figs. 1, 3, and 4, they are apparently incapable of being separated except by being cut or broken, but are, in fact, susceptible of being readily detached by the following movements: Hold the loop B stationary, as shown in Fig. 3, and turn the loop A over through the successive positions (shown in Figs. 5 and 6) until it is brought into the positions shown in Figs. 7, 8, and 12. Then, still holding the loop B in its original position, turn the loop A to one side, as shown in Fig. 11, after which, by canting it, as shown in Fig. 9, it may be wholly withdrawn out from the loop B, as shown in Fig. 10. By reversing the order of these operations the parts may readily be placed together again into the position shown in Fig. 1. As some study is required in order to learn the secret of these motions the device comprises a very interesting and practical puzzle.

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

The herein-described puzzle consisting essentially of a pair of endless parallel-sided links each bent into the form of a loop or return-bend of elliptical outline, the outside transverse diameter of one loop corresponding to the inside transverse diameter of the other loop, and the ends of the loop of least diameter being separated by a space equal to twice the thickness of the metal in excess of the space between the ends of the loop of greatest diameter, whereby the individual links may be hooked together or disconnected, substantially in the manner and for the purpose specified.

JAMES P. DENNIS.

Witnesses:

PHILIP TROUP,  
HENRY O'NEILL.