

F. L. INCE:  
 PUZZLE.  
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1,327,388.

Patented Jan. 6, 1920.

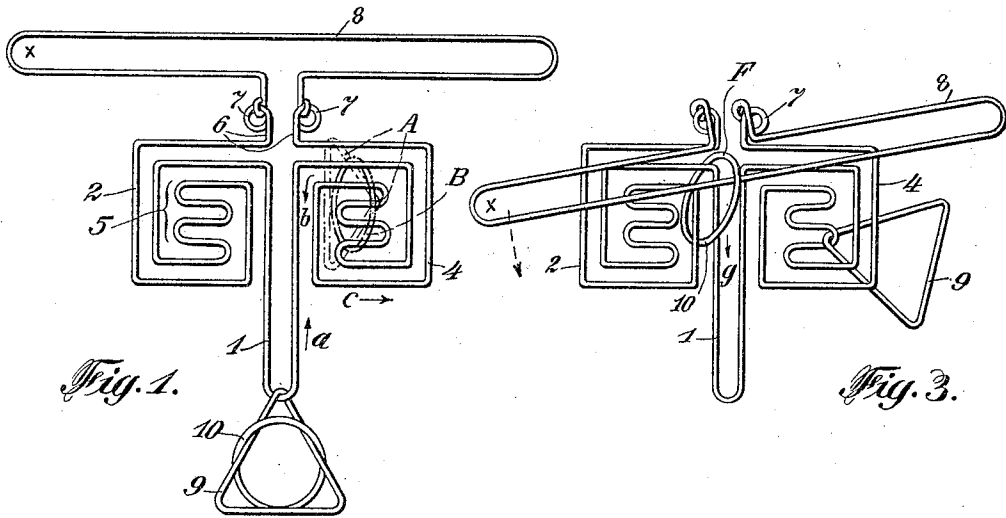


Fig. 1.

Fig. 3.

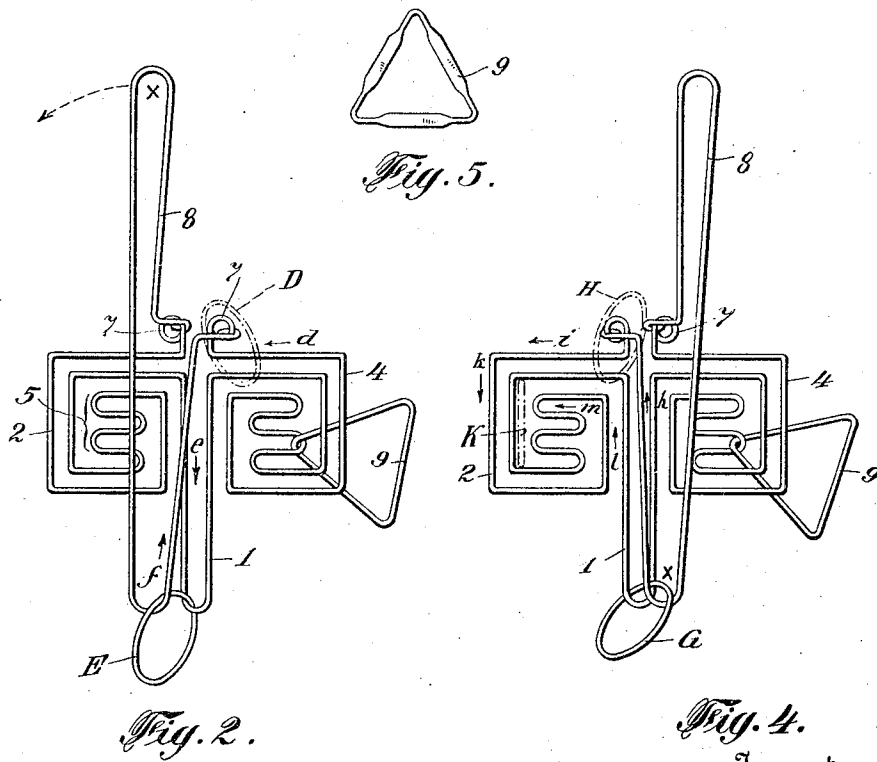


Fig. 5.

Fig. 2.

Fig. 4.

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## PUZZLE.

1,327,388.

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### *To all whom it may concern:*

Be it known that I, FRANK L. INCE, a citizen of the United States, and a resident of the city of Maplewood, in the county of St. Louis, State of Missouri, have invented new and useful Improvements in Puzzles, of which the following is a specification.

This invention relates generally to games and toys and particularly to a form of puzzle, which constitutes an interesting amusement device and an attractive novelty suitable for effective use as an advertising article, favor, or the like.

The object of the invention is the provision of a puzzle of the link variety which presents an apparently insolvable problem for one not acquainted with the proper method of manipulating the device.

An ancillary object is the provision of such an article of manufacture which may be produced very cheaply and is thereby adapted for use as an advertising device, or the like, intended for free distribution.

In the accompanying drawings I have shown an embodiment of the invention, and illustrative views for showing the steps in the solution of the problem presented by the device, but it will be understood that the article is susceptible of various minor changes of form, proportion, design, and the like, without departing from the scope of the invention, as indicated in the appended claims.

The invention is a puzzle of the link and maze variety, in which the problem presented is the unlinking or disconnecting of relatively movable members which are apparently permanently linked together. The arrangement is illustrated in Figure 1, which shows a plan view of the device. Figs. 2 and 4 are plan views of the device showing the parts moved to altered relationships in the process of the solution. Fig. 3 is a plan view illustrating certain positions of the parts in the working out of the puzzle, and Fig. 5 is a plan view of an alternative form of one of the constituent members of the device.

As shown in these drawings, particularly Fig. 1, it will be understood that the device is made up of a strand of wire having proper rigidity to maintain its shape under the intended uses of the device, said strand of wire being doubled upon itself and bent to form a body member of trefoil shape comprising a central loop 1 and the lateral loops

2 and 4. The central loop 1 is substantially straight and forms a median and connecting member for the lateral loops 2 and 4, which are convoluted, as shown, and which terminate in the sinuous end portions 5. The ends of the strand of wire are shaped to form the tangs 6, the space between which is aligned with the loop 1, and the extremities of which are bent to form the rings 7. The trefoil body member and the constituent loops thereof are closed by the closing link 8, which is a wire member having its ends looped through the loops 7, and having its major portion formed as an elongated loop or link extending normally transversely of the trefoil member. The connection of the closing link to the trefoil member is such as to permit its being swung to a position at substantially right angles to its normal position so as to extend longitudinally of, and in part register with, the central loop 1, and the dimensions of said closing link are such that when swung to such position either end will extend substantially to the outer extremity of the loop 1. Permanently interlocked on the strand forming the trefoil member and the closing link is a keeper 9, preferably of angular form, and most conveniently of triangular form, as illustrated. Looped on the central loop 1 and the keeper 9 is a removable member 10, which is most conveniently of circular contour, and is of such dimension that its removal off the central loop 1 is prevented by the lateral loops 2 and 4, and its removal from the keeper 9 is prevented by the size and form thereof. The dimension of the removable member 10 is such that it is movable on to and off of the central loops 2 and 4 over the broadened and sinuous extremities 5. The problem presented by the puzzle is the removal of the member 10 from the other parts.

The manner in which the removal of the member 10 is accomplished is illustrated in Figs. 2, 3 and 4. In the explanation of the procedure, the successive positions of the removable member are designated by capital letters, and the direction of movement by the arrows bearing the small letters. I have also designated one extremity of the closing link 8 by the character X, as serving to identify the left-hand end of said link in all the views.

In the solution of the problem the keeper, with the removable member 10 thereon, is moved up one side of the central loop 1 in

the direction indicated by the arrow *a*, to a position on one of the bends of the sinuous extremity 5, as at the position A. The removable member 10 is then lifted from the keeper 9, and slipped over the sinuous extremity of the lateral loop to the position illustrated at B. The removable member is then moved in the direction of the arrows *b*, *c*, and *d*, to the position illustrated in Fig. 2 at D. The closing link 8 is then swung to the position illustrated in Fig. 2, and the removable member is slid down within the loops of the central loop 1 and the closing link, in the direction of the small arrow *e* to the position shown in Fig. 2 at E. Then the removable member is moved up along said loops in the direction indicated by the arrow *f* to the position illustrated in Fig. 3 at F. With the removable member in this position the closing link is then swung in the direction illustrated by the dotted arrow in Fig. 2, to the position illustrated in Fig. 3, and finally to the position illustrated in Fig. 4. At this swinging of the closing link, the removable member is permitted to move down within the loops of said link and the central loop 1 in the direction of the arrow *g* to the position illustrated at G in Fig. 4. The closing link having reached the position illustrated in Fig. 4, the removable member is then moved upwardly on said link and the central loop in the direction of the arrow *h* to the position illustrated at H. From such position it is advanced in the direction of the arrows *i*, *k*, *l*, and *m*, and removed from the end of the lateral loop as at K. The removable member may be replaced by a reversal of the operations, being replaced on the keeper when the latter is on one of the bends of one of the lateral members as shown at A in Fig. 1.

If desired, the keeper 9 may have its sides flattened as illustrated in Fig. 5, to afford faces upon which advertising matter or other legends may be stamped or imprinted. This article, while providing an interesting and puzzling amusement device, may be manufactured from inexpensive material at very low cost, so as to be salable in lots at a very small price. This adapts it particu-

larly to use as a souvenir or advertising novelty intended for free distribution.

Having thus described my invention, what I claim is:

1. A puzzle comprising a body member of trefoil form having convoluted lateral loops conjoined by a comparatively narrow median loop, said body member being closed by a movable closing link extending transversely of the body member and movable into position overlying the median loop, a closed keeper permanently interlinked with the body member and closing link, and a removable member retained on the keeper, said removable member being movable from the keeper on to and off of the loops of the body member.

2. A puzzle comprising a body member of trefoil form having convoluted lateral loops conjoined by a comparatively narrow median loop, said body member being closed by a movable closing link extending transversely of the body member and movable into position overlying the median loop, a closed keeper permanently interlinked with the body member and closing link, and a removable member retained on the keeper, said removable member being movable from the keeper on to and off of the loops of the body member, and within the loops of the closing link and the median loop.

3. A puzzle comprising a strand of wire shaped to form a body member with a central loop and lateral loops, a closing link formed of a strand having its ends connected respectively to the ends of the strand forming the body member in such fashion as to permit the closing link to be swung over the central loop, a closed keeper permanently interlinked with the connected strands forming the body member and closing link, a removable member strung on the body member exterior of the loops thereof and retained by the keeper against removal thereover, said removable member being movable from the keeper onto the lateral loop and from one lateral loop on to the other lateral loop through the connecting link and central loop.

FRANK LESLIE INCE.