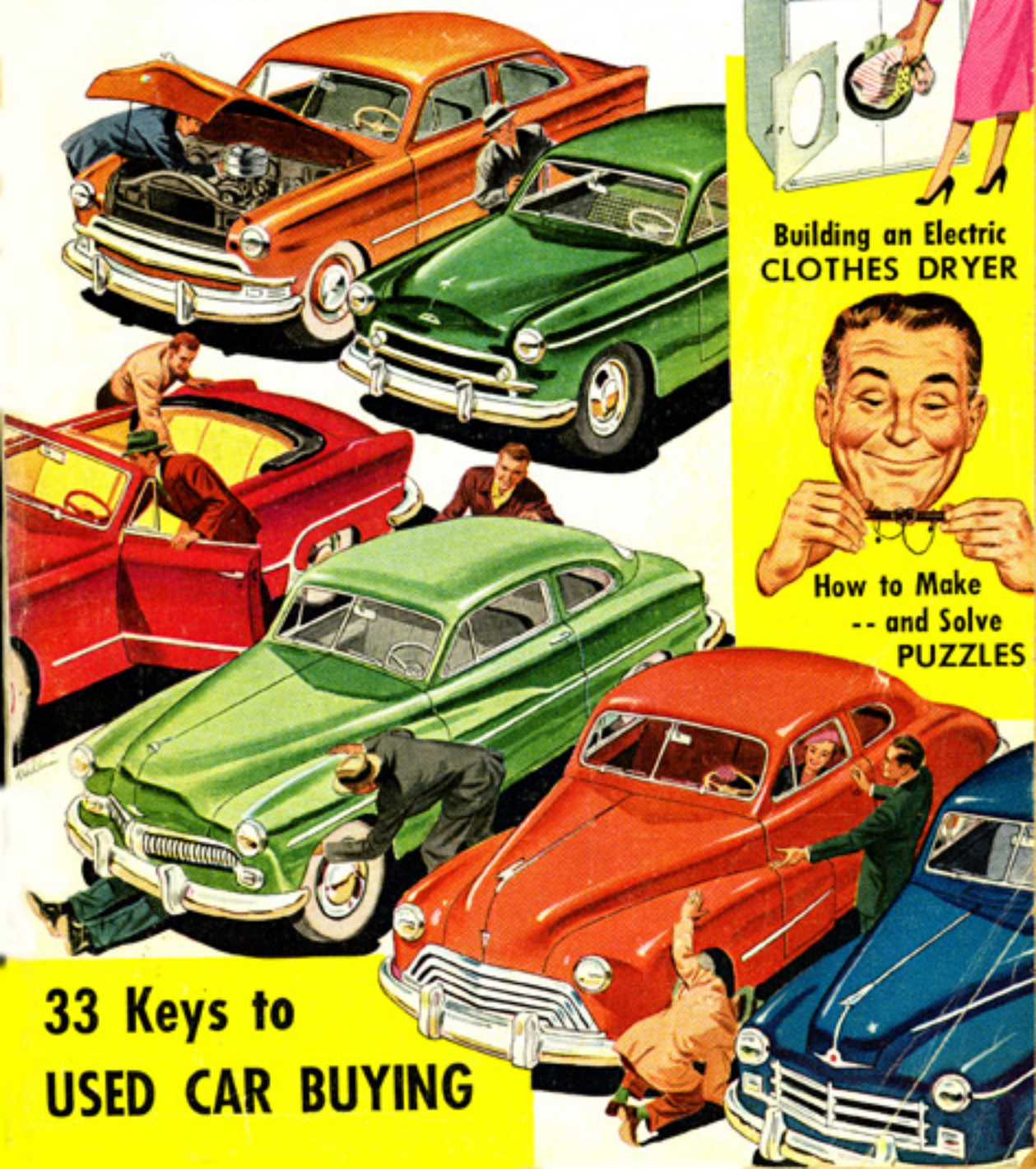


# SCIENCE and MECHANICS

The Magazine That Shows You How

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OCTOBER

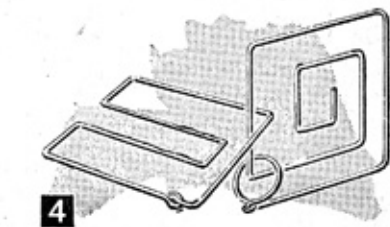
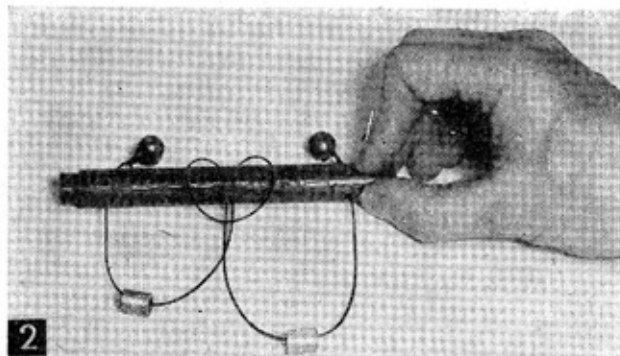
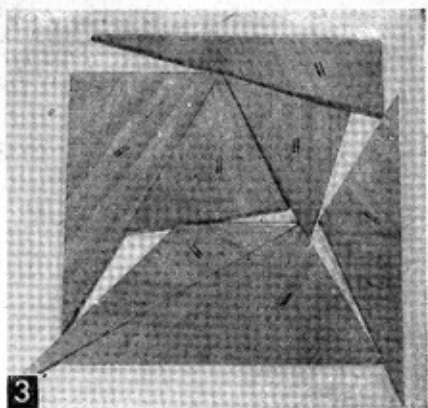
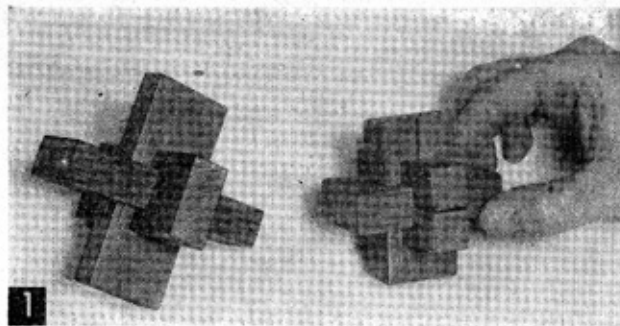


Building an Electric  
CLOTHES DRYER

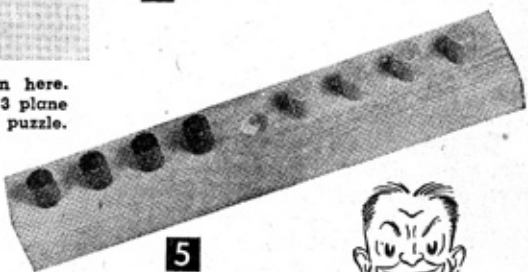


How to Make  
-- and Solve  
PUZZLES

33 Keys to  
USED CAR BUYING



Six of the eleven puzzles in this article are shown here. Fig. 1 block or burr puzzles, Fig. 2 string puzzle, Fig. 3 plane geometry puzzle, Fig. 4 string puzzle and Fig. 5 peg puzzle.



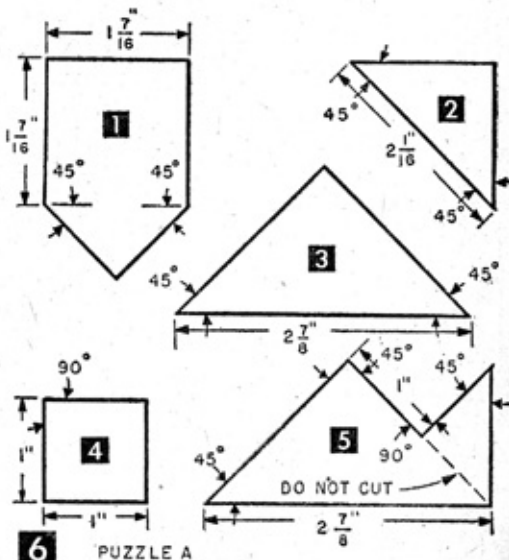
# Making and Solving PUZZLES

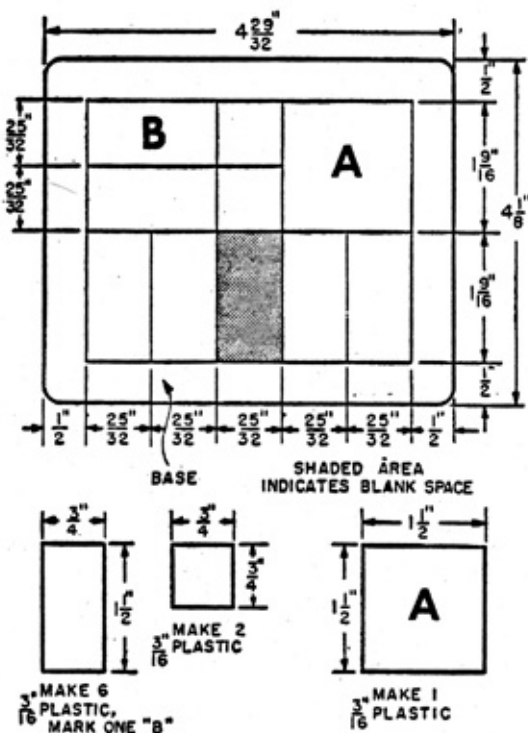
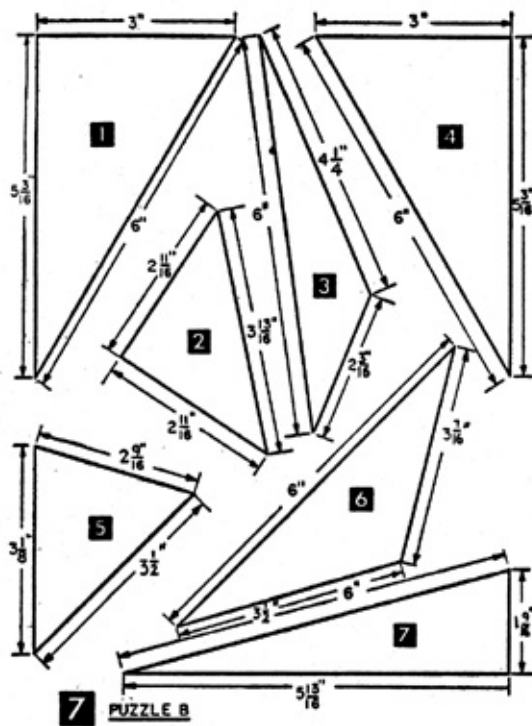
By JERRY SLOCUM

DESIGNING, making and collecting puzzles is an interesting and entertaining hobby that you can share with everyone. Since the puzzles are made from bits of wire, wood, plastics, string or cardboard, it costs practically nothing to make them. Puzzles make excellent gift items and if you are looking for an item to make and sell, these puzzles should find a ready market.

Different types of puzzles appeal to different people. For example, plane geometry puzzles as in Figs. 3 and 6 interest women who enjoy sewing, because solving these puzzles is somewhat like arranging paper patterns on cloth. Artists, engineers and draftsmen, because of their ability to visualize in three dimensions, like the wire or burr puzzles (Fig. 4). Single-plane manipulation puzzles as in Figs. 8 and 9 appeal to people who like to plan things ahead, because several

Craft Print  
Project No. 230

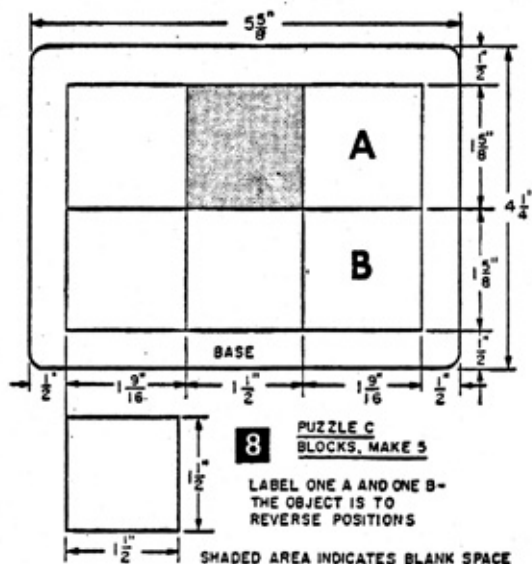




advance moves can be "seen" and anticipated before they are actually made. Carpenters, cabinetmakers and people who like to work with wood will appreciate the puzzles in Fig. 1.

Detailed instructions for making 11 different puzzles follow. After making, test your skill at solving them and then check with the solutions on pages 125 and 126.

**Puzzles A and B.** These are plane geometry puzzles and probably the easiest to make. Lay out the pieces as in Figs. 6 and 7 on cardboard,

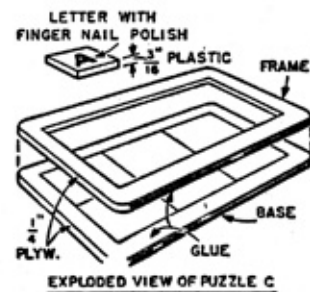
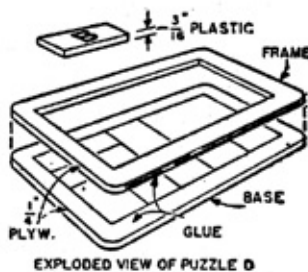


## 9 PUZZLE D

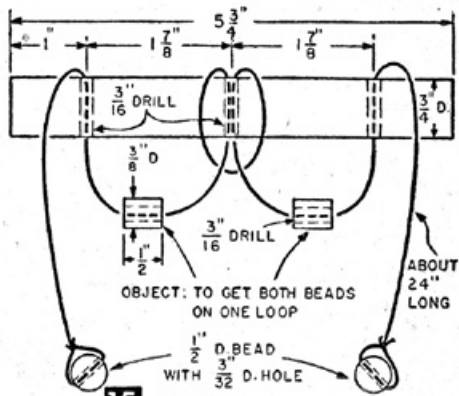
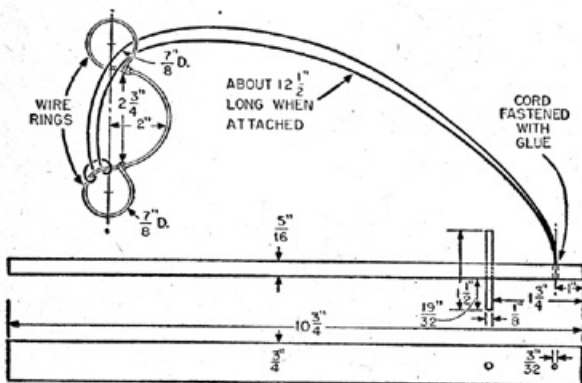
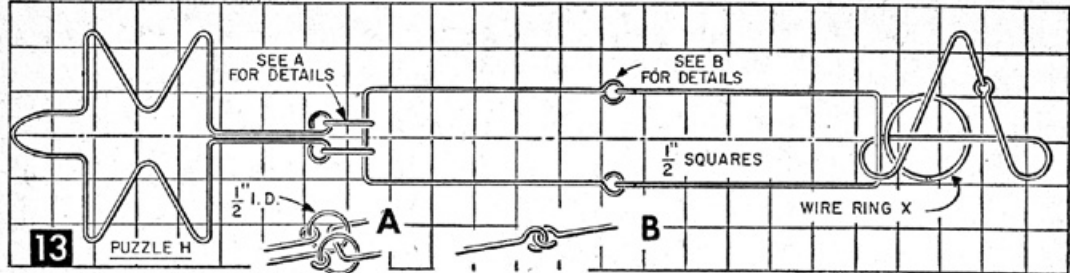
plastic or plywood and cut them out. Cutting up a square marked out from the solution of the puzzle takes away the challenge of solving the puzzle yourself. If plywood is

used, lay out the pieces so that the wood grain is running in a different direction on each piece (Fig. 3). Otherwise the grain may give a clue to the solving of the puzzles. The object of each puzzle is to arrange the pieces to form a perfect square. There are two solutions to puzzle A (Fig. 6), one including the use of piece 4 and one without using piece 4. Often these types of puzzles can be arranged to form other shapes such as a tee or cross for the solution.

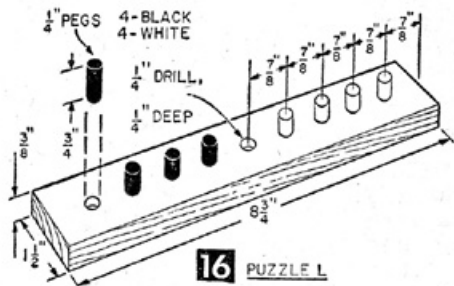
**Puzzles C and D.** These are movement puzzles, the solutions to which result from the interchanging of the lettered blocks (Figs. 8 and 9) by sliding (not lifting) the blocks within a frame. Make the







**Puzzle inventors and hobbyists** Jerry and Margot Slocum with their puzzle display board exhibiting some of their collection of 300 puzzles. If you are a puzzle hobbyist and would like to correspond with the Slocums, their address is: 3377 Bagley Ave., Los Angeles 34, California.



on the same loop.

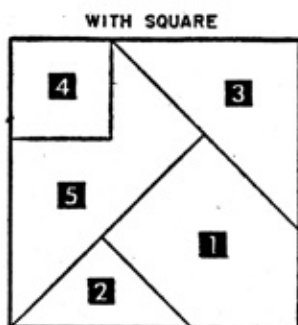
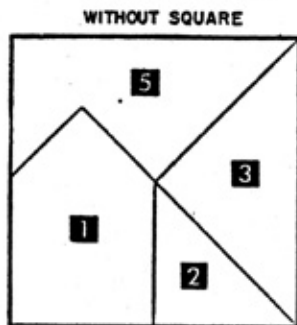
Some clues to help you solve string puzzles are: the length of the string, the size of the holes and whether the string is permanently fastened to the support bar as in Fig. 14 or if the string is pulled through a hole in the support bar as in Fig. 15. A long string indicates large loops can be made to pass various puzzle parts through. Large holes with only one string through them mean that several other loops of string can be passed through the same hole to solve the puzzle. No fair removing permanently fastened strings.

**Peg Puzzle L.** Make up as in Fig. 16. The object of this peg puzzle is to interchange the colored pegs by moving each peg individually into an adjacent hole or by jumping one peg only of either color. No pegs may be moved or jumped backward.

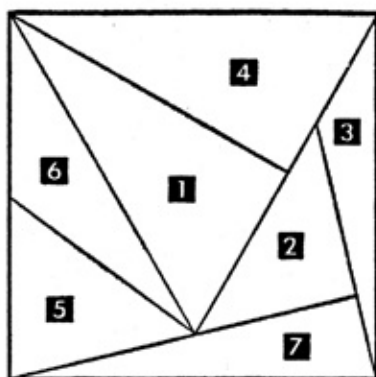
You can also improve this puzzle from perforated hardboard or tile.

● Craft Prints in enlarged size for building novelty projects are available at \$1.00 each. Order by print number, enclosing remittance (no C.O.D.'s or stamps) from Craft Print Dept., SCIENCE AND MECHANICS, 450 East Ohio Street, Chicago 11, Illinois.

# Still Puzzled? Here Are Solutions

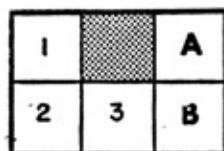


**A** TWO SOLUTIONS

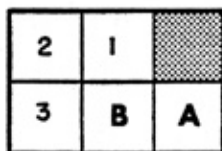


**B**

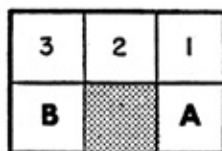
APPROX. THREE MOVES BETWEEN EACH OF THE DIAGRAMS BELOW



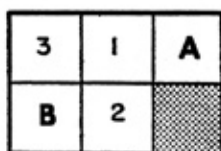
START



I

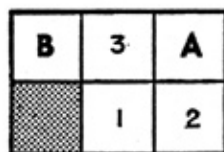


II

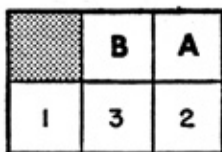


III

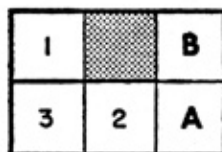
NUMBERS FOR REFERENCE ONLY



IV



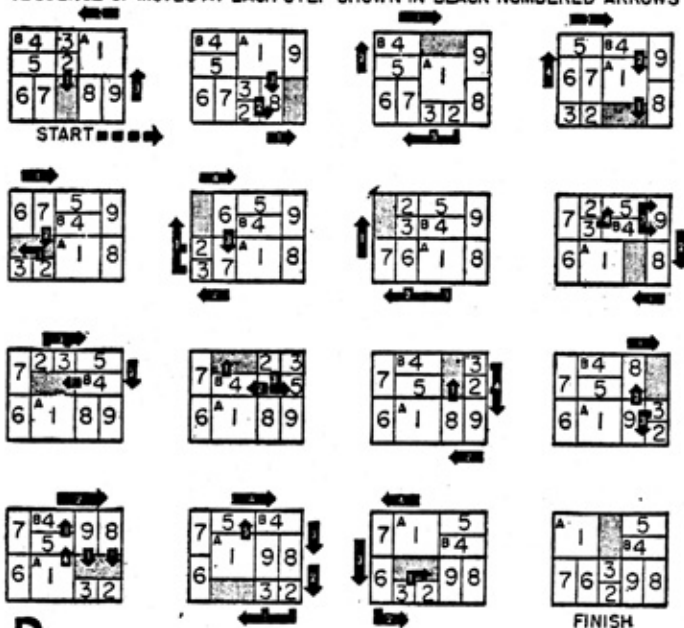
V



VI

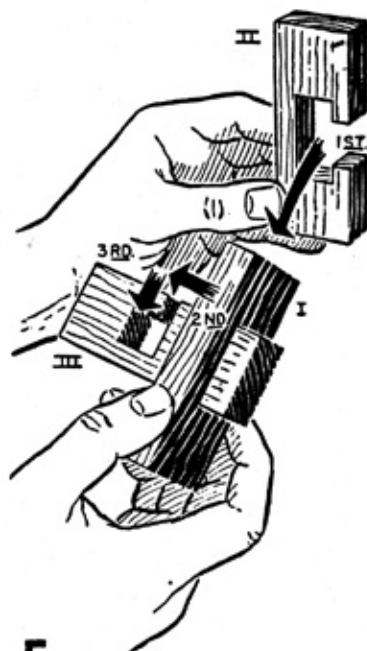
**C**

SEQUENCE OF MOVES AT EACH STEP SHOWN IN BLACK NUMBERED ARROWS



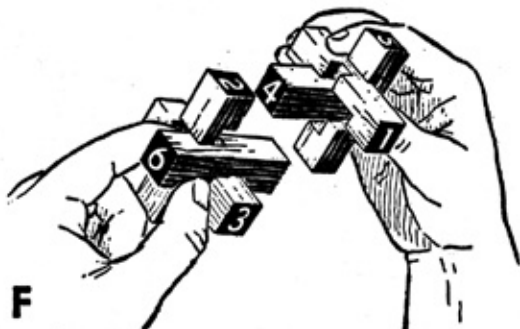
**D**

NUMBERS IN SQUARES FOR REFERENCE ONLY

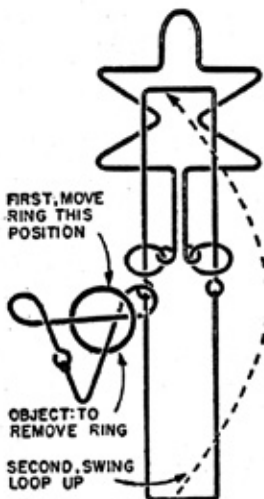
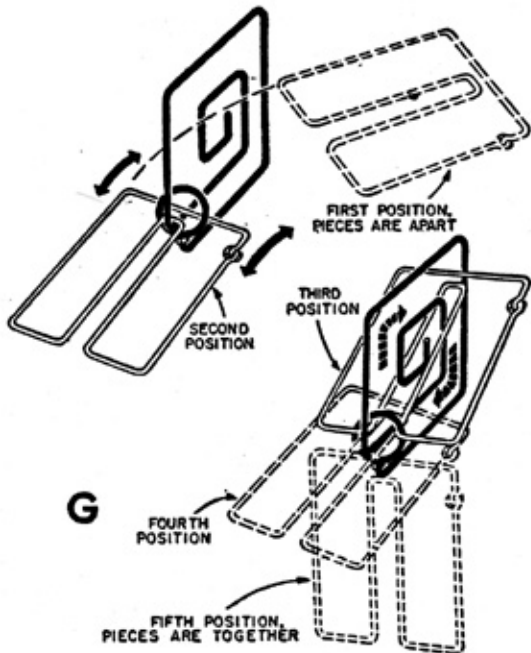


**E**

SEQUENCE OF MOVES INDICATED BY NUMBERS



**F**  
Assemble pieces No. 1, 4 and 5 in one subassembly, and No. 2, 3, and 6 in another subassembly, then slide the two groups together, with No. 4 sliding alongside No. 8.

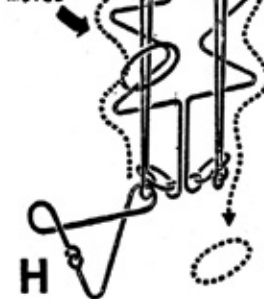


FIRST, MOVE RING THIS POSITION

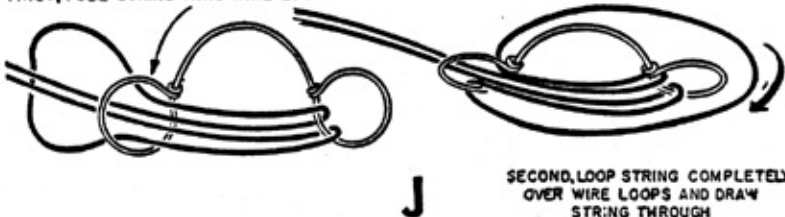
OBJECT: TO REMOVE RING

SECOND, SWING LOOP UP

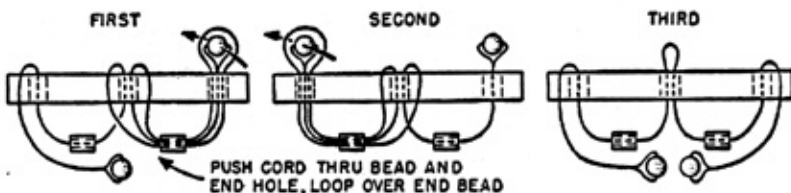
THIRD, DOTTED LINE SHOWS PATH RING MUST TRAVEL TO BE REMOVED



FIRST, PULL STRING THRU WIRE LOOP



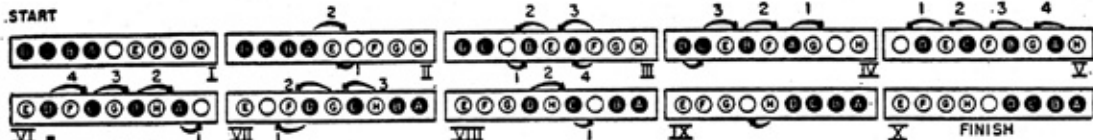
SECOND, LOOP STRING COMPLETELY OVER WIRE LOOPS AND DRAW STRING THROUGH



PUSH CORD THRU BEAD AND END HOLE, LOOP OVER END BEAD

**K**

To solve above puzzle, first get both beads into one central loop by working the cords out of the center hole as shown in Steps No. 1, 2 and 3. Then replace the looped cord through the center hole with the beads on one side by retracing steps used to get center loop off.



**L** LETTERS: FOR REFERENCE ONLY

At each stage, moves are marked in sequence. Moves shown above diagram are jumps; moves shown below diagram are moves to an adjacent hole.