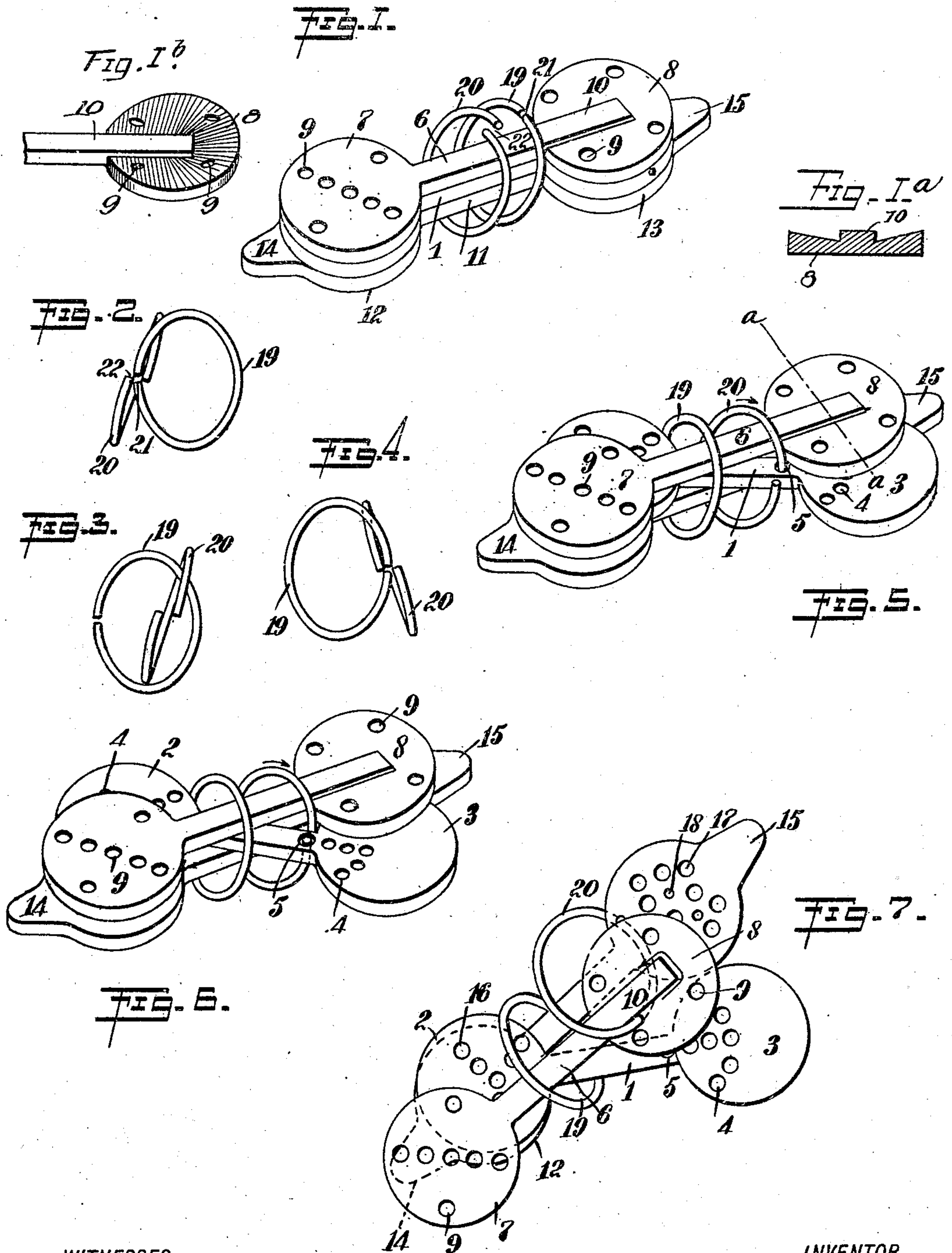


D. E. SMITH.
PUZZLE.
APPLICATION FILED JULY 2, 1909.

956,441.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 8.

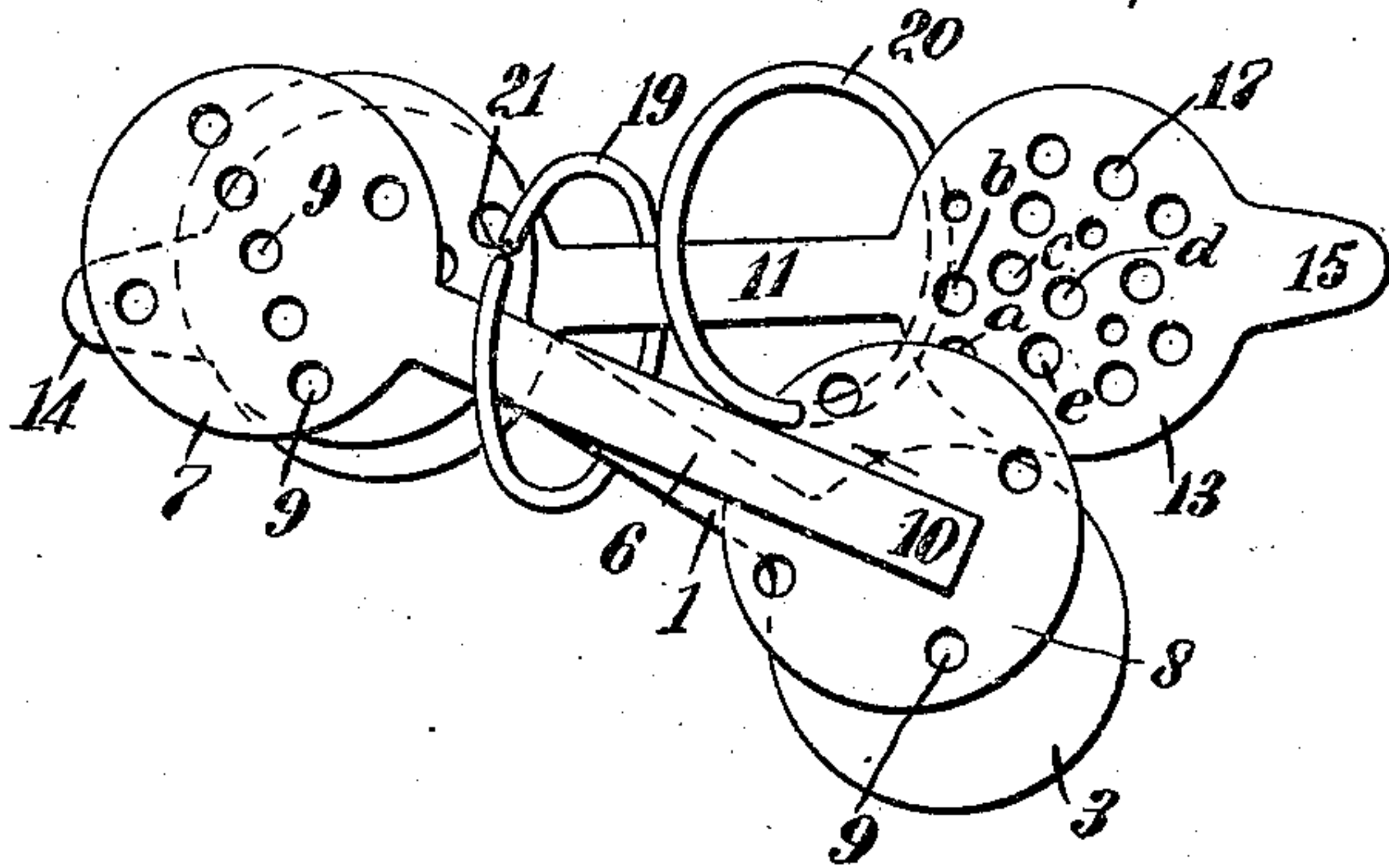


FIG. 9.

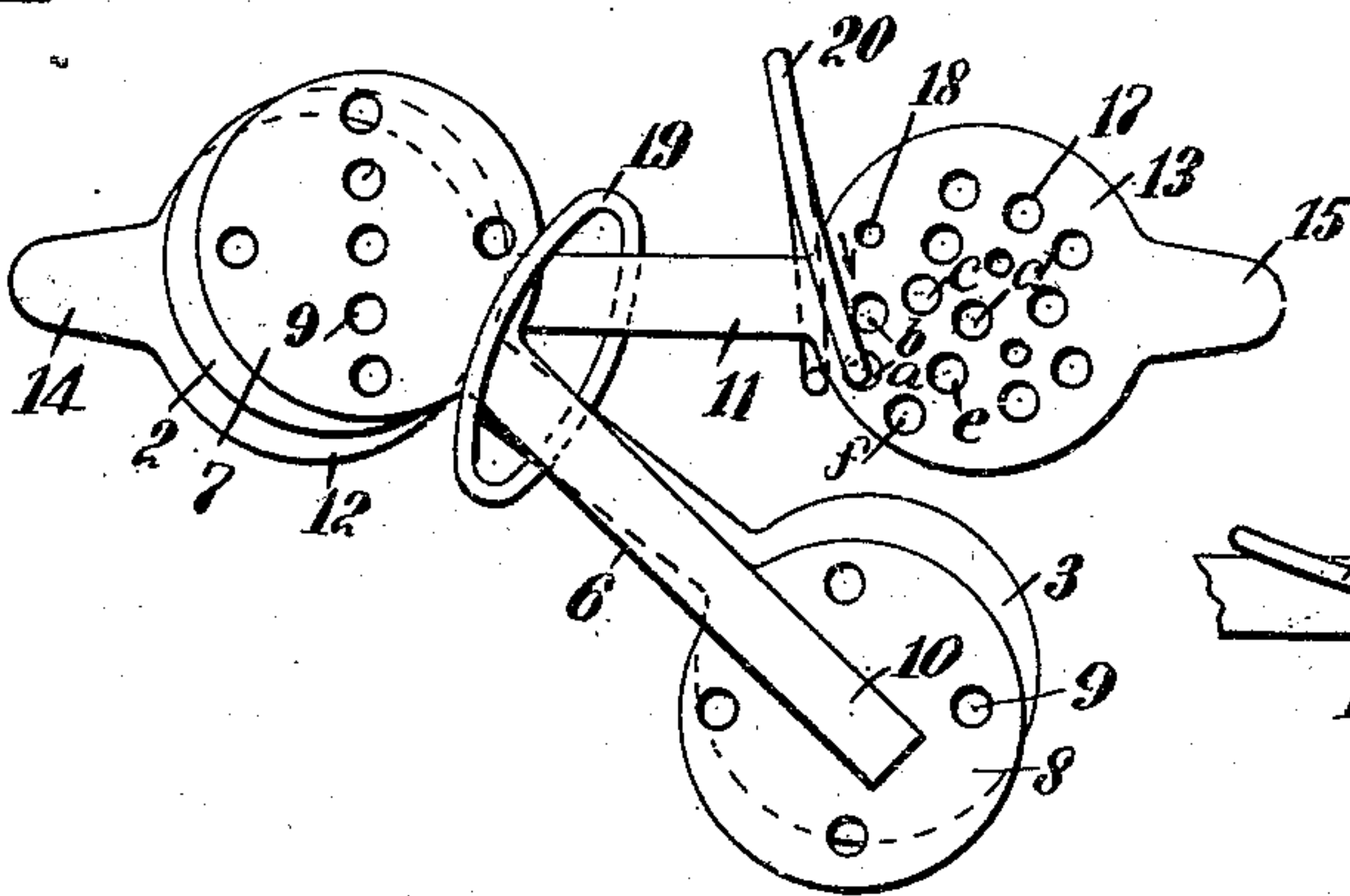


FIG. 10.

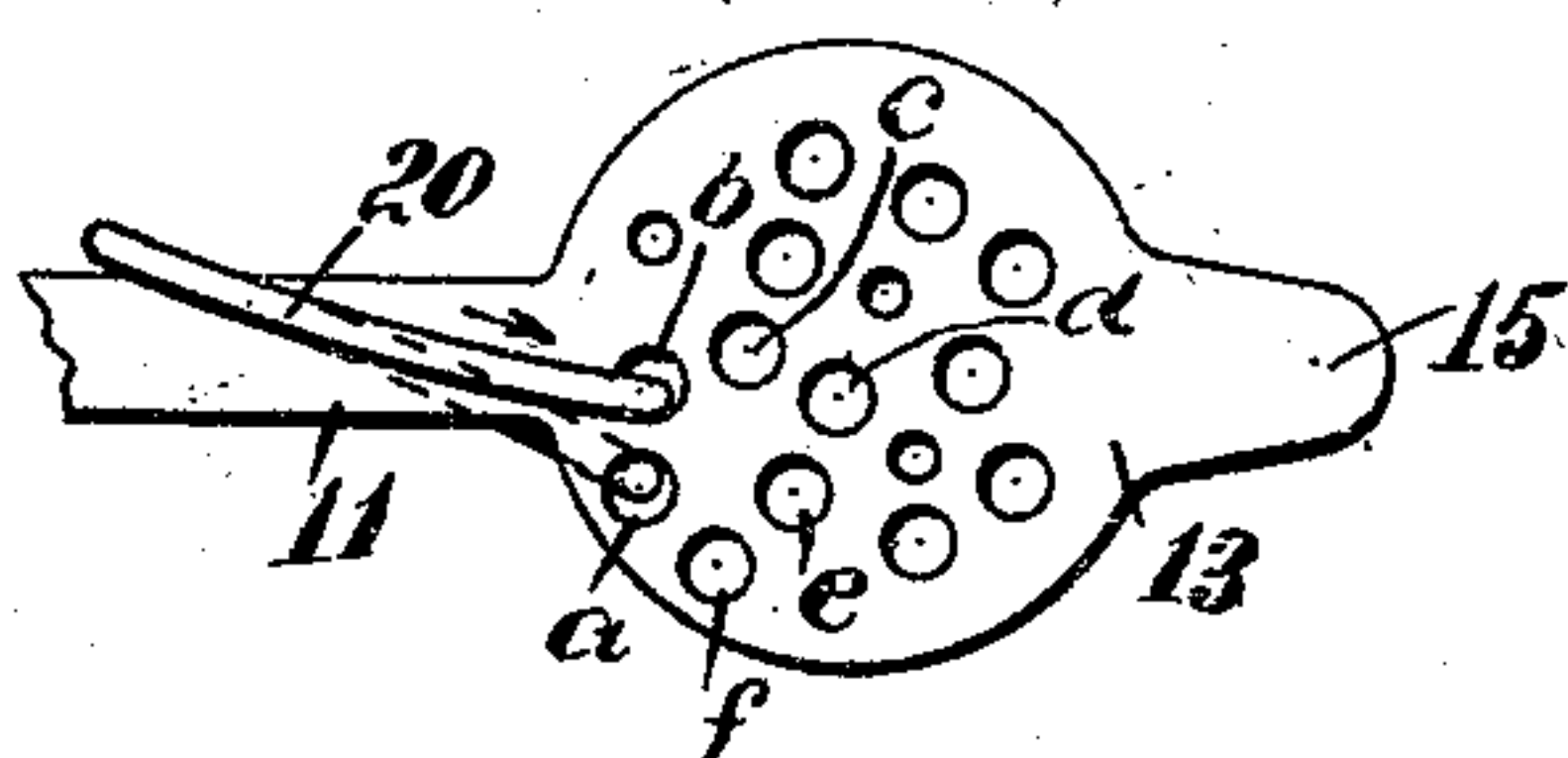


FIG. 12.

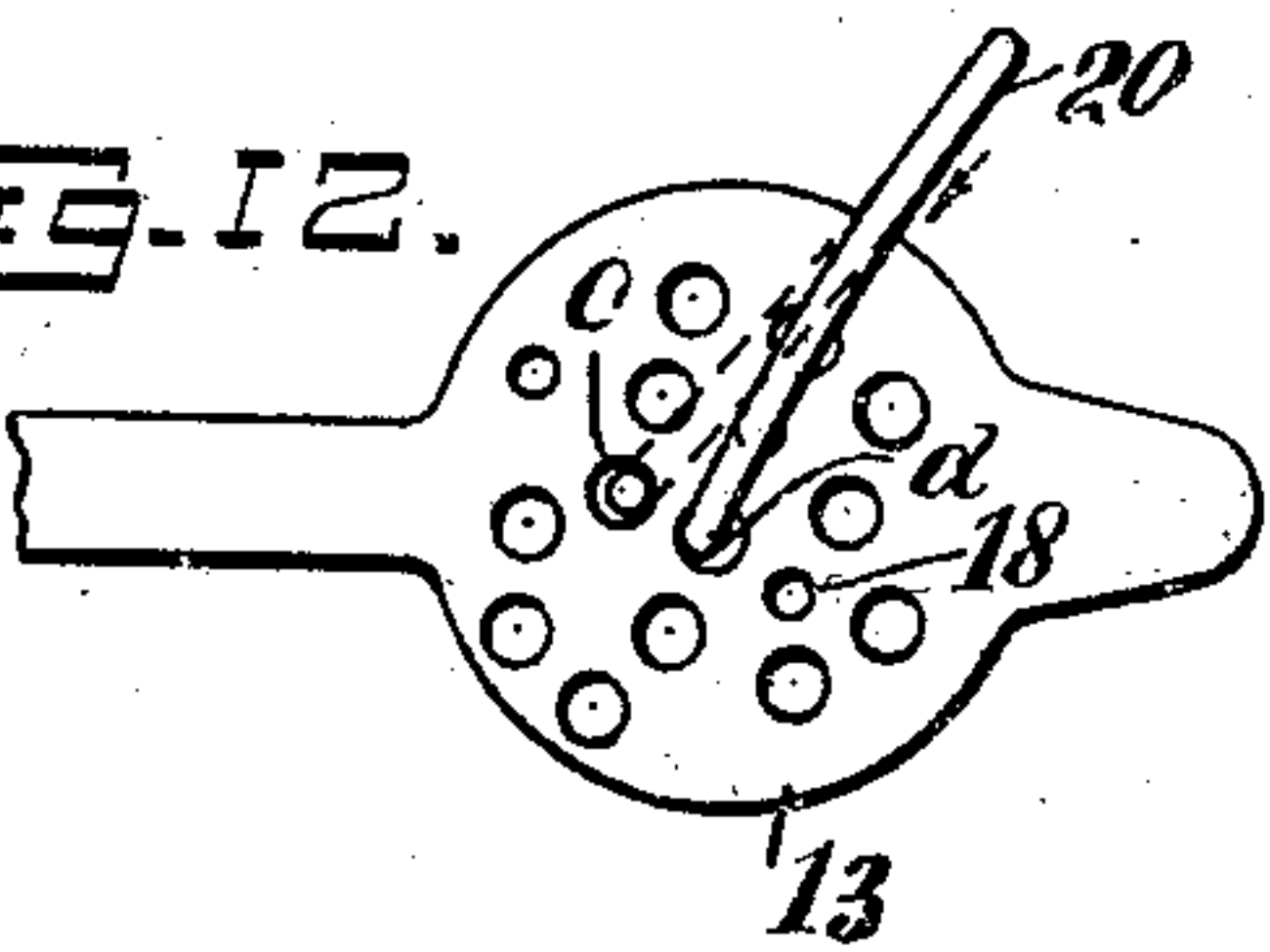


FIG. 11.

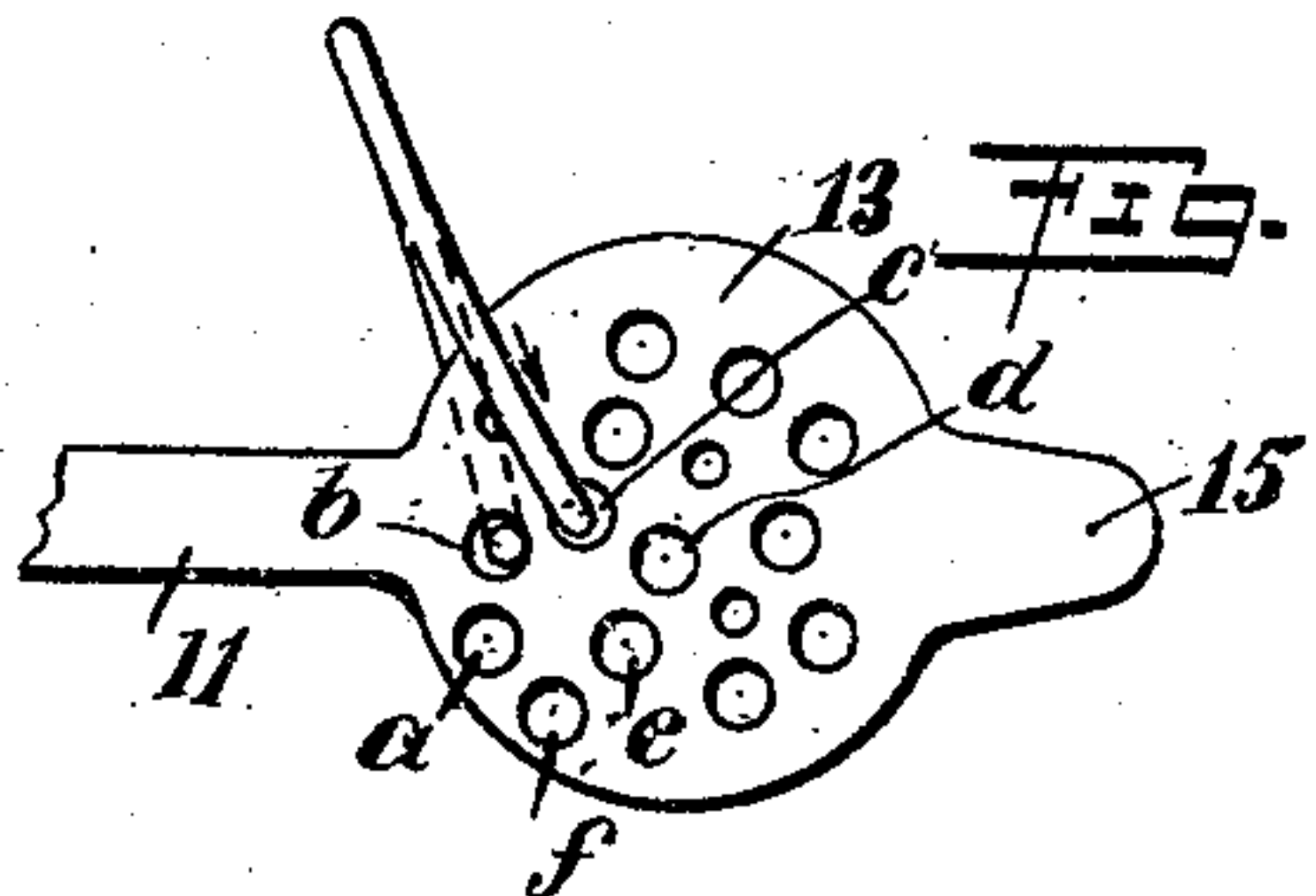


FIG. 13.

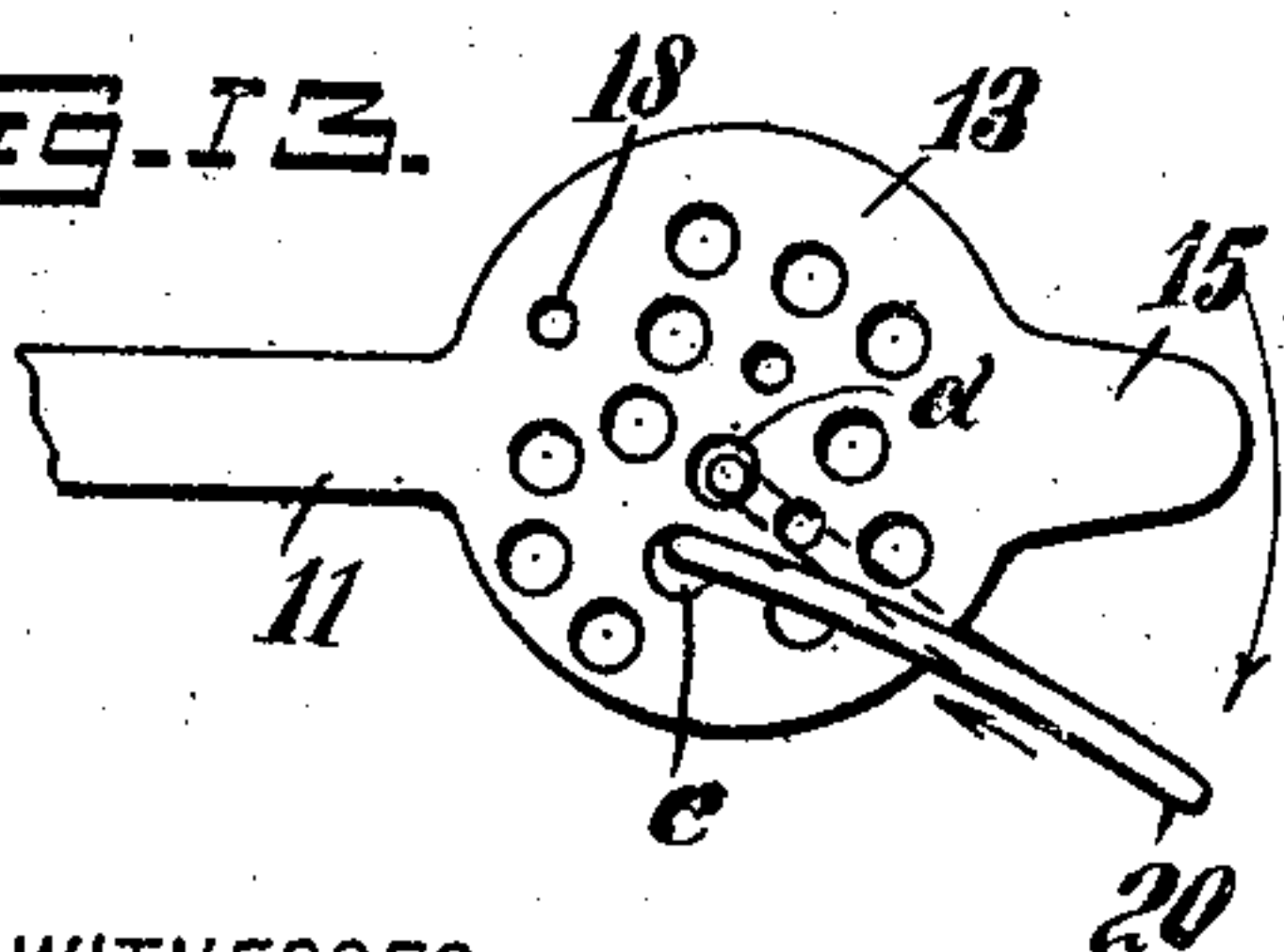


FIG. 15.

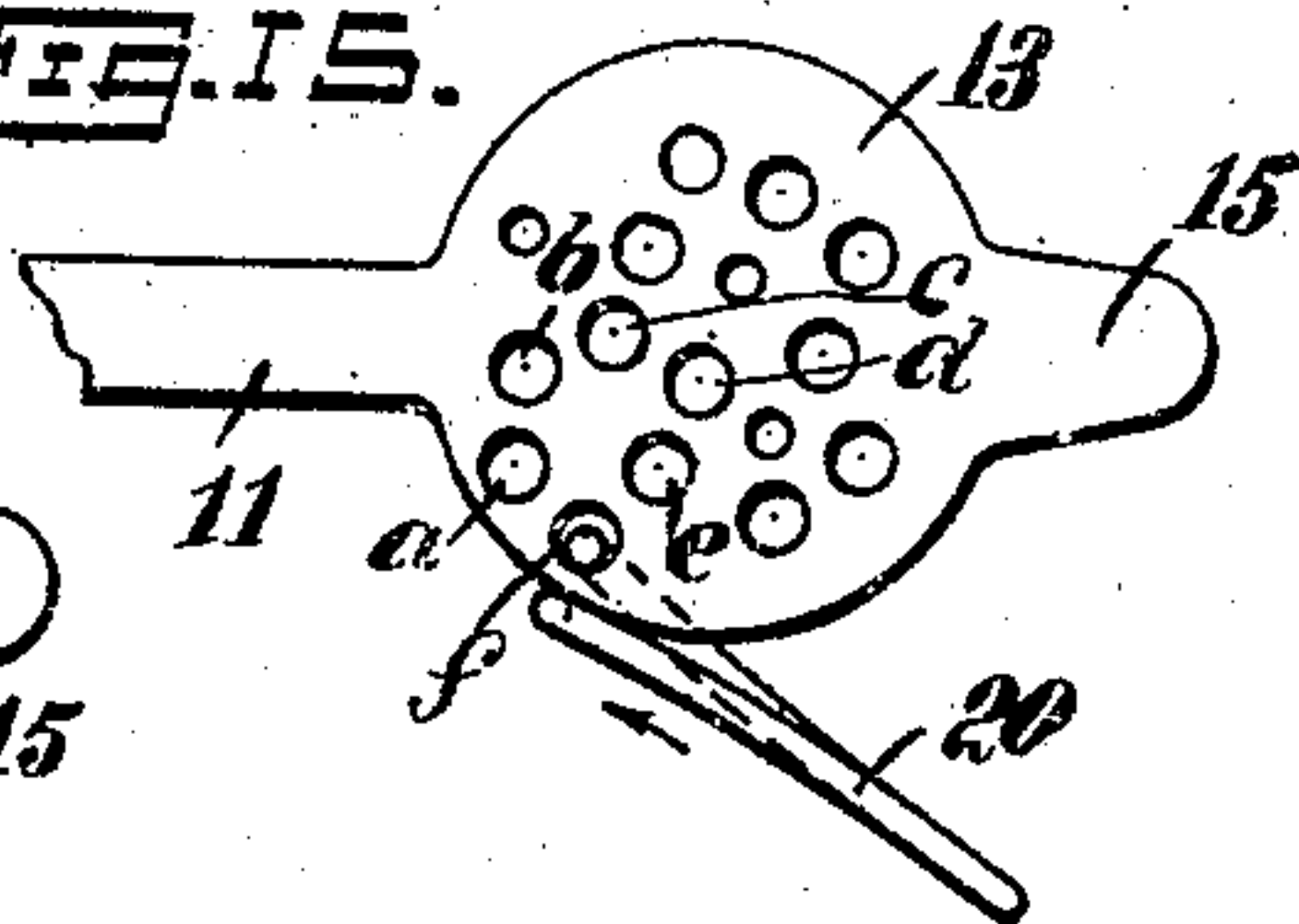
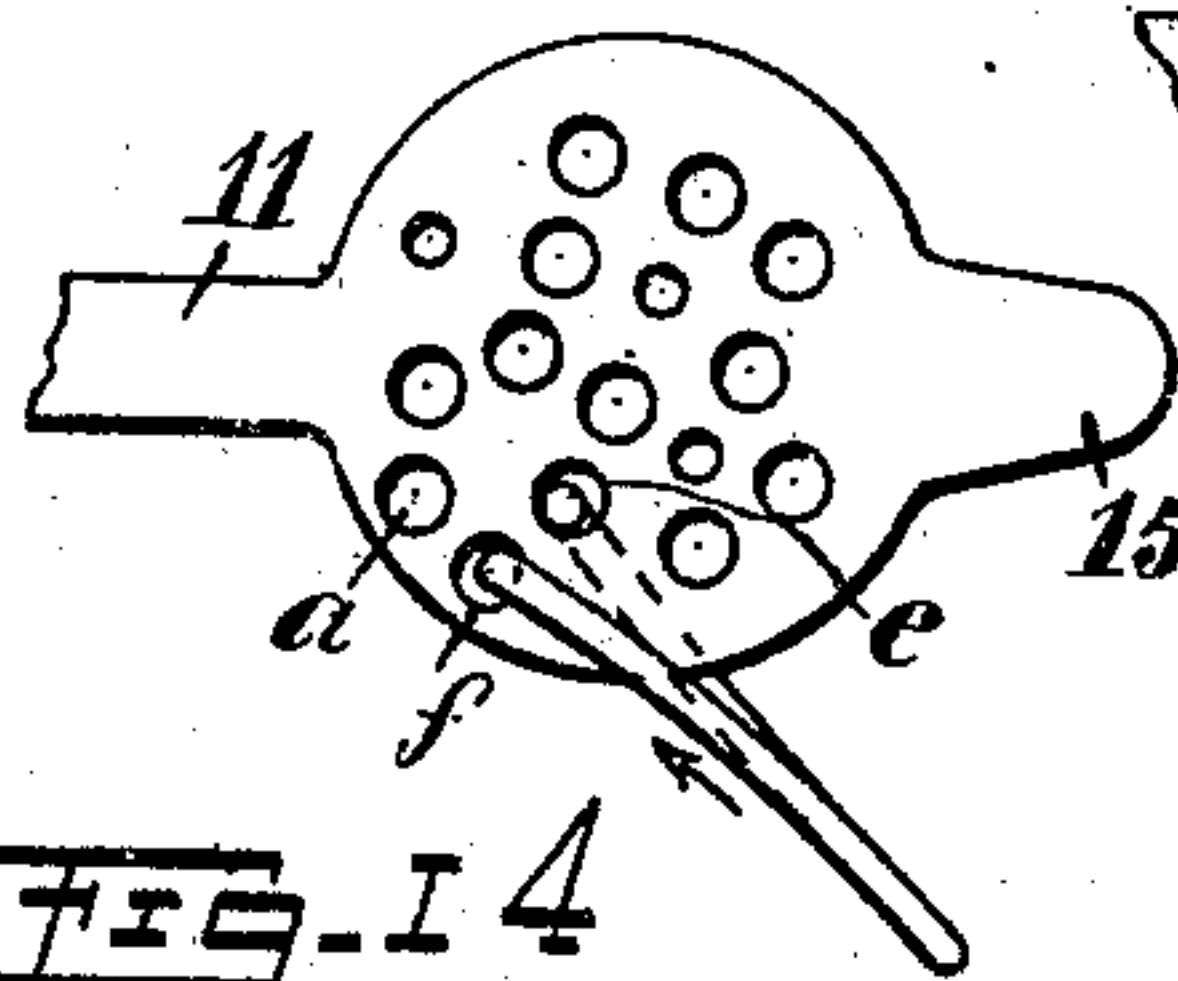


FIG. 14.



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PUZZLE.

956,441.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed July 2, 1909. Serial No. 505,607.

To all whom it may concern:

Be it known that I, DAVID E. SMITH, a citizen of the United States, and a resident of Mount Vernon, in the county of Westchester and State of New York, have invented a new and Improved Puzzle, of which the following is a full, clear, and exact description.

This invention relates to puzzles and the object of the invention is to produce a puzzle having novelty and which will afford amusement and interest in attempting to solve it.

More specifically the invention relates to that type of puzzles which includes a ring which is apparently attached to other pieces so that it cannot be removed, but the construction is such as to enable the ring to be removed by the exercise of ingenuity, and by manipulating the parts.

In its construction the invention comprises a bar or bars having heads at the ends thereof, a removable ring being held on the bar between said heads. This ring is too small to pass over the heads and can only be removed by passing the ring through openings in the heads, or by manipulating the ring in a peculiar manner in order to pass the heads. As illustrated the device presents three bars having heads at their ends, and a guard ring in addition to the removable ring.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective showing the puzzle in its normal position; Fig. 1^a is a transverse section through one of the heads, on the line 1^a—1^a in Fig. 5; Fig. 1^b is a fragmentary perspective view of the head 8; Fig. 2 is a perspective illustrating the first step in the movement by which the removable ring is made to pass the guard ring; Fig. 3 is also a perspective showing the second step of the movement in passing the guard ring; Fig. 4 is a perspective showing the third step of this movement; Fig. 5 is a perspective showing how one of the bars is attached to or disengaged from the re-

movable ring, this view shows the first step of this movement; Fig. 6 is also a perspective showing the last stage of this movement which detaches the first bar; Fig. 7 is a perspective illustrating the manner in which the ring is attached or disengaged from the second bar, this view shows the beginning of this movement; Fig. 8 is also a perspective showing the last stage of this movement; Fig. 9 is a perspective showing the first step of the movement which disengages the removable ring from the third or last bar; in this movement the ring is passed successively through a plurality of openings formed in one of the heads of the third or last bar; Fig. 10 is a plan of a portion of the third bar and showing its head having perforations through which the ring is passed successively; this view shows the first step of this movement; Fig. 11 is a view similar to Fig. 10 and showing the second step of this movement; Fig. 12 is a view similar to Fig. 11 and showing the third step of this movement; Fig. 13 is a view similar to Fig. 12, but showing the fourth step of said movement and indicating the manner in which the ring is swung around the tongue of the bar; Fig. 14 shows the next step of the movement in removing the ring from the head; and Fig. 15 shows the ring in its last movement which will remove it.

Referring more particularly to the parts, and especially to Figs. 1 to 6, inclusive, 1 represents the central bar or first bar having an elongated shank with enlarged circular heads 2 and 3 at the ends thereof. These heads 2 and 3 are provided with perforations 4 which should not be used in the solution of the puzzle, they are simply blind or misleading openings which are used to increase the intricacy of the solution. On the shank of the bar near its point of attachment to the head 3, a perforation or opening 5 is formed which is used in solving the puzzle, and which will be referred to further hereinafter. On the upper side of the bar 1, as illustrated in Fig. 1, a second bar 6 is provided. This bar has an elongated body or shank like the bar 1, and is provided with circular heads 7 and 8 which are similar to the heads 2 and 3 and which normally lie superposed thereupon, as shown. These heads 7 and 8 are provided with perforations 9 which should not be used in solving

the puzzle, but which are simply blind or misleading perforations so as to increase the intricacy. The bar 6 is extended across the face of the head 8 so as to form a tongue 10, and adjacent to the edge of this tongue, the head 8 is of reduced thickness. Below the bar 1 a third bar 11 lies and this bar has an elongated body with substantially circular heads 12 and 13 at the ends thereof. These heads 12 and 13 have outwardly extending tongues 14 and 15 which extend longitudinally of the axis of the bar. The head 12 is provided with a plurality of perforations 16 which are blind perforations which increase the intricacy of the puzzle and which should not be used in removing the ring. The head 13 on the other hand, is provided with a plurality of openings or perforations indicated collectively by the numeral 17, which perforations are of large size. In addition to this the head is provided with some smaller perforations 18 which are blind perforations which are adapted to puzzle the person who is attempting to solve the puzzle.

On the bars 1, 6, and 11, which lie normally superposed upon each other, as indicated in Fig. 1, two rings 19 and 20 are placed. The ring 19 is a guard ring, the ends of the ring being disposed apart so as to form a slight gap 21. The ring 20 is of substantially the same diameter as the ring 19 so that it cannot be made to pass it except by having recourse to the gap 21, and a somewhat similar gap 22 which is formed between the ends of the ring 20. At this gap 22 the ends of the ring 20 are offset laterally with respect to each other, and the gap at this point is of substantially the same width as the diameter of the wire out of which the rings are formed. As the puzzle is illustrated in Fig. 1, the problem is to manipulate the ring 20 so as to pass the guard ring 19, and then to manipulate the ring 20 further so as to enable it to pass the heads 3, 8, and 13. The rules which will explain the puzzle will simply state that the ring 20 should be removed, so that a person working the puzzle may be led to attempt to remove the ring at the heads 2, 7, and 12. The solution of the puzzle in this way would become impossible. It can only be solved by removing the ring from the heads at the opposite ends of the bars.

The solution of the puzzle will now be explained: The first step of the operation is to manipulate the ring 20 so as to pass the guard ring 19. The first step of this movement is illustrated in Fig. 2. The gaps 21 and 22 are brought opposite to each other and the ring 20 is pushed outwardly so that the ends of the ring 19 pass through the gap 22. The body of the ring 20 is then passed through the ring 19 and the ring 20 is then withdrawn from the ring 19 by means of the

gaps 21 and 22 which are brought together as illustrated in Fig. 4. Fig. 3 illustrates the intermediate step when the rings are hooked through each other. After the ring 20 has passed the guard ring one of its ends is inserted in the opening 5, as illustrated in Fig. 5, and the ring is then rotated on its axis in the direction indicated by the arrow. The gap 22 between the ends of the ring permit the end of the ring to be passed into this opening, as will be readily understood.

In Fig. 6 the relation of the ring to the bar is illustrated, and the ring is nearly disengaged from the bar. It will be observed that at this stage the end of the ring which was inserted at the opening will pass down at the side of the bar so that if the rotation of the ring is continuous in the direction of the arrow, as shown in Fig. 6, the ring will become completely disengaged from the bar. The gap of the ring 20 is then brought against the side of the bar 6 near the edge of the tongue 10 and the ring is held in an inclined plane so as to utilize the greatest width of the gap 22. The ring is then slid outwardly along the edge of the tongue and completely around the end of the tongue and is returned on the opposite side, as indicated by the arrow in Fig. 7. The last stage of this movement is indicated in Fig. 8, where the ring is about to become completely disengaged from the bar 6 by sliding off the head 8.

Referring now to Fig. 9, the plurality of perforations 17 are arranged in a particular manner. These perforations are indicated respectively *a*, *b*, *c*, *d*, *e*, and *f*. The perforation *a* is disposed near the edge of the disk or head so as to enable the ring to be passed into it, as indicated in Fig. 9. The perforations are all disposed at a proper distance apart to enable the ring to be passed successively through them, and the ring passes next through the perforation *b*, as indicated in Fig. 10, then through the perforation *c*, and then through the perforation *d*. In every instance the gap 22 is sufficient to enable the ring to approach the space between the openings. The perforation *d* is disposed near enough to the tongue 15 to enable the ring to be swung around the end of the tongue in the manner indicated in Fig. 13. After being swung around the end of the tongue the ring is passed successively through the perforations *e* and *f*, and is then disengaged from the head. In this connection it should be noted that the perforation *f* is disposed near the edge of the head, in this respect being similar to the perforation *a*. In other words, it will be observed that the perforations *a*—*f* are arranged so that they approach and recede progressively from the tongue 15. This arrangement is adopted so as to enable the ring to swing around the end of the tongue 15. The ring can, of

course, be replaced on the bars by reversing the movement described above. The guard ring 19 holds the bars together at all times, but permits considerable freedom of movement of the bars with respect to each other.

The blind openings referred to hereinabove are arranged so that some of them are near the edges of the heads in which they are formed so as to permit the ring 20 to be applied to them. In this way the suggestion is made to the person solving the puzzle to make futile attempts to remove the ring. In addition to this, certain of these blind openings are disposed apart a distance corresponding to the span of the gap 22 so that the ring may be passed successively through these openings. In this way the person attempting to solve the puzzle will be misled into believing that the ring is approaching a point of release from one of the bars through the medium of the blind openings.

The gap 22 is, as suggested, just sufficient to receive the thickness of the head 8 adjacent to the edge of the tongue 10, but it is not great enough to permit the ring to be removed by passing directly across the head 8. In other words, the edge of the head 8 is too thick to receive the gap except at each side of the tongue 10.

Having thus described my invention, I claim as new and desire to secure by Letters Patent,—

1. In a puzzle, in combination, a bar having enlarged heads, and a ring surrounding said bar between said heads and having its ends offset laterally so as to form a gap, said ring being of too small a diameter to pass said heads, one of said heads having a plurality of openings therein disposed apart a distance substantially equal to the span of said gap, said openings being arranged progressively and extending inwardly from the edge of said head, one of said openings being disposed at a point which will enable said ring to be rotated around the outer edge of said head.

2. A puzzle having a bar with enlarged heads, one of said heads having a plurality of openings therein arranged progressively from the edge thereof extending inwardly, said head having a tongue on the edge thereof, and a ring mounted on said bar between said heads, the ends of said ring being offset so as to form a gap therebetween, the span of said gap being substantially equal to the distance between said openings whereby said ring may be passed successively through the openings and swung around said tongue.

3. A puzzle having a bar with enlarged heads, the body of said bar having a tongue extending across a portion of one of said heads, said head being of reduced thickness at the edge of said tongue, and a ring mounted on said bar between said heads having a gap formed between the ends thereof, said

gap being of just sufficient span to receive the thickness of said head at the edge of said tongue.

4. A puzzle having a bar with enlarged heads, the body of said bar having a tongue extending across a portion of one of said heads, said head being of reduced thickness at the edge of said tongue, and a ring mounted on said bar between said heads having a gap formed between the ends thereof, said gap being of just sufficient span to receive the thickness of said head at the edge of said tongue, said heads having blind openings therein which may receive the said ring.

5. A puzzle having a bar with enlarged heads, one of said heads having a plurality of openings therein arranged progressively from the edge thereof extending inwardly, said head having a tongue on the edge thereof, and a ring mounted on said bar between said heads, the ends of said ring being offset so as to form a gap therebetween, the span of said gap being substantially equal to the distance between said openings whereby said ring may be passed successively through the openings and swung around said tongue, said heads further having a plurality of blind openings therein adapted to receive said ring.

6. A puzzle having a bar with enlarged heads at the ends thereof, and a ring disposed about said bar of too small diameter to pass said heads, the body of said bar having an opening therethrough near the edge thereof, said ring having its ends offset laterally so as to form a gap adapted to bridge the space between the edge of said opening and the edge of said bar whereby the end of said ring may be passed through said opening and said ring may be removed from said bar.

7. A puzzle, comprising a pair of bars having enlarged heads, and a ring disposed about said bars between said heads, said ring being of too small a diameter to pass directly over said heads and having its ends disposed apart, so as to form a gap therebetween, a pair of said heads having walls approximating in thickness the magnitude of said gap adapting the removal of said ring by applying the same thereto at said gap.

8. A puzzle, comprising a pair of bars having enlarged heads, a ring disposed about said bars between said heads, said ring being of too small a diameter to pass directly over said heads, and having its ends disposed apart so as to form a gap therebetween, a pair of said heads having walls approximating in thickness the magnitude of said gap forming a path for the removal of said ring by applying the same thereto at said gap, and a guard ring normally disposed between said first ring and said last-named head, said gap affording means for

advancing said first-mentioned ring past said guard ring.

9. A puzzle, comprising a plurality of bars laid longitudinally and having enlarged heads, and a ring surrounding said bars between said heads, said ring being of too small a diameter to pass directly over said heads and having a gap formed between the ends thereof, said heads having walls approximating in thickness the magnitude of said gap permitting the removal of said ring by applying the same thereto at said gap.

10. A puzzle comprising a plurality of bars laid longitudinally together and having enlarged heads at the ends thereof, and a ring surrounding said bars between said heads, the diameter of said ring being too small to permit the same to pass directly over said heads, the said ring having its ends offset laterally to form a gap, one of said bars having an opening in the body thereof adjacent to the edge of said body and adapted to receive the ends of said ring to permit the removal thereof, one of said bars having a tongue extending across one of the heads thereof, the thickness of said tongue adjacent said head being reduced and adapted to be spanned by the gap of said ring to permit the removal of the ring from said last-named bar, another of said bars having a plurality of openings in one of the heads thereof arranged progressively and extending inwardly from an edge thereof and permitting said ring to pass successively therethrough, the innermost of said last openings being disposed at a point to permit the ring to swing around the end of said last head, the said openings therebeyond being arranged to approach the end whereby said ring may be removed.

11. A puzzle comprising a plurality of bars laid longitudinally together and having enlarged heads at the ends thereof, a ring surrounding said bars between said heads, the diameter of said ring being too small to

permit the same to pass directly over said heads, the said ring having its ends offset laterally to form a gap, one of said bars having an opening in the body thereof adjacent to the edge of said body and adapted to receive the ends of said ring to permit the removal thereof, one of said bars having a tongue extending across one of the heads thereof, the thickness of said tongue adjacent said head being reduced and adapted to be spanned by the gap of said ring to permit the removal of the ring from said last-named bar, another of said bars having a plurality of openings in one of the heads thereof arranged progressively and extending inwardly from an edge thereof and permitting said ring to pass successively therethrough, the innermost of said last openings being disposed at a point to permit the ring to swing around the end of said last head, the said openings therebeyond being arranged to approach the end whereby said ring may be removed, and a guard ring surrounding said bars holding the same together and permitting a freedom of movement thereof.

12. A puzzle, comprising a plurality of bars juxtaposed to each other and having a plurality of enlarged portions thereon, and a ring adapted to surround said bars, said ring being of too small a diameter to pass directly over some of said enlarged portions and having a gap formed between the ends thereof, said bars having walls approximating in thickness the magnitude of said gap forming a predetermined line of travel permitting the removal of said ring by applying the same thereto at said gap.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DAVID E. SMITH.

Witnesses:

ALFRED DENNIS,
M. J. GROSSMANN.