

(No Model.)

J. F. DEEVES & R. U. J. GAUTHREAUX.
MECHANICAL PUZZLE.

No. 435,804.

Patented Sept. 2, 1890.

Fig. 1.

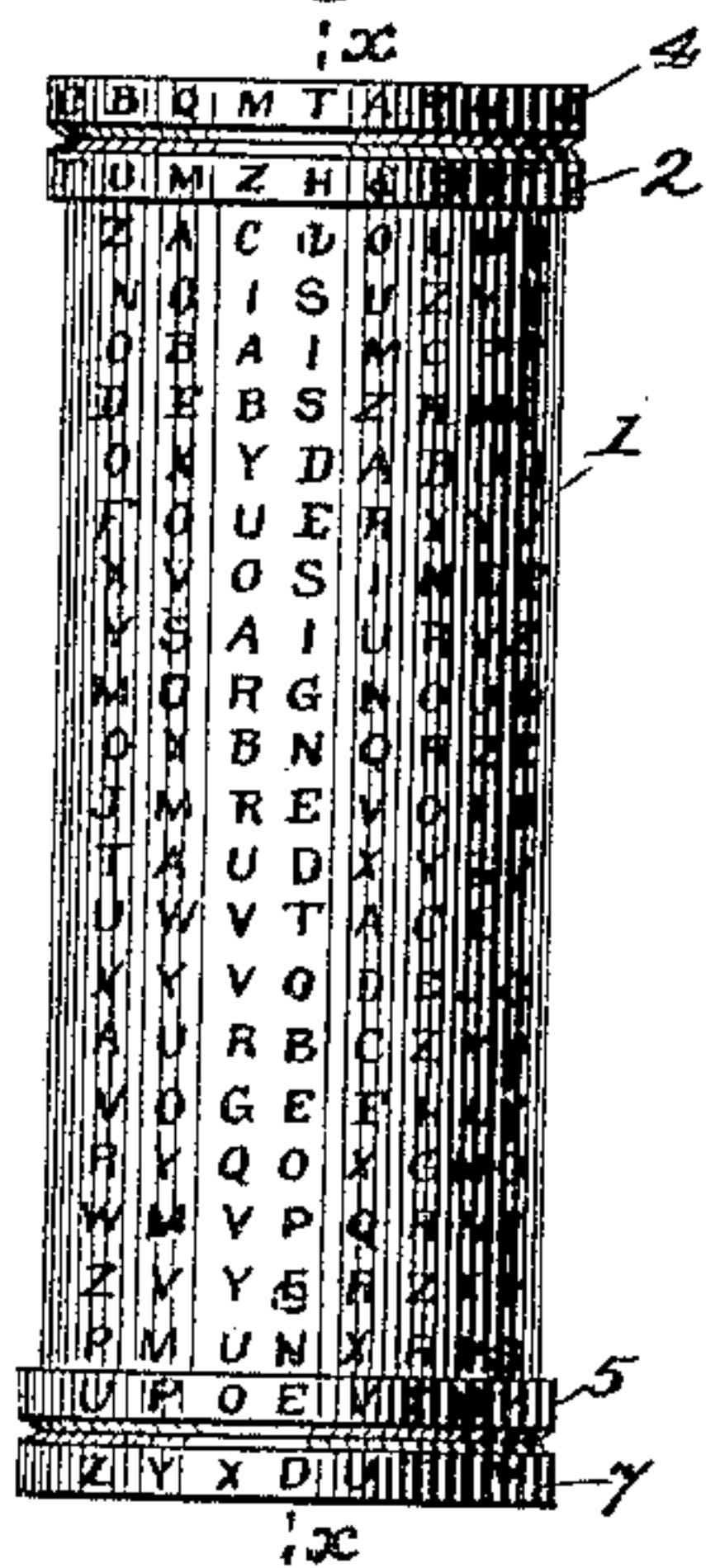


Fig. 3.

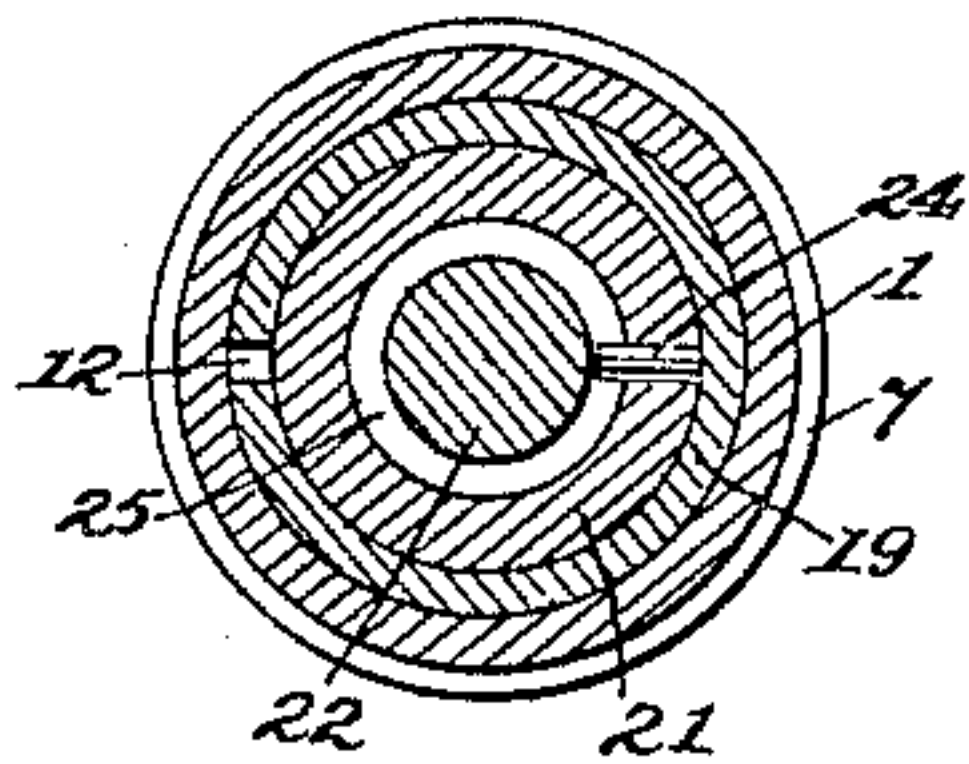


Fig. 2.

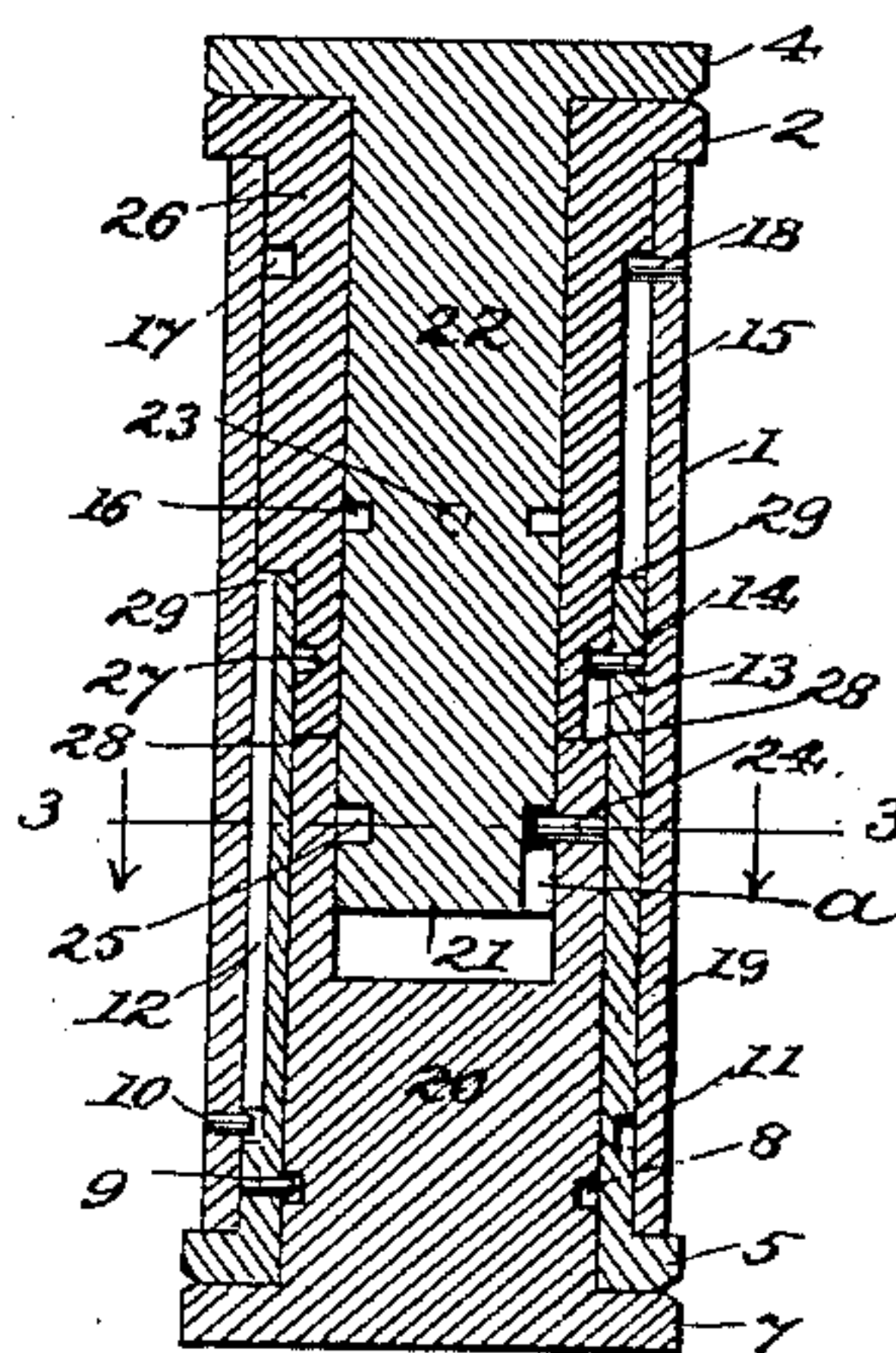


Fig. 4.

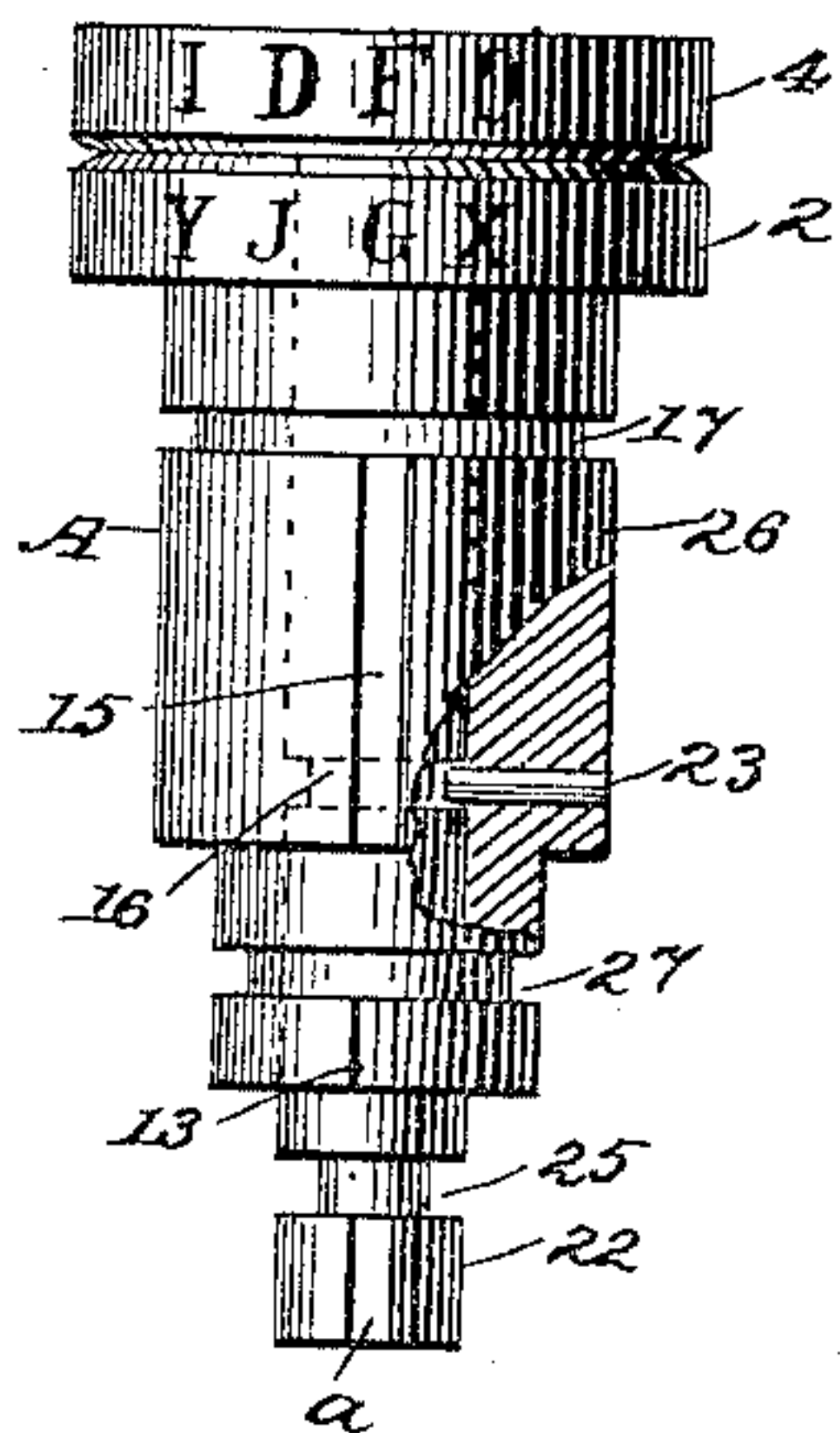


Fig. 5.

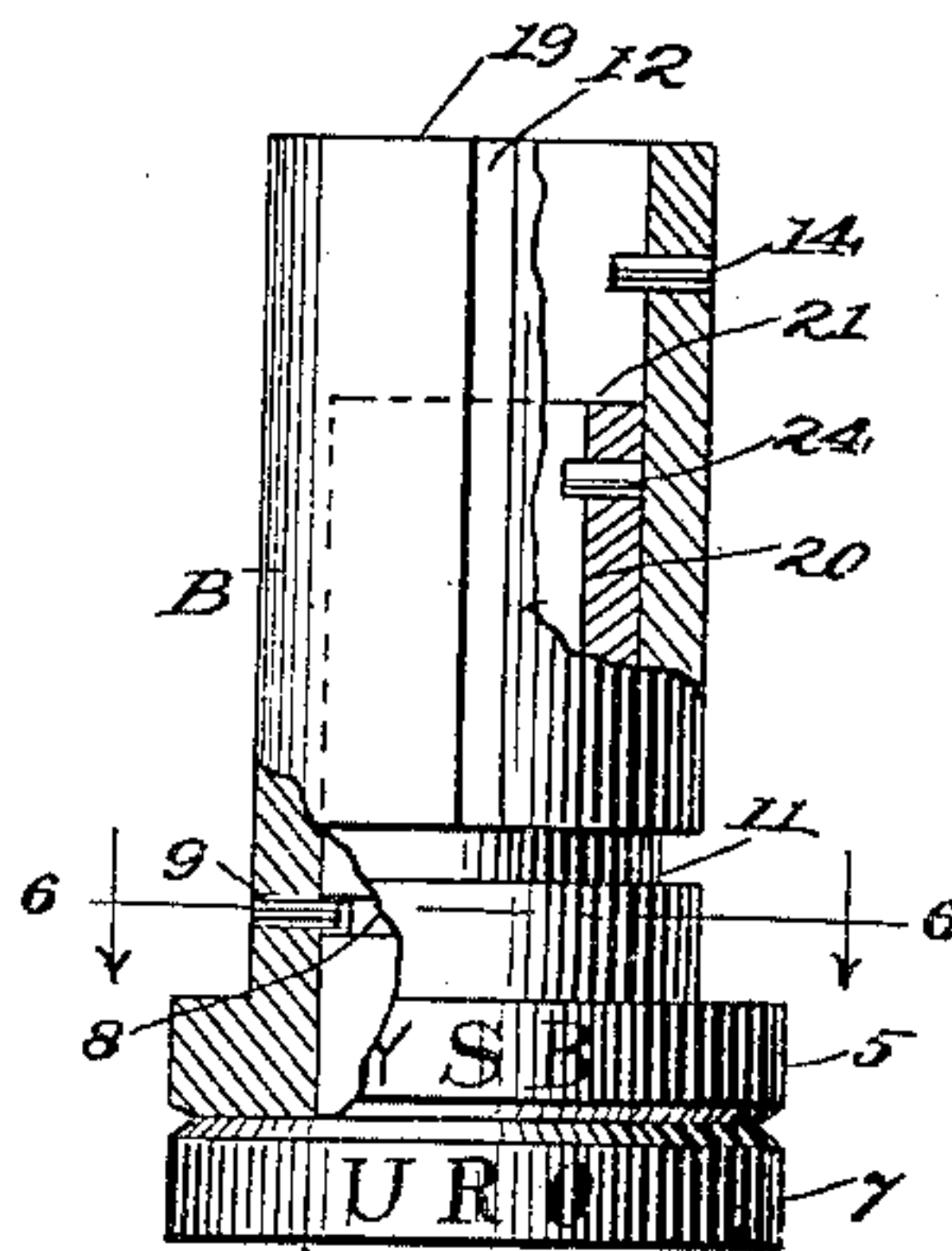
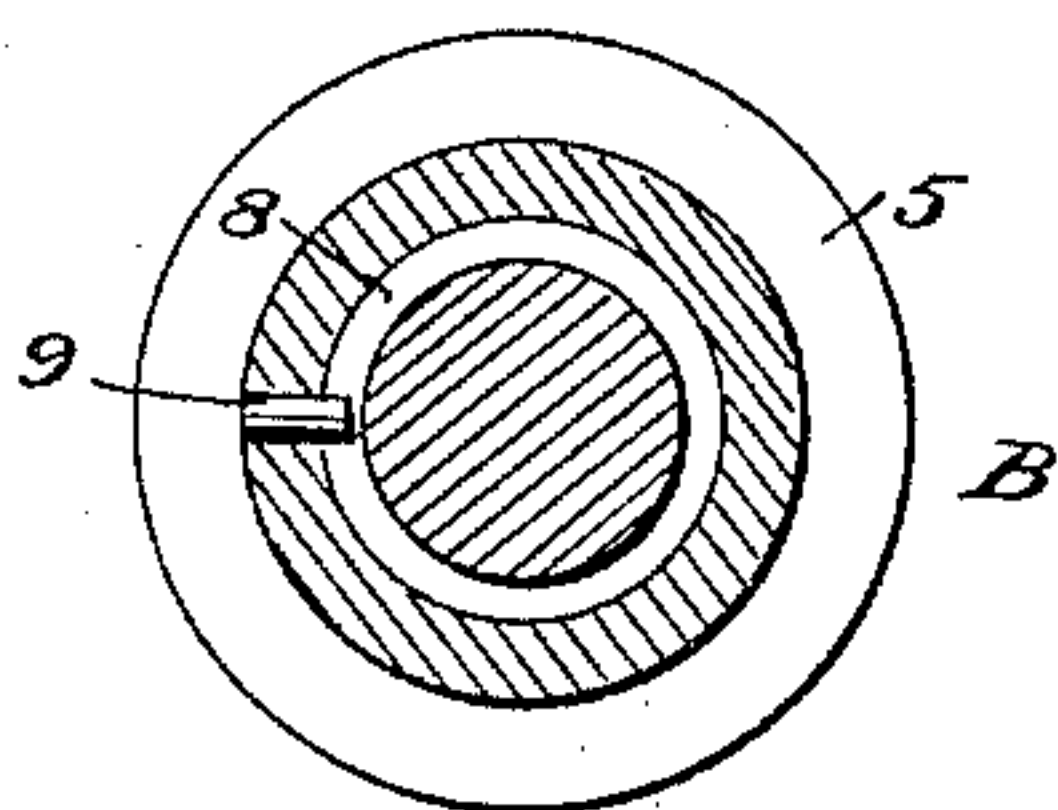


Fig. 6.



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MECHANICAL PUZZLE.

SPECIFICATION forming part of Letters Patent No. 435,804, dated September 2, 1890.

Application filed November 23, 1889. Serial No. 331,366. (No model.)

To all whom it may concern:

Be it known that we, JOHN F. DEEVES and RICHARD U. JOSEPH GAUTHREAUX, residents of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Mechanical Puzzles, of which the following is a full, clear, and exact description.

The objects of our invention are to produce a compact, neat, and attractive mechanical puzzle of a rather intricate character, having parts connected with a case and aligning collars at the ends of the case, all marked with letters of the alphabet promiscuously placed in radial and longitudinal rows, which are mainly for the purpose of concealing the word or sentence which is the key to open the connected parts of the puzzle. Said word or sentence may be the name of a party issuing the puzzle for an advertisement, or it may combine name and address and indicate nature of business.

A further object is to provide a mechanical advertising puzzle of permutation type which will by its shape indicate the nature of the business advertised.

To these ends our invention consists in certain features of construction and combinations of parts, which will be hereinafter described, and pointed out in the claims.

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

Figure 1 is a side elevation of the device. Fig. 2 is a vertical section taken on the line *x x* in Fig. 1. Fig. 3 is a transverse section taken on the line *3 3* viewed in direction of arrows. (See Fig. 2.) Fig. 4 is an enlarged perspective view of one section of the puzzle detached. Fig. 5 is a partly-sectional view of another principal portion of the puzzle detached; and Fig. 6 is a transverse section of the portion shown in Fig. 5, taken on the line *6 6* in said figure, viewed as indicated by arrows.

The puzzle is of the permutation type—that is to say, it is composed, essentially, of parts

that are concentrically arranged and adapted to interlock with each other by pins inserted in circumferential grooves, which hold the sections of the puzzle from being separated longitudinally until all movable parts are so aligned as to bring the locking-pins coincident with longitudinal grooves which intersect the peripheral grooves mentioned, and thus permit the two sections of the puzzle to be pulled apart.

In order to indicate the correct relative location of the longitudinal grooves and pins, and consequently the opened adjustment of the connected parts, a word, sentence, or phrase is stamped on the movable parts of the puzzle, which sentence is longitudinally aligned so as to be read when the puzzle is unlocked, said key word or sentence being concealed by mixing the component letters with the letters of other words or promiscuously arranged letters that are located in peripheral and longitudinal rows on the outer surface of the device.

The specific construction of the puzzle is as follows: In the sectional view shown in Fig. 2, 22 represents an elongated cylindrical core or plug which has a radial collar 4 integrally formed on one end. The body of the plug is peripherally grooved at 16, and also at 25, nearer the unflanged end 21. An enveloping-sleeve 26 is made to fit neatly on the plug 22. Said sleeve is provided with a collar 2, which is formed on its end that is adjacent to collar 4 and bears loosely against the same when the parts are assembled. The sleeve 26 is peripherally grooved at 17 near the collar 2 and at 27 near its unflanged end. A longitudinal groove 15 extends from the circular groove 17 to the end 28 of the sleeve, which latter is reduced at 29 to form a smaller sleeve, a square shoulder being thus produced at the point indicated.

20 is another cylindrical plug that is axially perforated a proper distance to fit upon the end 21 of the plug 22. This when the parts are connected will form a continuous cylinder of the same diameter from the point 28, where the sleeve 26 and plug 20 abut, to the other terminal of the plug 20 inside of the

collar 7 that is formed thereon at this end, said collar being of the same exterior diameter as collars 2 4 on sleeve 26 and plug 22.

The sleeve 26 and plug 22 are revolvably connected by a locking-pin 23, which is fixed in the body of the sleeve and projects into the groove 16. (See Figs. 2 and 4.)

A circumferential groove 8 is cut in the plug 20 near its collar 7, which plug, to distinguish it from the other one, is designated a "capping-plug." On the capping-plug just named a thin shell 19 is mounted, having a revoluble fit thereon, which shell extends from its integral collar 5 to the terminal end, which abuts against the shoulder 29 on the sleeve 26 when properly adjusted in place. A locking-pin 9 is affixed in the shell 19 at a proper point to register with the groove 8 in the capping-plug 20 and loosely secures these parts together. (See Figs. 2 and 5.) Near the other end of the shell 19 a locking-pin 14 is fixed, projecting inwardly from the shell and engaging loosely the circumferential groove 27, produced in the reduced portion of the sleeve 26, as before mentioned, said pin being adapted to slide in the groove 13 cut in the sleeve from where it intersects the groove 27 to the end 28 of the sleeve. The free cylindrical end 21 of the plug 22 is grooved lengthwise of its body, as at *a* in Fig. 4, said groove extending from the circumferential groove 25 to the terminal end named. A longitudinal groove 12 is cut in the shell 19 from the circumferential groove 11 therein formed to the terminal end of the shell, as at 29 in Fig. 2, and a pin 10, inserted in an enveloping-case, slides therein. An outer casing 1 is provided, which is of such internal diameter as to fit neatly upon the larger portion of the sleeve 26 and also on the shell 19, said parts last named being of equal size in their outer diameters. The thickness of the wall of the casing 1 is preferably such relatively that its outer diametrical size will correspond with that of the collars 2, 4, 5, and 7, so that all will together form a neat cylinder devoid of lateral projections. The length of the casing 1 is equal to the distance between the inner faces of the collars 2 and 5 when the parts are together in locked adjustment, the casing being allowed freedom to rotate easily on the supporting parts it incloses. A locking-pin 18 registers with the circumferential groove 17, said pin being fixed in the casing 1, and, projecting therefrom into this groove, it can be made to enter the longitudinal groove 15.

As shown in Fig. 2, the longitudinal grooves 15, 12, 13, and *a* are located three on one side of the device and one groove 12 on the other side or diametrically opposite the other aligning grooves. This is so represented to facilitate the illustration of the grooves in the same view. It is not necessary, however, to so locate the longitudinal grooves, as these may be placed out of alignment at any point

peripherally on the sleeve 26, shell 19, and lower end of plug 22 if the locking-pins which project from the capping-plug shell and casing are so located that these will enter the longitudinal grooves all at the same time and so be released from a securing interlock with the circumferential grooves, as previously explained.

As the pins 10 and 18, which are inserted in the casing 1, and that engage the longitudinal grooves 15 12 when the device is in opened adjustment, are invisible from the outer side of the casing, it is necessary that a key be provided to indicate when the parts are correctly located to permit a separation of the sections A B. To this end a sentence or name is preferably used, which will when its component letters are in alignment indicate that the device is adjusted to separate its sections. The "key" may be the name of a firm, a place of business address, or both may be combined. To obscure the key measurably, a series of aligning rows of letters are promiscuously arranged at spaced intervals around the casing and the collars also, it being understood that the letters composing the key are placed partly on the collars and the intermediate portion of the same on the cylindrical casing in a vertical row. It is preferred to arrange the letters in rows around the casing, as shown in Fig. 1, and, as therein represented, the center line, which corresponds with the section-line *x x*, indicates the key-words, which in this instance read thus from top to bottom: "This is designed to be opened."

The intricacy of the puzzle may be increased by having two words or sentences as keys and the locking-pins adjustable to suit these different keys, which will be arranged at different points on the circumference of the device.

There being many combinations to be made other than the word or words which open the puzzle, it is a pleasing source of amusement, and if the key is the name or business address of a party it will be forcibly impressed on the memory of the person who is successful in deciphering the key and opening the puzzle. It is also intended to give the entire device a form which will be suggestive of the business advertised—as, for instance, it may be shaped as a beer-keg or a cigar, and thus by its contour advertise the business of the distributor of the device. A business-card in plain letters may take up a portion of the puzzle—as, for instance, this may be placed on the ends of the same and not interfere with the letters on the peripheral surface.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A puzzle comprising two plugs placed end to end, one provided with a sleeve and the other with a shell, the sleeve and shell being connected with their respective plugs

and with each other by a pin-and-groove connection, and an outer casing connected to the said shell and sleeve by a pin-and-groove connection, substantially as described.

- 5 2. A puzzle comprising two collared plugs, one socketed to receive the end of the other and connected together by a pin-and-groove connection, a sleeve mounted on one plug to turn, a shell mounted on the other plug to
10 turn and connected with the sleeve by a pin-

and-groove connection, and a casing on the shell and sleeve and connected to each by a pin-and-groove connection, substantially as herein shown and described.

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