

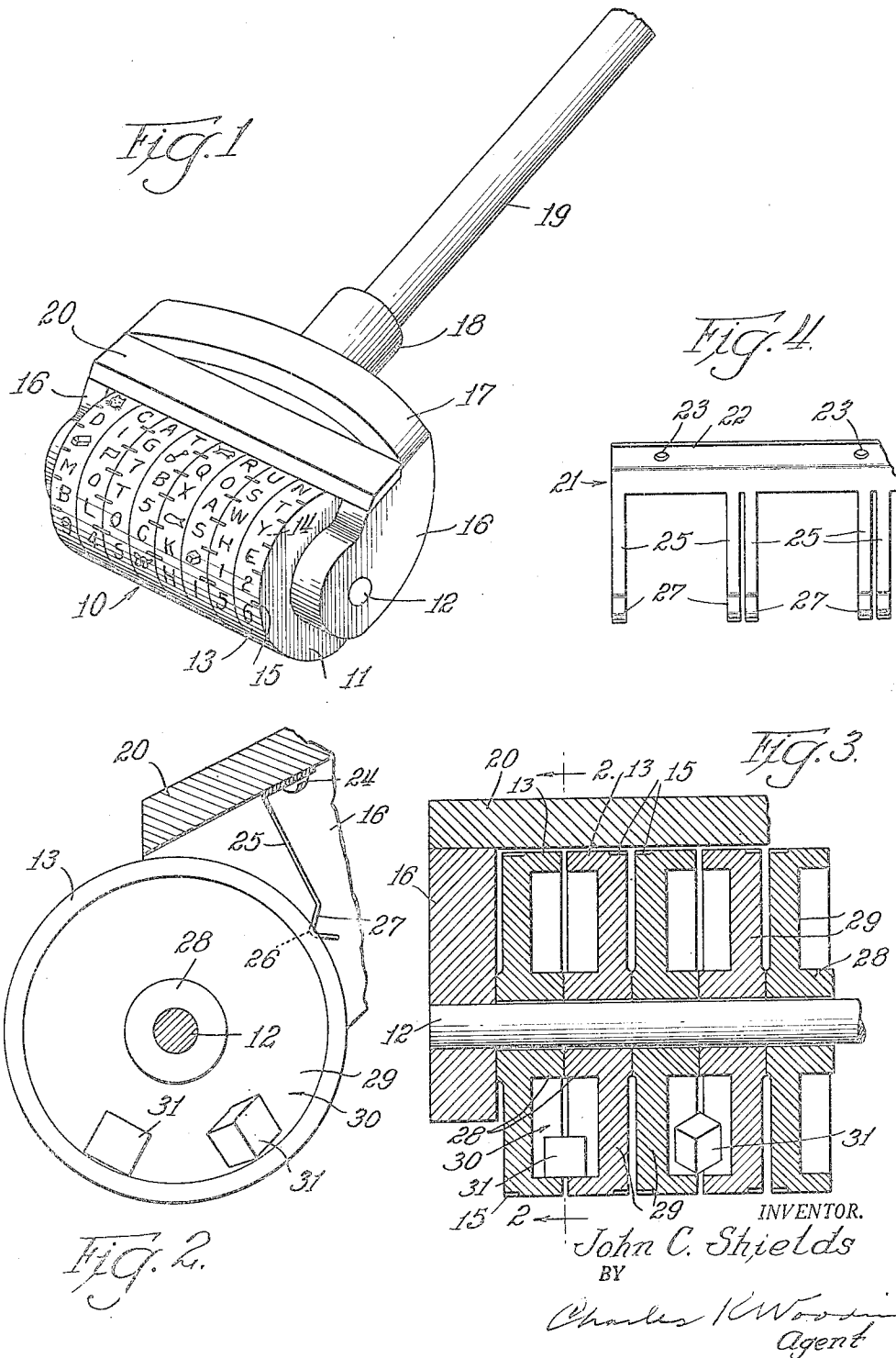
Feb. 7, 1950

J. C. SHIELDS
EDUCATIONAL TOY

2,496,498

Filed Aug. 9, 1947

2 Sheets-Sheet 1



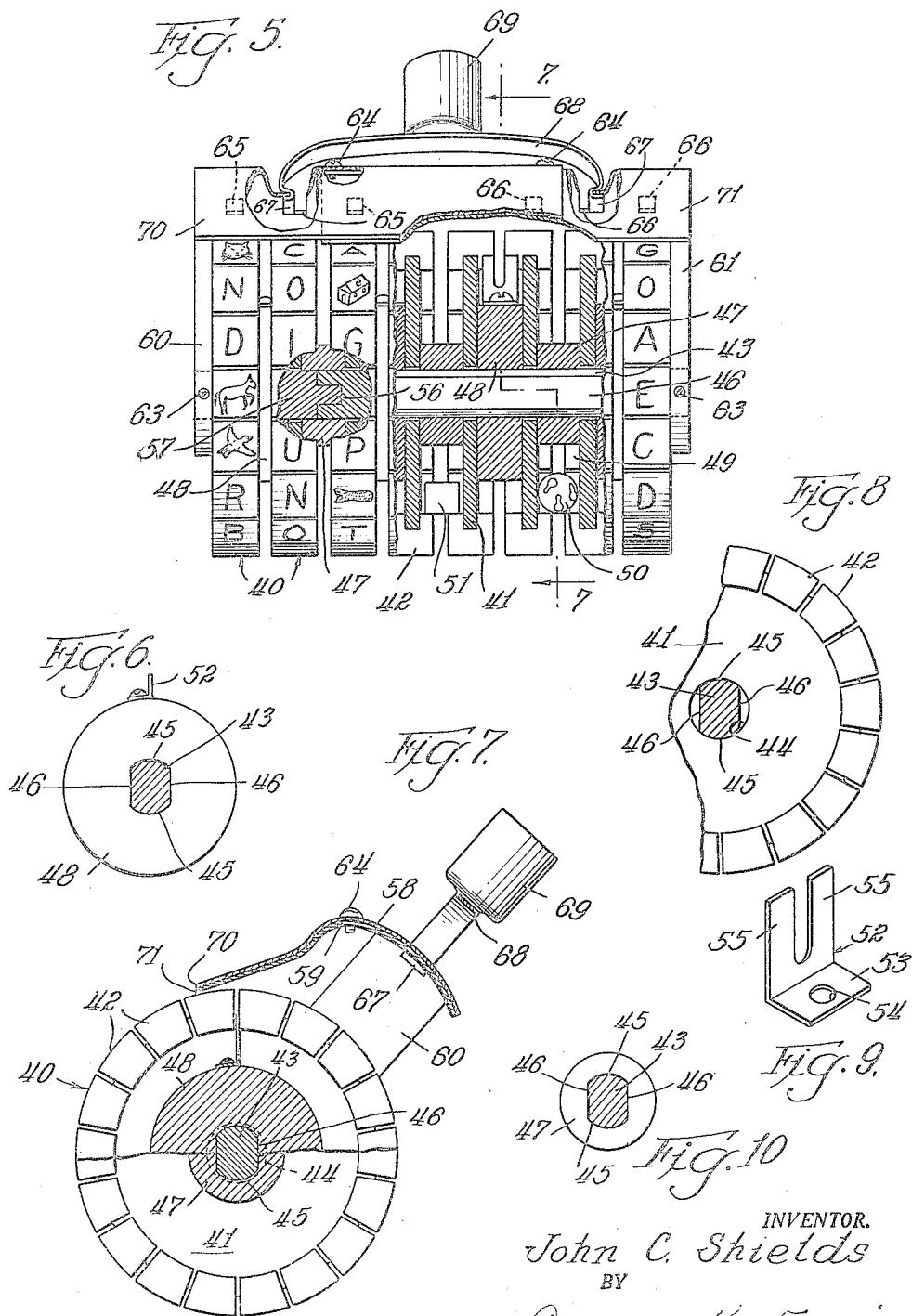
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UNITED STATES PATENT OFFICE

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EDUCATIONAL TOY

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This invention relates to educational toys of the type in which is incorporated a plurality of aligned rotatable elements on the annular periphery of which pictures, numerals, letters of the alphabet, or the like are imprinted, the discs being rotatable independently of each other to cause the pictures, letters, etc. to assume positions of alignment, thereby forming words which, in the case of the shorter words, may be aligned with pictures of the animal, article or the like illustrative of the meaning of the word.

All educational toys of the general class indicated above, of which I am aware, are deficient in that they are lacking in providing sufficient amusement for the child, or are of such limited word-forming capacity that the child soon tires of or "outgrows" them and the toys largely fail of their purpose.

In view of the above-noted deficiencies of the prior art, it is one object of the instant invention to provide a toy of the above-indicated class which interjects into its use the elements of play and chance making for an article capable of maintaining the child's interest for a long period of time and tending to make the child's learning seem like play.

Another highly important object is the provision of a toy, the word-forming portion of which is expansible, that is, which can be originally bought in, assembled into and used in a size, say, capable of forming words of only three or four letters and so used until the child has mastered the simple words, then expanded to a size capable of forming the more complex words which the child is later able to assimilate and comprehend.

More specifically, an important object of the invention is to provide a handle-pushed toy, the floor or ground-contacting portion of which comprises a series of aligned, independently rotatable wheels or discs each having letters on its periphery, the letters being alignable to form words, the discs having associated with them means for creating child-entertaining noise as the toy is pushed.

How the above-mentioned and still other objects and advantages of the invention are achieved is set forth in the detailed description which follows and shown on the somewhat diagrammatic drawings in which:

Fig. 1 is a perspective view of one form of the invention;

Fig. 2 is a cross-sectional view taken substantially along line 2-2 of Fig. 3;

Fig. 3 is a fragmentary longitudinal cross sec-

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tion of some of the discs or wheels forming the floor-contacting portion of the showing of Fig. 1;

Fig. 4 is a fragmentary side elevation of the noise-making and disc-registering spring shown in end elevation as a part of Fig. 2 as such spring appears when removed from the device of Fig. 1;

Fig. 5 is an end elevation of a modified form of the invention;

Fig. 6 is a side elevation of one type of wheel-separating spacers used in the toy shown as it appears when removed therefrom;

Fig. 7 is a cross-sectional view taken substantially on the line 7-7 of Fig. 5;

Fig. 8 is a fragmentary side elevation of one of the letter-bearing discs or wheels shown as it appears when removed from the toy;

Fig. 9 is a perspective view of the letter-aligning and noise-making spring which is associated with the spacer of Fig. 6; and

Fig. 10 is a side elevation of the other type of wheel spacer which is used to space the discs or wheels on their common axle as it appears when removed from the toy.

Referring now to the drawings, reference numeral 10 indicates generally the floor or ground contacting portion of the toy and which comprises a plurality of aligned wheels or discs 11. As best seen in Fig. 2, each disc 11 is centrally bored to receive and relatively freely rotate on a transverse axle 12. Each disc 11 has a flat annular peripheral portion 13 on which is imprinted or embossed a ring of alphabetical letters, numerals or pictures of articles which are typically indicated by reference numeral 14.

Between each letter, picture or the like on its periphery, each disc 11 is provided with re-entrant notches or indentations 15 which register with the hereinafter described spring ratchet or detent means.

As shown, each end of axle 12 is borne in downwardly and forwardly extending arms 16, 16 of a yoke 17 medially of which is a handle receiving portion 18 into which extends the end of a handle 19.

Extending transversely of yoke 17 and conventionally attached at its ends to arms 16, 16 is a transverse piece 20 forming a reading edge. Attached to the under-surface of reading edge 20 is a spring ratchet or detent means 21 comprising a transversely extending body 22 longitudinally bent to L-shape and provided with openings 23 to receive attaching screws 24. Dependent from body 22 by reason of the longitudinal L-shaped bend therein and in register with indentations 15, are detent spring arms 25, the ends of which are

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bent to V-shape as at 27 so that the apex 26 of the V of each will alternately engage indentations 15 and the periphery of the disc 13 between such indentations during rotation of the disc. The tension of spring arms 25 must be such as not to interfere with relatively free rotation of discs 11 yet be of sufficient tension to hold the discs in registry for proper word formation and preferably to make some noise during rotation of the discs.

In the event that additional or different noise making means than that provided by the spring arms 25 is desired, the discs or wheels 11 may be made and positioned with respect to one another in the manner shown in Figs. 2 and 3. In this form of the invention each disc 13 is provided with a central, inwardly directed hub 28 medially bored to receive axle 12. Circumferentially surrounding each hub 28 is an annular planar area 29, the latter being rimmed about by peripheral portion 13 which in this instance is inwardly directed like hub 28 and is so fashioned that its similarity to the hub forms between them an annular recess. Thus when a pair of discs of the immediately hereinabove described type are positioned in face-to-face relation there is formed between the two discs an annular enclosure or chamber 30 into which one or more noise-making elements such as blocks 31 may be placed to freely tumble during rotation of the discs.

Referring now to Figs. 5 and 6, the modified form shown therein preferably comprises a plurality of aligned rotatable wheels 40, each wheel being formed by a disc 41 having arcuately peripherally-surfaced tire-forming blocks 42 mounted about its periphery and forming a rim which extends laterally outwardly at both sides beyond the planar lateral surfaces of said disc. Each disc 41 is provided with a central annular bore 44 to receive and rotate upon axle 43, which, in this case and unlike the wholly cylindrical axle 12 shown in Figs. 1 through 3, is provided with two opposed arcuate surfaces 45, 45 and two opposed parallel planar surfaces 46, 46, the function of which will appear hereinafter.

Positioned between each adjacent pair of wheels 40 are fixed spacers 47 or 48 which, as hereinafter set forth, are in some respects different from one another and have different functions, but each is medially cut out as shown in Figs. 6 and 10 to conform to the shape of axle 43 to be borne thereon in non-rotatable relation thereto. That is to say that the medial transverse axle-receiving hole in each spacer 47 or 48 is arcuately shaped along two of its opposite sides and parallelly cut out between the aforementioned arcuate portions in a slightly larger cross dimension in each direction than the corresponding dimensions of axle 43 and so conforms to the shape of the axle as to freely receive it and be borne by it in a fashion whereby the spacer cannot rotate on the axle as discs 41 of wheels 40 are adapted to do.

As shown in Figs. 6 and 10, each spacer 47 or 48 is of annular disc-like form. Spacer 47 however, is of considerably smaller diameter than is spacer 48. Thus between any pair of wheels 40, axially spaced apart by a spacer 47, there is formed between the outer periphery of spacer 47 and the inner surfaces of the wheel tires (blocks 42), an annular chamber or enclosure 49 into which a sound maker such as spherical bell 50 or rectangular block 51 may be placed.

Each spacer 48 has mounted on its periphery a spring member 52 which is of generally L-shape,

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its base 53 being firmly attached to the annular periphery of the spacer by a screw in hole 54. Extending upwardly from base 53 is a bifurcated portion comprising identical spring elements 55, 55 of a length sufficient to contact the inner surfaces of rim-forming blocks 42 of adjacent wheels 40 in the manner shown in Fig. 7, acting as an additional noise-making apparatus and permitting temporarily fixed registry of letters or the like on adjacent wheels for word-forming purposes.

The form of invention particularly shown in Figs. 5 and 6 is expansible, that is, additional wheels 40 and separators 47, 48 may be added to it, as desired, to increase its word-forming capacity. To accomplish this highly desirable object, axle 43 is provided with an end recess to receive a correspondingly shaped protrusion 56 of an axle extension 57.

The axle-bearing parallel side arms and integral yoke portions are shiftable to a position whereby to accommodate the additional width of the word-forming portion caused by the use of axle extension 57 and the placement thereon of additional wheels and spacers. As best shown in Fig. 5, this is accomplished by providing a yoke comprising two similarly shaped sheet metal pieces 58, 59, each of which has integrally attached thereto a downwardly extending axle bearing arm 60, 61, respectively. The ends of the axle 43, in unexpanded form of the device, or, in the expanded form thereof, then one end of axle 43 and the outer end of axle extension 57 are fixedly held against rotation in arms 60, 61 by means of set screws 63, 63 which are mounted in the arms and screwable down into holding relation with the axle ends.

As hereinbefore mentioned, yoke-forming portions 58, 59 are longitudinally slidable with respect to one another in telescoping coplanar and partially surface-abutting relation and are held in pre-determined properly fixed relation to one another by appropriate machine bolts 64, 64 which are extensible through matching internally threaded openings in each portion. Spaced longitudinally aligned openings 65, 65 are provided in yoke-forming portion 58 and corresponding openings 66, 66 are provided in yoke-forming portion 59 to receive the outwardly oppositely directed ends 67, 67 of a downwardly directed U-shaped yoke 68 medially attached to and extending rearwardly from which is a handle-receiving socket 69.

It is also pointed out that downwardly directed lips 70, 71 are integrally formed on yoke-forming portions 58, 59, respectively, the free edges of which terminate in registry with the upper edges of aligned blocks 42 of adjacent wheels 41, forming a reading edge.

It will be apparent from the foregoing description, that I have provided, by the structures shown, a toy providing extremely novel play as well as educational features. Push toys, as is thoroughly recognized, have a great appeal to children in the lower age brackets. As the child pushes this toy along the floor or ground a wide variety of interest stimulating sounds and noises may be produced. The rotation of the wheel or disc elements having lettered peripheries brings up in alignment along the reading edge random assortments of letters which may or may not form words. These random assortments, if meaningless, may, if desired, be readily manually shifted into word-forming position, or may be continued by pushing the toy until the chance

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element brings up words having meaning. When the child has mastered the simpler words the toy may be expanded by the addition thereto of additional letter-bearing wheels or discs which considerably expand the word-forming ability of the toy and its educational effect upon the child.

Having shown and described my invention in considerable detail, I do not wish this highly specific disclosure to be taken in other than an illustrative sense. I do not wish to be limited to the exact form shown and described except as limited by the scope of the appended claims.

I claim:

1. An educational push toy comprising a plurality of peripherally aligned wheels having peripheral tires on which word-forming letters or the like are visible, an axle carrying said wheels, spacers between adjacent wheels forming between said adjacent wheels a chamber, a noise making apparatus contained within certain of said chambers, a yoke carrying the ends of said axle, and a handle engaged with said yoke.

2. An educational push toy comprising a plurality of peripherally aligned annular elements having word-forming letters or the like visible on their peripheries, an axle carrying said annular elements, said annular elements being shaped to form between each adjacent pair a chamber, a noise-making apparatus in certain of said chambers, spring means for positioning said letters in transverse alignment, means for extending said axle to greater length for reception of additional annular elements, an extensible yoke, over-extending said annular elements and engaging said axle, and handle means engaged with said yoke.

3. An educational push toy comprising a plurality of peripherally aligned wheels having pe-

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ripheral tires on which word-forming letters or the like are visible, an axle carrying said wheels, spacers between adjacent wheels forming between certain pairs thereof a chamber, a noise-making means contained within certain of said chambers, spring means on certain of said spacers for positioning said letters in transverse alignment, means for extending said axle to greater length for the reception of additional wheels and spacers, a longitudinally extensible yoke over-extending said wheels and engaging said axle and handle means engaged with said yoke.

4. In an educational toy, a plurality of independently rotatable disks having indicia upon their peripheries, an axle for supporting said disks adjacent each other, a yoke encompassing said disks and carrying said axle, a member carried by said yoke and having a reading edge extending transversely across said disks and forming an aligning edge for said indicia, and means for temporarily arresting the rotation of said disks in predetermined positions.

JOHN C. SHIELDS.

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