July 16, 1940. C. H. PAJEAU 2,208,049

TOY CONSTRUCTION BLOCK

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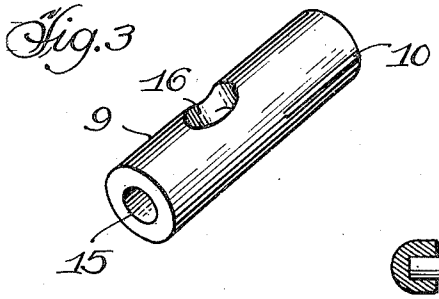

Fig. 3

Fig. 1

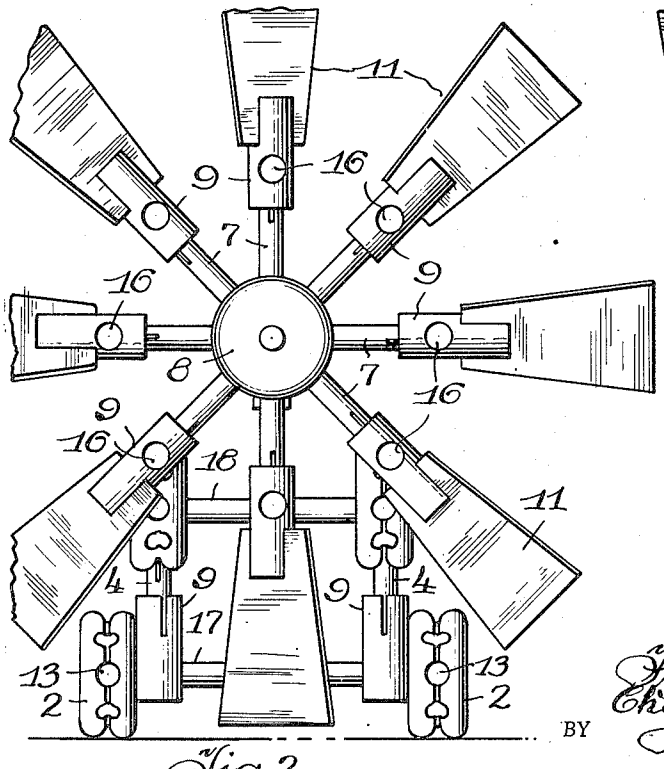

Fig. 2

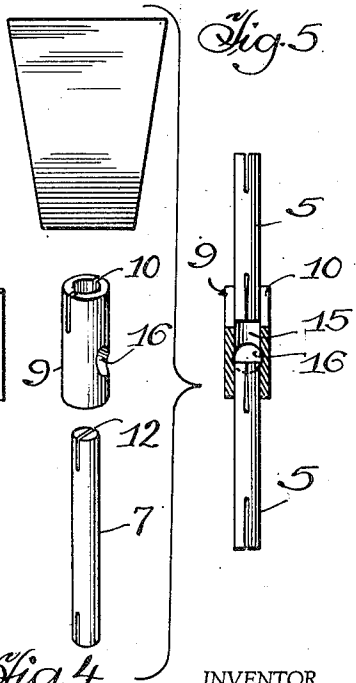

Fig. 4

Fig. 5

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TOY CONSTRUCTION BLOCK

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3 Claims. (Cl. 46—29)

The invention relates to toy construction blocks in which blocks, rods, connecting elements, wind vanes, etc. of a large variety of shapes and sizes are provided for assembly, particularly by children, into structures and mechanism of many shapes, sizes and types, without the use of pins, nails, nuts, bolts or other fastening elements. The parts are preferably of wood except for the wind vanes which are preferably of cardboard.

A difficulty encountered prior to the present invention was that by continually inserting the slotted ends of the rods into the bores or wells of the connecting elements the ends of the rods became contracted, would not always spring back to their normal position and would thereby decrease the width of the slot. This made it very difficult to insert the vanes, which are usually made of cardboard, into the slots in that the slots became permanently reduced at their outer ends, making it necessary to force the vanes into the slots, thereby damaging the cardboard and making the vanes unfit for use after this had happened a few times.

Another difficulty prior to my invention was that a set of such blocks consisted of a large number of rods of varying lengths. It often occurred that in building certain devices a large number of rods of one length was necessary and the child using the game was quite often unable to complete the desired structure because he did not have sufficient rods of that length.

An object of the present invention is to provide a new block which has a slotted end portion not intended or adapted to be inserted into the bores or wells of the other connecting portions, is never contracted or squeezed, and which consequently may be used any number of times as a vane holding member without danger of the end becoming contracted and thereby damaging the vane, and which will also serve as a connecting member or coupling for joining shorter rods to make a rod of the length desired so that when additional longer rods are needed, such additional ones may be quickly assembled by combining shorter rods by means of the novel connecting element or coupling.

Other objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

The invention further resides in the construction, combination and arrangements of parts illustrated in the accompanying drawing, and while I have shown therein a preferred embodiment, it is to be understood that the same is susceptible of modification and change, and comprehends other details, arrangements of parts, features and constructions without departing from the spirit of the invention.

In the drawing:

Fig. 1 is a side view partly in vertical cross section of a toy constructed of construction blocks using the novel connector and vane holding element of the present invention.

Fig. 2 is a fragmentary front view of the toy shown in Fig. 1.

Fig. 3 is a perspective view of the novel connecting element.

Fig. 4 is a disassembled view of a vane about to be connected to a rod by means of a connecting element, and

Fig. 5 is a view partly in vertical cross section of two rods joined by means of the novel connector element.

Referring more particularly to the embodiment of the invention disclosed in the drawing, a wind-driven wagon is shown at 1, comprising wheels 2 and connecting disks 3, the connecting disks and the wheels being identical in construction and being assembled or connected to each other by means of rods 4, 5 and 6 of varying lengths. To this assembly by means of other rods and connecting disks is joined a windmill arrangement or the like comprising a plurality of rods 7 radiating from a connecting disk 8 identical with the disks 2 and 3 and to the free end of each of which rods is attached the novel hollow cylindrical connector element 9, one end of which is slotted at 10 to receive vane 11, preferably of cardboard.

Except for the vane, the other parts of the assembly are preferably made of wood, each rod having a diametric slot 12, in each end thereof adapted to be inserted into the wells 13 of the disks, which disks are also provided with axial bore or opening 14. The rods are preferably of slightly greater diameter than the diameter of the bores or wells 13 of the connecting disks and, because of the slots 12, the sides of which are adapted to be forced together, may be inserted into the bores or wells. The rods being of wood are slightly resilient and the sides of the slots will tend to expand after entry into the well to clamp or retain the rod therein. As shown, the novel connector element is provided with a longitudinal bore or opening 15 therethrough, said opening being of the same diameter as the bores or wells 13 in the disks. The

connector is also preferably provided with a transverse opening or bore 16 of slightly larger diameter than the bores heretofore described whereby to provide a bearing for the rods when it is desired that the rods should be rotatable therein as when used for axles as shown at 17 in Figs. 1 and 2.

As shown in Fig. 5, when a rod is inserted into an opening a little smaller than the diameter of the rods, the end of the rod is contracted and the slot necessarily becomes narrowed at its end.

Inasmuch as the wood is not always sufficiently resilient to return to its original shape after repeated distortion or contraction, this condition soon becomes permanent and it then becomes necessary to use force to insert the vane into the slot and the vane becomes damaged. However, by inserting the vane into the slot 10 of the connector 9, which slot is never inserted into another part and therefore does not become contracted or distorted, it is possible to use the vanes indefinitely. It is also apparent that the connector elements 9 are readily available for joining two or more shorter rods to provide additional rods of the length of the longer rods, as shown in Fig. 5, where that becomes necessary.

Having thus disclosed the invention, I claim:

1. In a toy construction set of the type provided with connecting parts of various forms and having a plurality of rods with slotted ends, comprising wind vane members, a connector block of larger diameter than said rods and having a central bore extending longitudinally therethrough of a size to receive and retain a slotted end of a rod, a longitudinally extending diametric slot in one end of said block on each side of the bore for grippingly receiving and holding a wind vane and at the same time preserving the integrity of the vane, the other end of said block being free of any longitudinal slot.

2. In a toy construction set of the kind in which connecting parts of various forms may be interfitted to construct devices of various shapes, comprising a plurality of rods with slotted ends, elements having openings of a size to snugly receive the slotted ends of said rods and in which the portions of the rods on each side of said slots will be sprung toward each other while in said openings, wind vanes, and connector blocks each comprising a member having a central cylindrical bore extending longitudinally therethrough of a size slightly smaller than the normal diameter of said rods so as to receive at either end an end of a rod with its slotted end compressed into the longitudinal cylindrical bore, a longitudinally extending diametric slot in one end of each connecting block extending transversely entirely through the thickness of the material of the connecting block on both sides of the longitudinal bore, said connecting block having a transverse bore extending entirely therethrough of a diameter greater than the diameter of said rods to enable rotation of a rod therein, the end of each connecting block opposite to the end having the diametric slot being unslotted, the slotted end of each of said blocks being at all times free of compression and always of a size to grippingly receive a vane in said slot and preserve the integrity of the vane with respect to the sides of the slot.

3. A toy construction block for toy construction sets of the kind in which connecting parts of various forms may be interfitted to construct devices of various shapes in which are used rods with slotted ends, connecting disks and flat thin members, said construction block comprising a connector member having a central longitudinal bore extending therethrough of a size to receive at either end of the connector member a slotted end of a rod in compressed gripping relation, said connector member also having a transverse bore of a size slightly larger than the diameter of the rods, one end of the connector member having a longitudinally extending diametric slot extending transversely entirely through the thickness of the material on both sides of the longitudinal bore, the opposite end of the connector member being unslotted, the slotted end of the connector member being at all times free of compression and always of a size to grippingly receive one of said flat members in the slot and maintain its integrity with respect to the sides of the slot.

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