

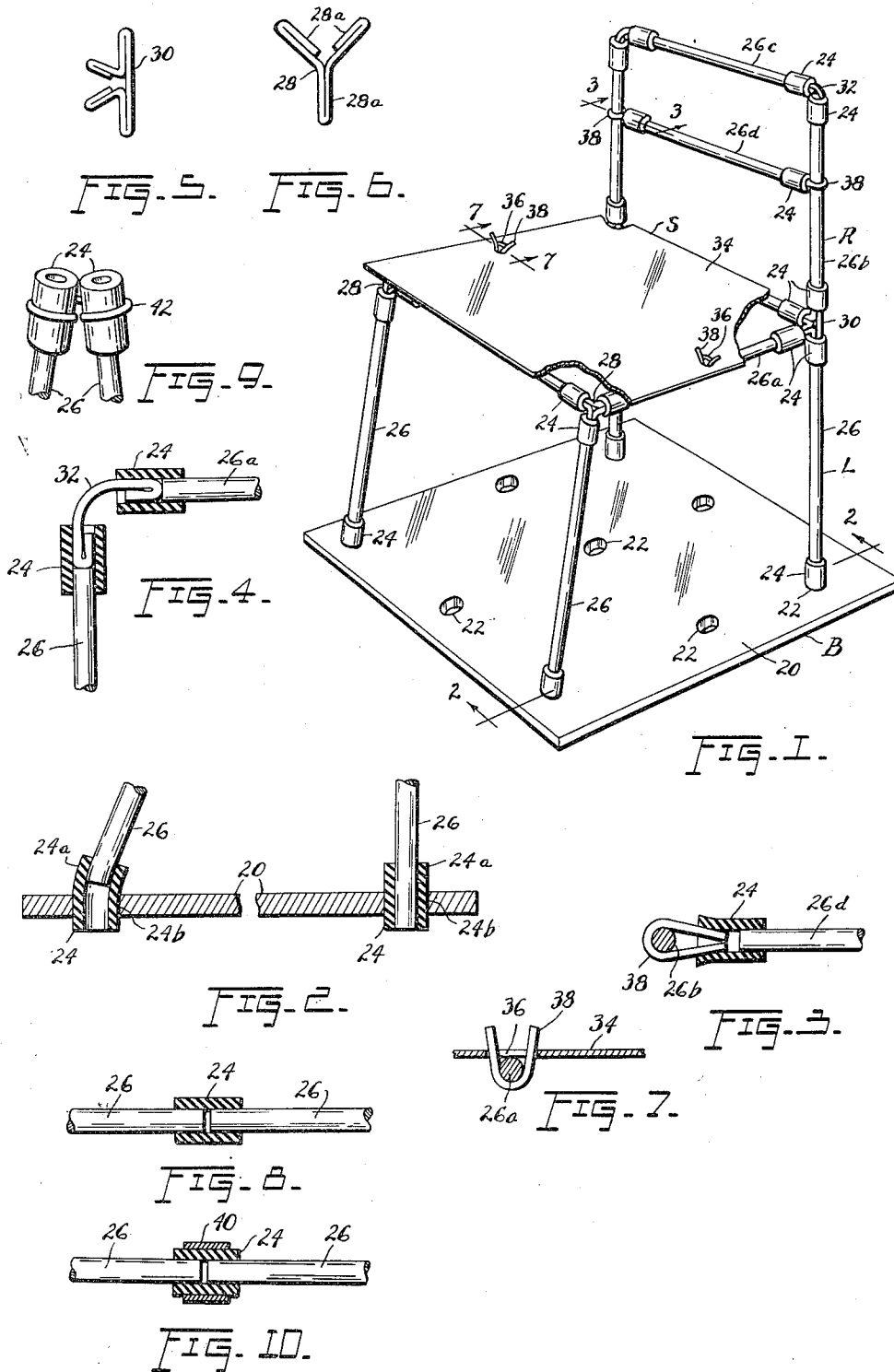
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W. HERRSCHAFT

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CONSTRUCTION SET ELEMENTS AND JOINT

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CONSTRUCTION SET ELEMENTS AND JOINT

William Herrschaft, New York, N. Y.

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1 Claim. (Cl. 46—23)

This invention relates to new and useful improvements and structural refinements in so-called construction sets, that is, toys and/or educational appliances or apparatus which involve the use of a plurality of individual but co-ordinated components adapted to be assembled in a selective fashion into an infinite variety of units.

Apparatus of this nature readily lends itself to amusement, demonstrative or educational purposes, and the principal object of the instant invention is to facilitate the construction of an infinite number of different assemblies by using a relatively small variety of different, simple components.

An important feature of the invention, therefore, resides in the specific structure of the components per se and, particularly, in providing such components with simple means whereby the same may be readily connected together during the construction of any particular assembly.

An additional feature of the invention resides in the provision of component connecting means which may be readily disconnected, when so desired, and wherein the connection may be effected without damage or mutilation to the components, so that the components may be used repeatedly in the construction of different assemblies.

Some of the advantages of this invention reside in its simplicity and in its adaptability to economical manufacture.

With the above more important objects and features in view, and such other objects and features as may become apparent as this specification proceeds, this invention resides essentially in the structure and arrangement of parts as shown in the accompanying drawings, wherein:

Figure 1 is a perspective view, illustrating an example of one assembly such as may be constructed with the invention;

Figure 2 is a sectional view, taken substantially in the plane of the line 2—2 in Figure 1;

Figure 3 is a sectional view, taken substantially in the plane of the line 3—3 in Figure 1;

Figure 4 is a sectional detail showing one form of a connecting element used in the invention;

Figure 5 is a perspective view showing another form of a connecting element;

Figure 6 is a perspective view showing another form of a connecting element;

Figure 7 is a sectional view, taken substantially in the plane of the line 7—7 in Figure 1;

Figure 8 is a sectional detail showing a typical connection of two rods by a bushing;

Figure 9 is a perspective view showing a connecting ring on the bushings of two juxtaposed rods; and

Figure 10 is a sectional detail showing a connection similar to that illustrated in Figure 8, but with a reinforcing sleeve on the bushing.

Like characters of reference are employed to designate like parts in the specification and throughout the several views of the drawing.

Referring now to the accompanying drawing in detail,

2

particularly to Figure 1, the same illustrates an example of one assembly such as may be constructed with this invention. The example shown is a chair, including generally, a supporting base B, a plurality of legs L, a seat S, and a back rest R. It is to be understood, however, that this example is shown for illustrative purposes only, and that the various components comprising the invention may be assembled in an endless variety of different ways so as to form, at the will of the user, an infinite number of different units.

In the example shown, the supporting base B consists of a platelike member 20 which is provided with a plurality of apertures 22. Bushings 24 of resilient, flexible material may be inserted selectively in the apertures 22 of the member 20. These bushings, in turn, have inserted therein rods 26 which constitute the legs L of the chair.

With reference now to the accompanying Figure 2, it will be noted that when the rods 26 are inserted only in the outer portions of the bushings which project outwardly from the member 20 as shown at 24a, the bushings may be flexed so that the rods 26 extend obliquely to the plane of the member 20. However, when the rods are inserted fully into the bushings so that they are disposed in both the outer portions of the bushings as well as the inner portions 24b which are located within the apertures 22, the bushings will be reinforced by the member 20 to such extent that the rods will be sustained in a substantially perpendicular relation to the member 20, as illustrated. Thus, by simply inserting the rods in the bushings to a lesser or greater extent, the arrangement may be readily varied to facilitate or discourage angular movement of the rods with respect to the plate-like member, as the case may be.

The upper end portions of the rods 26 are provided with additional bushings which project beyond the ends of the rods, so that the upper portion of the bore of each of the tubular bushings is open to receive a connecting element 28. This element, formed from wire, or the like, is angulated so as to provide a plurality of angularly disposed prongs 28a which, for illustrative purposes, are shown as being perpendicular to one another in the perspective view in Figure 6.

By virtue of the prongs 28a, which may be inserted and frictionally sustained in the bore of the bushings 24, the elements 28 may be used for connecting together bushings on the ends of angularly disposed rods, such as for example, the leg forming rods 26 and the seat supporting rods 26a. In the instance of the rear legs of the chair, multi-pronged connecting elements 30 (shown in Figure 5) may be used for connecting together the rods 26, 26a, as well as the rods 26b of the back rest R. The top rod 26c of the back rest is connected to the bushings of the rods 26b by means of right-angle connecting elements 32, best shown in Figure 4. It is to be observed that the connecting elements 28, 30, 32 are similar in construction, varying only in the number and angular disposition of the prongs with which they are provided.

The seat S consists of a relatively thin panel 34 which is positioned on the rods 26a and is provided with a plurality of openings or apertures 36, whereby to receive a pair of leg portions of a substantially U-shaped connecting element 38. The latter is formed from resilient wire, or the like, and the bight portion thereof embraces the associated rod 26a, whereby the seat panel 34 is sustained in position on the rods of the seat.

A somewhat similar arrangement is employed for connecting a brace rod 26d of the back rest R to the rods 26b, as shown in Figure 3. In this instance the bight portions of the clip elements 38 embrace the rods 26b while the leg portions of those elements frictionally en-

gage the bores of bushings provided on the end portions of the rod 26d.

In instances where it is desired to connect together two rods disposed in substantial longitudinal alignment, the end portions of such rods may simply be inserted in the opposite end portions of one of the bushings 24, as shown in Figure 8. In such instances, the flexibility of the bushing will permit the two rods to be adjusted angularly to each other. Alternatively, where the rods are to be sustained in a substantially rigid, longitudinal alignment, a reinforcing sleeve 40 of relatively rigid material may be positioned on the bushing to reinforce the connection between the rods, as shown in Figure 10.

Finally, in instances where two or more rods have juxtaposed end portions, either parallel or oblique to one another as illustrated in Figure 9, bushings provided at the ends of such rods may be connected together by means of a ring or band 42 of wire, or the like. In such cases the wire ring, which preferably has free opposing ends, is sufficiently yieldable to permit expansion and contraction of the ring and thereby facilitate relative angular adjustment of the rods without impairing its ability to bind and secure the bushings of the rods together.

While in the foregoing there has been disclosed the preferred embodiment of this invention, it is to be understood that various modifications may be resorted to, such as may lie within the spirit and scope of the appended claim.

What is claimed as new is:

The combination of a plate-like support member provided with an aperture perpendicular to a face thereof, a tubular bushing of resilient flexible material and of substantially the same outer size as the aperture having one hollow end portion thereof frictionally mounted in said aperture and projecting outwardly therefrom, and a relatively rigid rod of substantially the same size as the bore of the bushing disposable by its end portion frictionally in the projecting portion of said bushing, whereby to couple the rod to the plate-like support member for variable angled jointure therebetween, and said rod being slidably and frictionally insertable in the entire length of said bushing, whereby to internally reinforce said hollow end portion of the bushing and coact with the external support afforded by said member in sustaining the bushing and the rod in a straight perpendicular relation to the support member.

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