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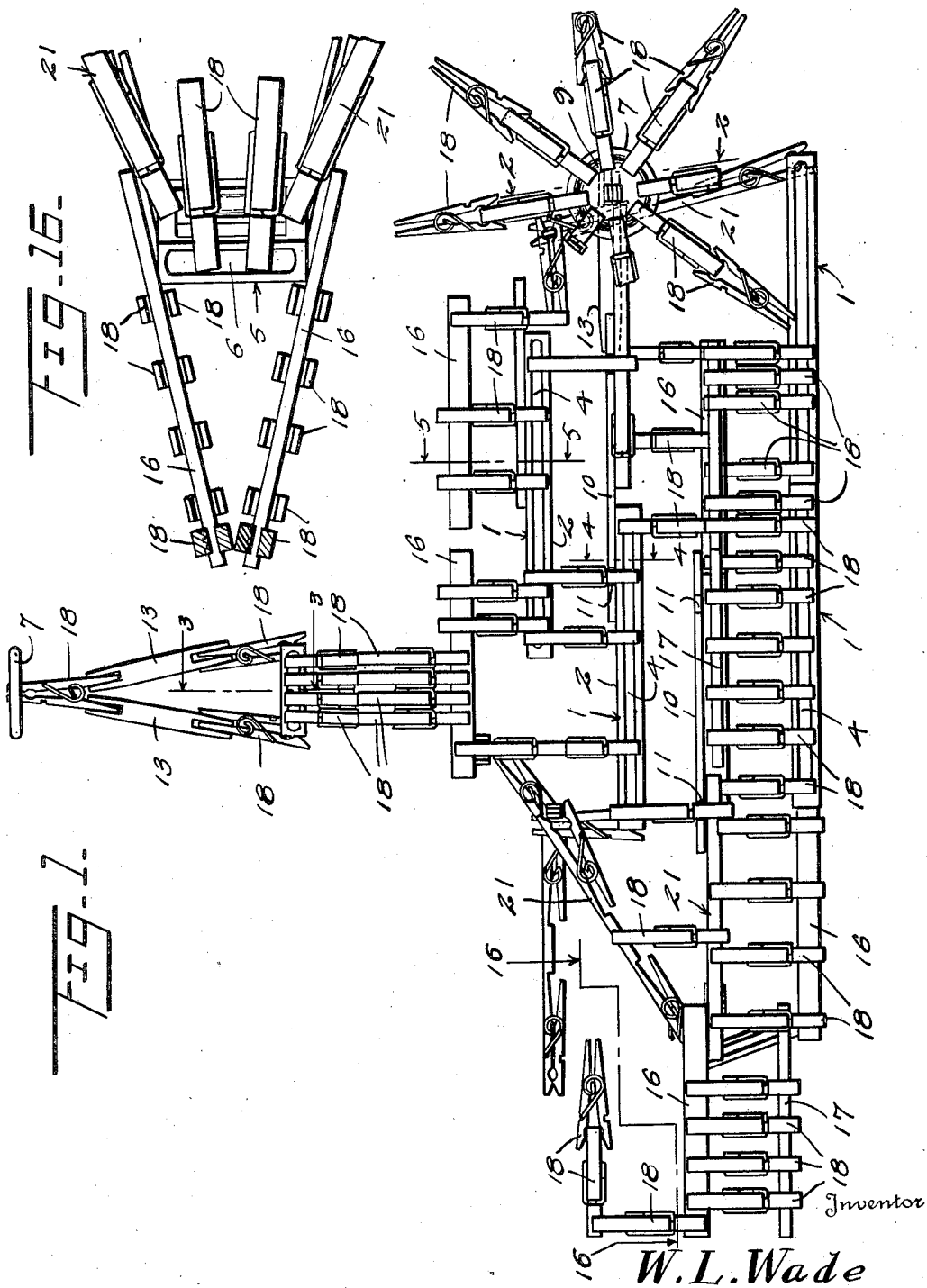
W. L. WADE

2,022,261

TOY CONSTRUCTION SET

Filed July 18, 1935

3 Sheets-Sheet 1



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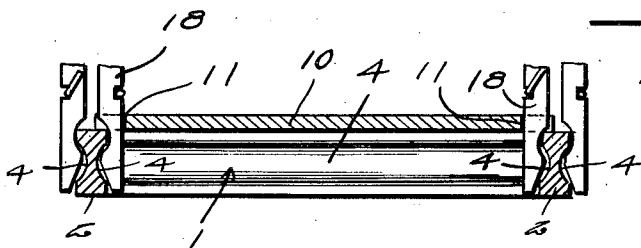
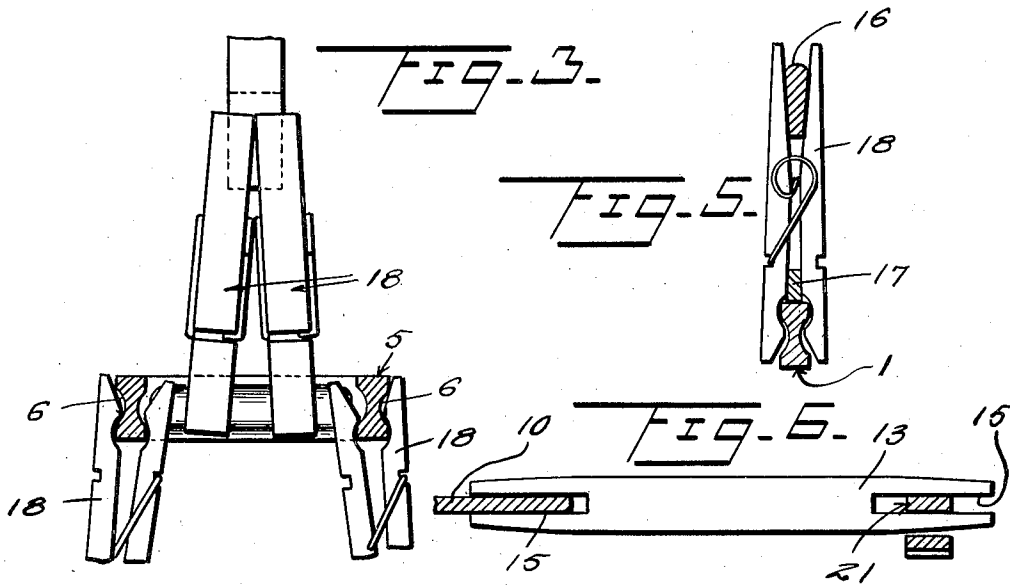
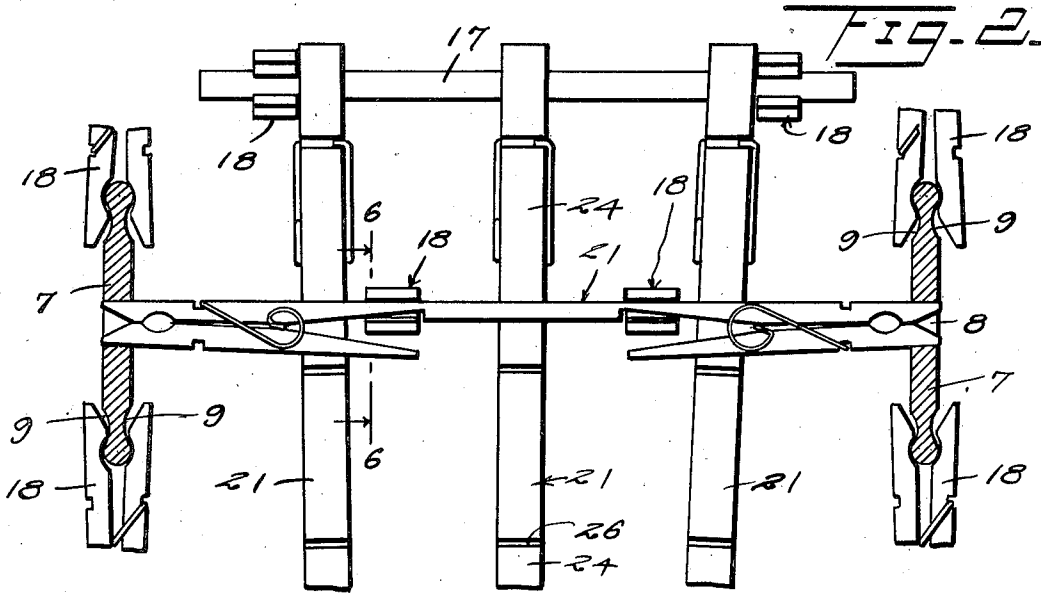
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TOY CONSTRUCTION SET

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3 Sheets-Sheet 2



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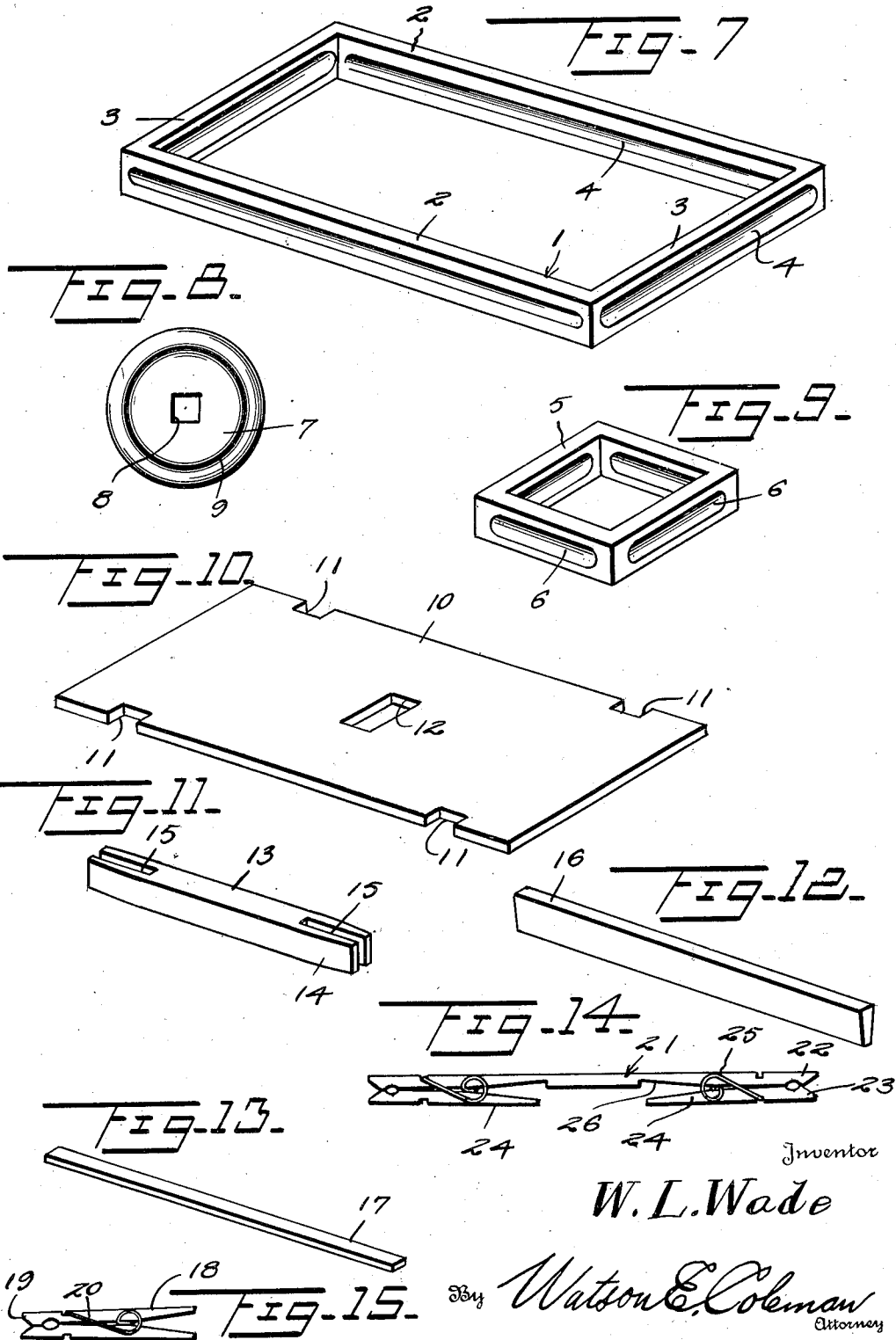
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TOY CONSTRUCTION SET

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3 Sheets-Sheet 3



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TOY CONSTRUCTION SET

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7 Claims. (Cl. 46—23)

This invention relates to the class of toys and pertains particularly to toys of the type known as construction sets.

The primary object of the present invention is to provide a toy construction set which includes and makes use of a spring grip type of clothespin and certain other units which facilitate the construction of a large variety of toys.

Another object of the invention is to provide a construction set having in addition to the clothespin units, other parts or units of simple inexpensive construction whereby the set, as a whole, may be economically produced.

A further object of the invention is to provide a novel group of construction elements which in association with the spring type of clothespin referred to may be employed to construct practically any type of structure.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawings but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 illustrates in side elevation one type of structure which may be built up with the elements of the construction set embodying the present invention;

Figure 2 is a sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a sectional view taken on the line 3—3 of Figure 1;

Figure 4 is a sectional view taken on the line 4—4 of Figure 1 and extending transversely of the structure;

Figure 5 is a sectional view taken on the line 5—5 of Figure 1 and extending only through one side of the structure;

Figure 6 is a sectional view taken on the line 6—6 of Figure 2;

Figure 7 is a view in perspective of one of an elemental group of units of the set;

Figure 8 is a view in side elevation of another of an elemental group of the set;

Figure 9 is a view in perspective of another one of an elemental group of the set;

Figure 10 is a view in perspective of another one of an elemental group of the set;

Figure 11 is a view in perspective of another one of an elemental group of the set;

Figure 12 is a view in perspective of another one of an elemental group of the set;

Figure 13 is a view in perspective of another one of an elemental group of the set;

Figure 14 is a view in side elevation of another one of an elemental group of the set;

Figure 15 is a view in side elevation of another one of an elemental group of the set;

Figure 16 is a sectional view taken substantially upon the line 16—16 of Figure 1.

Referring now more particularly to the drawings, it will be seen upon reference to Figures 7 to 15 inclusive that the construction set embodying the present invention is made up of nine distinct elements and a complete set comprises several of each of these individual elements of which one of each is illustrated. The numeral 1 in Figure 7 illustrates an oblong frame having the parallel side bars 2 and transverse end bars 3. Each of these side and end bars has a wide channel 4 formed longitudinally of its inner and outer face to facilitate the attachment of certain of the other elements thereto in the construction of a built-up unit.

The numeral 5 indicates a rectangular frame in which the inner and outer faces of the four side pieces have longitudinal recesses or channels 6 like the channels 4 of the frame 1.

In Figure 8 is illustrated a disk 7 having a rectangular central aperture 8 and having a groove or channel 9 formed in each side face concentrically with the outer edge thereof. This channel, which is formed upon the two sides of the disk, is provided to facilitate the engagement of certain of the other elements of the set with the disk, as will be hereinafter more fully described.

Figure 10 represents one of a number of elements which are in the form of a board 10, which may be of oblong design, as illustrated, or rectangular, if desired. In two opposite edges, this board is provided with recesses or notches 11 while a rectangular opening 12 is formed through the central part thereof.

The numeral 13 in Figure 11 illustrates a bar having two opposite faces at each end beveled, as indicated at 14, to decrease the width of the bar at the end and having a slot 15 formed in each end between the beveled surfaces 14, as illustrated. These beveled ends 14 of the bar 13 are designed for frictional engagement in the opening 12 of the board 10 and the thickness of the board 10 is such that it will frictionally

engage in a slot 15 of the bar where it is desired to couple the board and bar together in this manner.

The numeral 16 in Figure 12 illustrates a bar which is of greater thickness at one longitudinal edge than at the other, the bar thus presenting in transverse section a wedge-like appearance which facilitates its frictional engagement between portions of one of the elements about to be described. This bar, together with the bar 17 illustrated in Figure 13 is employed in the construction of a unit where a large number of the clothespins of the character indicated by the numeral 18 in Figure 15 are to be set up in side by side relation. The bar 17 is relatively light and is flexible so that, because of its lightness, it may be used in quantity in a structure without materially increasing the weight of the structure and its flexibility permits of the formation of curved walls or the like.

The unit 18 is of the usual spring type clothespin, the jaws of which are indicated by the numeral 19, and are normally maintained in firm contact by a spring 20 which couples the two parts of the pin together. At the opposite end of the pin from the jaw, the two parts of the pin are in divergent relation so that the thin edge of the wedge-like bar 16 may be easily frictionally engaged therebetween in the manner illustrated in Figure 5.

Figure 14 represents a twin form of the clothespin illustrated in Figure 15, wherein there is provided a single long bar 21 which at each end is formed to provide a jaw 22 which is held in opposed relation with a similar jaw 23 of a short bar 24. The short bar 24 is of the same construction as either of the two bars of the clothespin illustrated in Figure 15, and this short bar is held in operative relation with one end of the long bar 21 by the spring 25. The side of the long bar 21, which is in opposition to the free ends of the bars 24 which are joined thereto, is cut out, as indicated at 26, to provide space for the inward movement of the bar 24 against the tension of the spring 25 so that the jaws 22—23 may be opened, and this also provides an area into which an end of the bar 16 may be inserted, or in which one of the furcations at the end of a bar 13 may be inserted so that the bar 21 is frictionally engaged in the slot 15 of a bar 13, as illustrated in Figures 2 and 6.

The number of structures which may be built up of the units illustrated in Figures 7 to 15 inclusive, is limited only by the ingenuity of the user of the set, therefore, it would be impossible to illustrate the many uses to which the set could be put, but in order that the manner of coupling the several parts described may be readily understood, there is shown in Figure 1 a structure representing a river boat in which at least one of each of the unit elements is shown. As will be seen, two of the oblong frames 1 form a part of the base of the boat structure together with the parts 16 and 17. The side members of the frames 1 and the parts 16 and 17 are gripped by a number of vertically disposed gripping elements or pins 18, certain of which at their upper ends have frictionally engaged between the two parts thereof other bars 16.

Between the two sides of the base structure thus formed, a board 10 is horizontally disposed which rests upon the upper ends of the lower vertical elements 18 and which has at each side

one of these elements engaged in a notch 11. This forms a deck for the structure, as is clearly shown in Figure 1.

Figure 4 illustrates how the gripping elements 18 engage the sides of a frame 1, the faces of the jaws locating in the opposite channels 4 of the frame so that the gripping element cannot slip from position. This view also illustrates how one side of a gripping element may position in the notch 11 in the side edge of a board 10 so as to maintain the board in position in a built up structure. Figure 3 also illustrates the connection of gripping elements with the small rectangular frame 5. The action here is the same, of course, as in connection with the frame 1, but this view further shows the width of the structure illustrated in Figure 1, showing how the superstructure is supported from longitudinally extending side rails or bars 16. This superstructure is made up, as shown, of the single gripper elements 18, the end slotted bars 13, and a disk 7 which has the jaw ends of a gripper element 18 frictionally engaged in the aperture 8 thereof.

At the rear of the boat structure, a pair of the bars 13 is located, each of which is frictionally connected with the rear edge of a board 10 which forms one deck of the boat structure. The other ends of the bars 13 receive in the slots thereof the single long bar of a double or twin gripper element 21. The jaws at the ends of this double or twin gripper element are frictionally engaged in the apertures of the disks 7 and each of these disks is engaged about its periphery by and between the jaws of a plurality of the single gripper elements 18, thus illustrating the purpose of the channels or grooves 9 formed circularly in the two faces of the disks, as will be readily apparent. This rear construction of the boat, employing the two disks 7, the single gripper elements radiating from the disks and the transversely disposed double gripper element 21, simulates the paddle wheel structure of a river boat.

A series of the double gripper elements 21 are arranged at the rear of the boat structure and extend upwardly across the central part of the paddle wheel simulating portion, and form a connection between the rear end of the rear bottom frame 1 and the rear of the upper part of the boat structure, as is clearly shown in Figure 1.

While each and every one of the elements going to make up the boat structure pictured in Figure 1 has not been referred to specifically, it is believed that a sufficient description of the structure has been given to show the general idea for combining the elemental parts, when taken in association with the sectional views illustrated in Figures 2 to 6 inclusive.

From the foregoing, it will be readily apparent that a child or anyone else capable of thinking out simple constructional details may very easily figure out a large number of other objects which may be built up by combining the elements of the set in various ways. It is understood, of course, that a complete set will be made up of a number of each of the units illustrated in Figures 7 to 15 inclusive, which number may be increased or decreased according to the commercial value of the set desired.

What is claimed is:—

1. A toy construction set, comprising in combination with a plurality of spring actuated clothespins, bar members, disks, and boards, said

disks being provided with central apertures adapted to frictionally receive an end of one of said clothespins and a circular groove on each face facilitating a non-slipping gripping engagement of one of said clothespins therewith, and said boards having edge formations facilitating the interconnection of said clothespins therewith.

2. A toy construction set, comprising in combination with a plurality of spring clothespins, a plurality of frames having inner and outer faces, a plurality of bar members, a plurality of disks, and a plurality of boards, each of said disks having an aperture to frictionally receive an end of one of said clothespins, each of said frames having grooves extending longitudinally of the inner and outer faces thereof facilitating the non-slipping gripping engagement of one of said clothespins therewith and each of said boards having edge recesses each adapted to receive a clothespin.

3. A toy construction set, comprising a plurality of spring clothespins, a rectangular frame having each of the four sides thereof provided with an inner and outer face and each face having a longitudinal groove therein facilitating the non-slipping gripping engagement of one of said clothespins therewith, and a plurality of bar members adapted for connecting together ends of a group of said clothespins.

4. A toy construction set, comprising a plurality of spring clothespins, a rectangular frame having each of the four sides thereof provided with an inner and outer face and each face hav-

ing a longitudinal groove therein facilitating the non-slipping gripping engagement of one of said clothespins therewith, and a plurality of bar members adapted for connecting together ends of a group of said clothespins, certain of said bar members having a longitudinally extending slot in each end and certain others of the bar members being of wedge-shaped cross-section.

5. In a toy construction set including a plurality of spring clothespins, a twin gripping element comprising an elongated bar having each end formed as a gripping jaw, a jaw member paralleling said bar at each end and opposing the adjacent jaw, spring means connecting each of the ends of the bar with the adjacent jaw member, and elements facilitating the coupling together of clothespins and said twin gripping element for said erection of a structure.

6. A toy construction set, comprising a plurality of spring clothespins, a rectangular frame adapted to have any one of the four sides thereof engaged by one of said clothespins, and a plurality of bar members adapted for connecting together the ends of a group of said clothespins.

7. A toy construction set, comprising a plurality of spring clothespins, a rectangular frame adapted to have any one of the four sides thereof engaged by one of said clothespins, and a plurality of bar members adapted for connecting together the ends of a group of said clothespins, certain of said bar members having slots extending longitudinally inwardly from their ends.

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