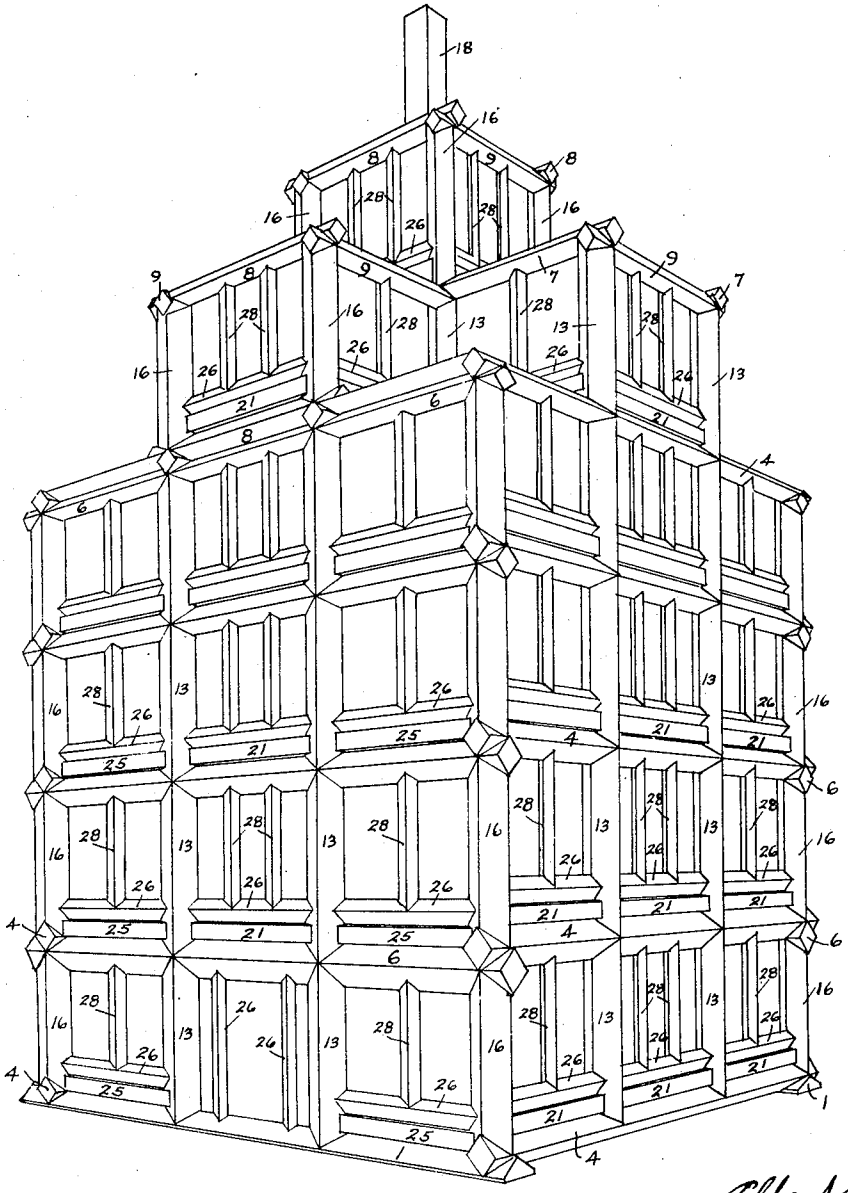
Nov. 14, 1933. A. H. WESSEL 1,935,256

TOY STRUCTURE

Filed Feb. 16, 1932 3 Sheets-Sheet 1

FIG. 1



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TOY STRUCTURE

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FIG. 2

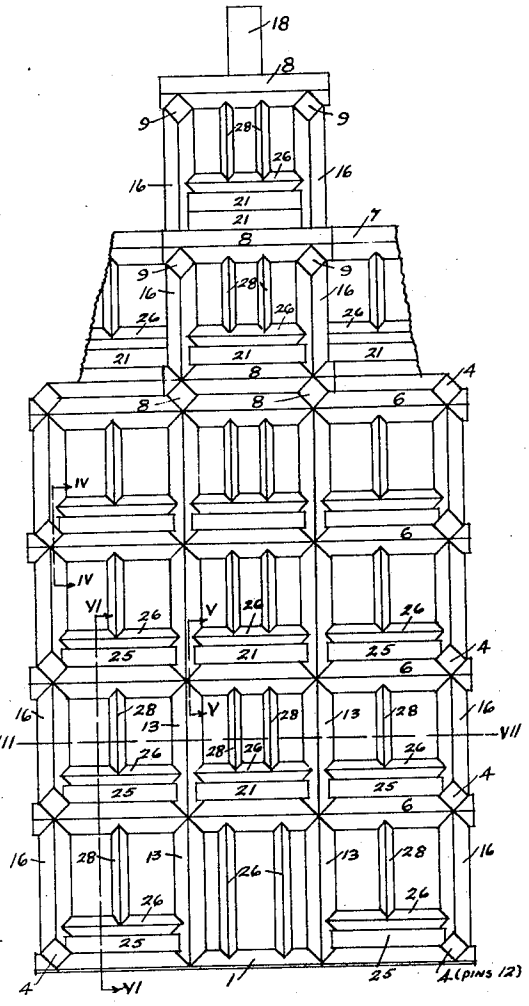


FIG. 3

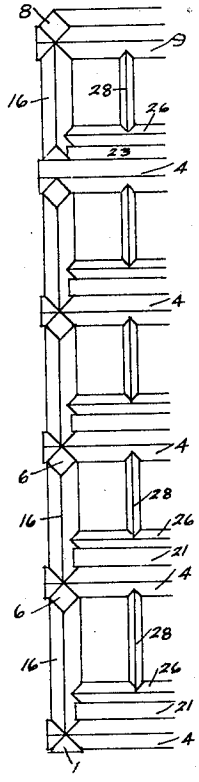


FIG. 4

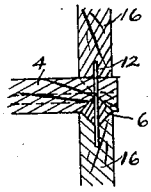


FIG. 5

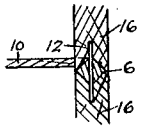


FIG. 6

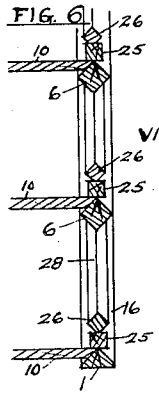
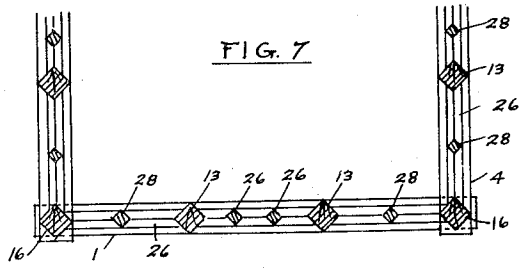


FIG. 7



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Nov. 14, 1933. A. H. WESSEL 1,935,256

TOY STRUCTURE

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FIG. 8

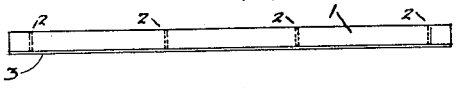


FIG. 9



FIG. 10

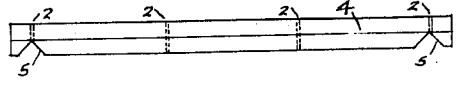


FIG. 11



FIG. 12

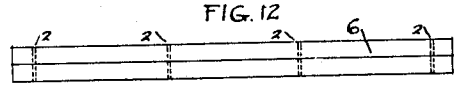


FIG. 13



FIG. 14

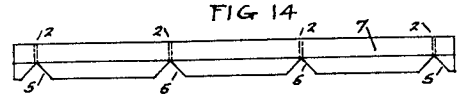


FIG. 15



FIG. 16

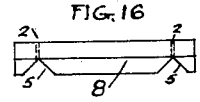


FIG. 17



FIG. 18

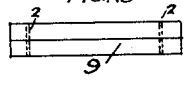


FIG. 19



FIG. 20

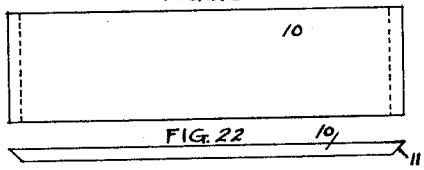


FIG. 21



FIG. 22

FIG. 23

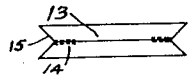


FIG. 24



FIG. 25

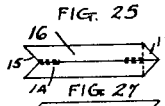


FIG. 26



FIG. 27

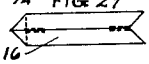


FIG. 28

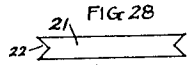


FIG. 29



FIG. 30

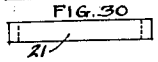


FIG. 31

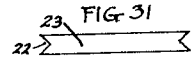


FIG. 32



FIG. 33

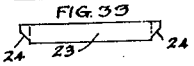


FIG. 34

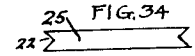


FIG. 35



FIG. 36

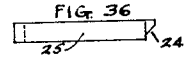


FIG. 37

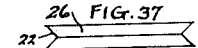


FIG. 38

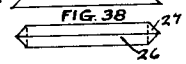


FIG. 39



FIG. 40

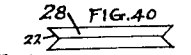


FIG. 41



FIG. 42

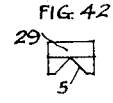


FIG. 43



FIG. 44

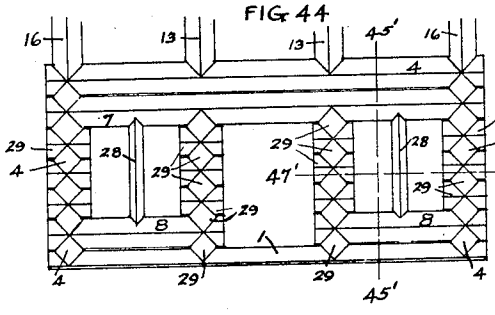


FIG. 45

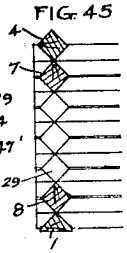


FIG. 46

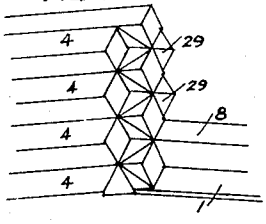


FIG. 47

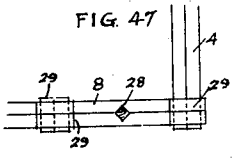


FIG. 48

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Patented Nov. 14, 1933 1,935,256

UNITED STATES PATENT OFFICE

1,935,256

TOY STRUCTURE

Albert H. Wessel, Pittsburgh, Pa.

Application February 16, 1932. Serial No. 593,263

11 Claims. (Cl. 46—35)

My invention relates to building structures and the like, and it has special relation to building parts.

One object of my invention is to provide a number of different building blocks or parts, all of simple form, however, that may be readily interfitted to produce different objects, such as toy buildings, that children like to make.

Another object of my invention is to provide children with toy apparatus which, while permitting harmless amusement, also tends toward constructive thinking and training of the hands and eyes.

A further object of my invention is to provide building parts that are multi-angular, preferably square, in section and notched on their sides or their ends to fit together in such manner as to present, when assembled into a toy building or the like, angles or corners rather than sides in elevation.

Another object of my invention is to provide toy building parts, or the like, multi-angular in section and having a notch therein adapted to fit over one of the angles of another part to facilitate assembly to any desired height.

Still another object of my invention is to provide toy building parts, one kind having lateral notches near each end for fitting over angles of other parts disposed at substantially right angles to the notched part.

A further object of my invention is to provide toy building members multi-angular in section, one kind having notches in its ends adapted to fit over one of the angles of another kind disposed at right angles.

A more specific object of my invention is to provide toy building parts or blocks adapted for building a structure comprising substantially square members disposed horizontally and cornerwise, and vertical, substantially square members also disposed cornerwise and notched to fit over angles of the horizontal members, thus providing a pleasing and novel appearance to the finished structure.

Other objects of my invention will become evident from the following detailed description, taken in conjunction with the accompanying drawings, in which:

Figure 1 is a perspective view of a toy building structure organized in accordance with my present invention;

Fig. 2 is a partial view in front elevation, and Fig. 3 a partial view in side elevation of the structure shown in Fig. 1;

Figs. 4 to 7, inclusive, are fragmentary sectional views, taken along the lines IV—IV to VII—VII, inclusive;

Figs. 8 to 43, inclusive, are views of the individual parts or blocks that may be used to produce structures such as that shown in Fig. 1;

Fig. 44 is a partial view showing a different type of assembly for the lower portion of the structure shown in Fig. 1;

Figs. 45 and 47 are sectional views taken along the lines 45'—45' and 47'—47' of Fig. 44;

Fig. 46 is a partial perspective view of a corner of the structure shown in Fig. 44, and

Fig. 48 is a perspective view of another form of wall that may be readily formed with my toy building blocks.

Referring to the drawings, Figs. 1, 2 and 3 clearly indicate to the observer the novel and pleasing appearance produced by the use of my toy building blocks, nearly all of which are presented in angular or cornerwise relation rather than presenting the flat sides. The various members have suitable notches, mostly in the ends, although the lower members 4 are provided with lateral notches near their ends, and member 7 with lateral notches near the ends and at intermediate points corresponding to the number of divisions desired in a toy building, as hereinafter set forth, whereby the various members may be readily interfitted together, since the notches are shown as being right angles or 90 degrees, thus readily fitting over a 90-degree angle of another member.

It will be noted that all of the members shown in these figures are substantially square in section, and while this is at present the preferred form, nevertheless five-sided, six-sided, etc. members may be provided if desired, the notches in the various parts to be made to correspond to the angle or angles that it is desired to interlock with or engage. My blocks may be made of wood, metal or any other suitable material.

The best way to understand the completed structure of Fig. 1 is for the construction or assembly thereof to be described step by step, using the various individual parts or blocks that are shown in Figs. 8 to 41, inclusive.

Two parts or blocks 1 of Fig. 8 are first placed on the floor parallel to each other. These blocks, it will be noted, are substantially triangular in cross section, and preferably with slightly flattened apices 3. The base of these triangular members is placed flatwise on the floor, thus presenting a substantially right-angle corner for further assembly or engagement.

Two parts or blocks 4, preferably with slight-

ly flattened corners and having lateral 90-degree notches 5 near their ends, are next placed at substantially right angles to the triangular base members 1, so that the notches 5 fit over the upwardly presented corners or angles of the base members 1. In this way, a square base or foundation is provided. It will be noted that certain small holes 2 are provided in the blocks 1, 4 and in several of the others, the reason for this being to permit pins or small rods, such as 12 of Fig. 21, to pass through or into these small holes and thus pin or fasten parts of the structure together. While the structure, up to a certain height at least, might be built and assembled without the use of these pins, nevertheless, in addition to permitting higher structures, the pins insure against accidental knocking apart of the blocks and readily permit a completed structure to be carried from one point to another by grasping the lower parts thereof.

Pins such as 12 are next inserted in the small holes 2 that extend above and through blocks 4 (into the notches 5) and then laterally into blocks 1 near their ends, whereby the square foundation is rigidly pinned together.

Floor boards 10 may next be inserted in place, these boards having bevels or chamfers 11 extending downwardly and inwardly, the angle of the bevel or chamfer corresponding, of course, to that of the blocks 4 in their cornerwise position, or, in other words, an angle of 45 degrees. As indicated in Fig. 6, for example, the top surface of the floor boards 10 is substantially flush with the top flattened apex of the triangular base member 1, and the boards are of such length as to properly fit when any given number of bays or lateral divisions of the building are employed, such as three in the structure illustrated in Fig. 1.

Pins 12 are next inserted in the intermediate openings 2 of the base members 1 and 4, and blocks 13 of Fig. 23, having end right angle notches 15 and pin holes 14 extending to the crevices thereof, are assembled on the intermediate pins 12 to form vertical pillars or columns defining the number of bays or sections into which each face of the building is to be divided. At the corners, members or blocks 16 are assembled over the corresponding pins 12, these members having notches 15 at each end, which, however, are disposed at right angles to each other instead of being parallel to each other as in the blocks 13. Throughout the construction of the building, the blocks 16 are disposed vertically at the corners and the blocks 13 vertically at intermediate points.

Blocks 21 (Fig. 28) and 25 (Fig. 34), small in section, are next laid. Blocks 25 are used adjacent to and at right angles to members 4, and blocks 21 are used in intermediate bays and in end bays where they are placed parallel to members 4. Blocks 21 and 25 present a side rather than a corner to the observer, and are the only members or blocks that do so. Blocks 21 and 25 have right angle notches 22 at both ends and at right angles to the illustrated chamfers. The blocks 25, it will be noted, have a shoulder 24 bevelled or chamfered at one end to fit over the bevelled surface of member 4. Blocks 21 do not need chamfered ends as they merely engage the corners of upright blocks 13 and 16, as the case may be. As a result, the members 25 fit closely against the sides of the base blocks 4, the notches 22 of the members 21 and 25 engaging the corners of vertical members 16 and 13 or of two adjacent vertical members 13, thus being securely maintained in place and forming a snug fit, as the members 21 and 25, as will be noted from Fig. 6, rest partially on the floor boards 10.

Blocks 26, preferably having slightly flattened lower corners, are next assembled on top of blocks 25 or 21, these blocks being smaller in section than the blocks 13 and 16 and being provided with right-angle end notches 22 to engage the corners of vertical blocks 13 and 16 and present their own corners to the observer. It will be noted that the blocks 26 are particularly adapted for forming the sills of windows or such openings.

Blocks 28 (small in section) are next assembled over the middle portions of the sill blocks 26. These blocks, shown in Fig. 40, have right-angle end notches 22 and are adapted to present a corner or angle to the observer. They thus divide the openings formed by vertical blocks 16 and 13, for example, into two or more parts as desired.

Long blocks 6, preferably having slightly flattened corners, are next assembled by laying them cornerwise into the upper notches of the various vertical blocks 16, 13 and 28 and, in the case of the lowermost floor of Fig. 2, into the upper notches of additional blocks 26 which are disposed on end, being located on the central portion of the triangular base blocks 1 to form a doorway. The long blocks 6, it will be noted, are placed floor above floor parallel to the triangular base blocks 1, whereas additional long blocks 4, having lateral notches near their ends, are placed floor above floor at right angles to the blocks 6 to form with them the foundation for each successive floor.

The floor boards 10 are disposed between long blocks 6 on each side of the structure to form successive floors, as clearly indicated in Fig. 6, and the horizontal members 21—23—25 and 26 are assembled at the ends or sides thereof in the same way as previously described.

In each case, at the corners where long blocks 4 and 6 meet, pins 12 are inserted therethrough and extend thereabove to extend into the opening 14 leading into the notch 15 of the corner upright blocks 16. The pins at intermediate points merely extend between the upright blocks 13 and the horizontal blocks 4 or 6, as the case may be. In other words, the corner pins serve to fasten four members together, namely, 4, 6 and two of the blocks 16, whereas the intermediate pins merely fasten two members together, such as 13 and 6.

The structure may be continued or extended to form as many stories as desired, the construction being continued in the same general way. Also, the structure may be diminished or increased in length or breadth as desired by increasing or decreasing the units or the length of members 1, 4, 6 and 7.

However, when towers or set-backs are desired, these, of course, generally speaking, are merely small counterparts of the larger structure and, for this reason, use smaller main horizontal members, such as 8 and 9 of Figs. 16 and 18, which respectively correspond to blocks 4 and 6 of Figs. 10 and 12. Blocks 8 and 9 may also be used in conjunction with blocks 4, 6 and 7 to produce various other combinations of set-backs or towers. Blocks 23 (Fig. 31) have right-angle notches 22 at both ends and at right angles to the illustrated chamfers, and also have a shoulder 24 on both ends, the same as member 25 has on one end. These blocks are to be used in

towers or set-backs or in places where both ends are in contact and at right angles to members 4 or 8 and the like. In Fig. 1, blocks 23 are employed just below the towers (above the fourth story). The remainder of the parts of such towers or set-backs are constructed as previously described for the various sections or bays and as indicated by the proper reference characters in Figs. 1 and 2. The floor boards for such towers will be similar to boards 10, but shorter.

If desired, a simple square section block 18 may be placed on the roof of the topmost tower to simulate a spire or smoke stack, for example.

Referring to Figs. 44 to 47, inclusive, a modified form of lower floor or wall construction is shown, which utilizes a number of the blocks 29 of Figs. 42 and 43 to provide the necessary spacing between window and door openings. As will be noted from the figures, the base blocks 1 and 4 are assembled at right angles as before and the blocks 8 are horizontally assembled just above to fit over the respective pairs of long blocks 4 and 1, except at door openings where a block 29 is first placed on block 1 and block 8 rests on top of the same.

A number of the small blocks 29 is then assembled above each end of the blocks 8 to form the sides of the windows or doors, each block at right angles to the preceding one, and vertical small section blocks 28 are then assembled upon the blocks 8 to provide a division of the window openings. Across the top of these various blocks, a long notched block 7 is assembled and above this a block 4. The vertical corner member 16 and the intermediate vertical members 13 may then be assembled as previously described. Similar construction may be applied, if desired, in the sides of the first story at right angles to that shown in Fig. 44. The perspective view of Fig. 46 and the sectional views of Figs. 45 and 47 will serve to further indicate the construction in question.

Fig. 48 shows how a continuous wall may be provided in the lower or any other story by assembling a number of the vertical blocks 13 corner to corner between the triangular base block 1 and the rectangular intermediate long block 6, as clearly indicated. This same construction may also be used in representing a yard or garden wall or fence.

It will be noted that I have thus provided a relatively small number of blocks which are, with one exception, assembled either horizontally or vertically by means of notches fitting over the angles of other blocks to present corners rather than flat sides to the observer. The effect is very attractive and, in addition, building structures may be quickly and readily built up to considerable heights, thus providing great amusement for the children without being so tedious as to dull their interest. Furthermore, although I have illustrated only two or three different forms of structure, it will be appreciated that a great many other forms may be readily devised in accordance with the ingenuity and ambition of the individual child.

Consequently, I do not wish to be restricted to the specific structural details or arrangement of parts herein set forth, as various modifications thereof may be effected without departing from the spirit and scope of my invention. I desire, therefore, that only such limitations shall be imposed as are indicated in the appended claims.

I claim as my invention:

1. Building parts comprising members multi-angular in cross-section, one member having a notch in an end thereof, the sides of said notch being plane and equally inclined to the axis of that member and meeting at said axis, an angular edge of the other member engaging said notch to provide a connection between said members.

2. Building parts comprising members multi-angular in cross-section, one member having a notch in an end thereof, the sides of said notch being plane and equally inclined to the axis of that member and meeting at said axis to form a line terminating at two opposite corners of said notched member, an angular edge of the other member engaging said notch to provide a connection between said members.

3. Building parts comprising members multi-angular in cross-section, certain members having a notch in each end thereof, the sides of said notches being plane and equally inclined to the axis of the notched member and meeting at said axis, and transverse multi-angular members engaging the ends of said notched members with an angular edge thereof engaging notches of corresponding ends of said notched members.

4. Building parts comprising members multi-angular in cross-section, one member having a notch in an end thereof, the sides of said notch being plane and equally inclined to the axis of that member and meeting at said axis, the other end of said member having a notch similar in form but disposed at right angles to the first named notch.

5. Building parts comprising members multi-angular in cross-section, one member having a notch in an end thereof, the sides of said notch being plane and equally inclined to the axis of that member and meeting at said axis, an angular edge of another member engaging said notch to provide a connection between said members, said other member having a notch formed transversely thereof and symmetrically to an edge thereof, and a third member multi-angular in cross-section engaging said transverse notch with an angular edge thereof within the notch.

6. Building parts comprising a member triangular in cross-section, one side forming a base, and another member multi-angular in cross-section and having a notch in one end thereof, the sides of said notch being plane and equally inclined to the axis of that member and meeting at said axis, said notch engaging the angular edge of said triangular member lying opposite said base thereof to provide a connection between said members.

7. Building parts comprising a member triangular in cross-section, one side forming a base, and another member multi-angular in cross-section and having a notch in one end thereof, the sides of said notch being plane and equally inclined to the axis of that member and meeting at said axis, to form a line terminating at two opposite corners of said notched member, said notch engaging the angular edge of said triangular member lying opposite said base thereof to provide a connection between said members.

8. Building parts comprising members multi-angular in cross-section, the first of said members having parallel-extending notches in each end thereof and a second member having notches in its respective ends extending at right angles to each other, the sides of all of said notches being plane and equally inclined to the axis of the respective notched members and meeting at said axis, and transverse multi-angular members, one of said transverse members engaging correspond-

ing notched ends of said first and second members with an angular edge thereof, a second transverse member having an angular edge engaging the right-angle-disposed notch in the remaining end of the said second member.

9. Building parts comprising members multi-angular in cross-section, the first of said members having parallel-extending notches in each end thereof and a second member having notches in its respective ends extending at right angles to each other, the sides of all of said notches being plane and equally inclined to the axis of the respective notched members and meeting at said axis, and transverse multi-angular members, one of said transverse members engaging corresponding notched ends of said first and second members with an angular edge thereof, a second transverse member having an angular edge engaging the right-angle-disposed notch in the remaining end of the said second member, said second transverse member having a notch formed transversely thereof and symmetrically to an edge thereof, another transverse member having an angular edge engaging the notch in said second transverse member and the remaining end notch in said first member.

10. Building parts comprising members multi-angular in cross-section, one member having a notch in an end thereof, the sides of said notch being plane and equally inclined to the axis of that member and meeting at said axis, an angular edge of the other member engaging said notch to provide a connection between said members, and a pin extending through said notch for retaining said members in position.

11. Building parts comprising members multi-angular in cross-section, one member having a notch in an end thereof, the sides of said notch being plane and equally inclined to the axis of that member and meeting at said axis to form a line terminating at two opposite corners of said notched member, an angular edge of the other member engaging said notch to provide a connection between said members, and a pin extending through said notch for retaining said members in position.

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