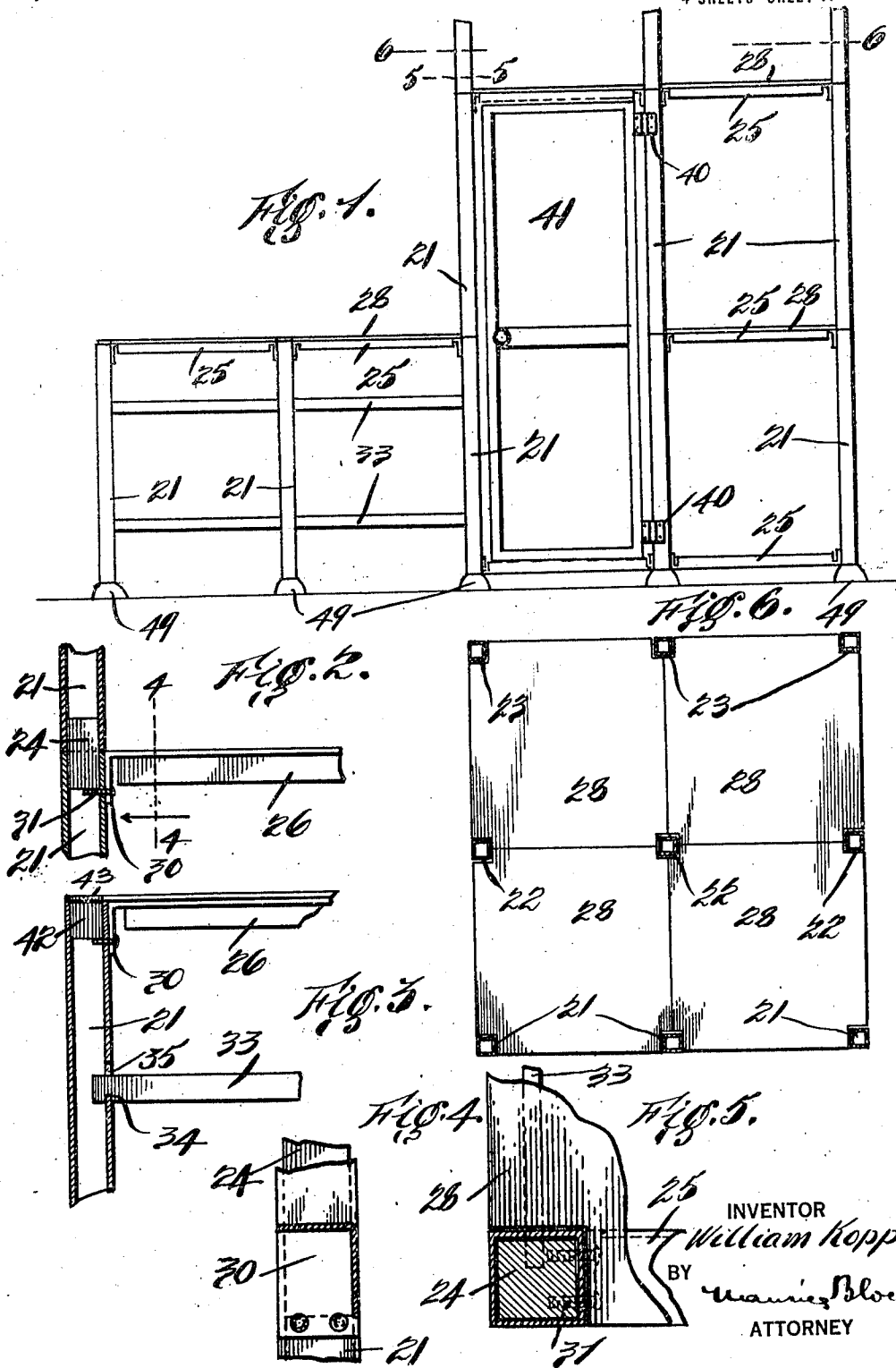


W. KOPP.
COMBINATION KNOCKDOWN STRUCTURE.
APPLICATION FILED MAR. 24, 1919.

1,314,271.

Patented Aug. 26, 1919.

4 SHEETS—SHEET 1.



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4 SHEETS--SHEET 2.



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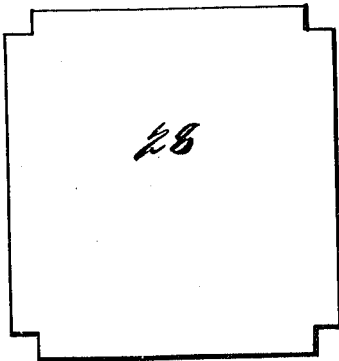
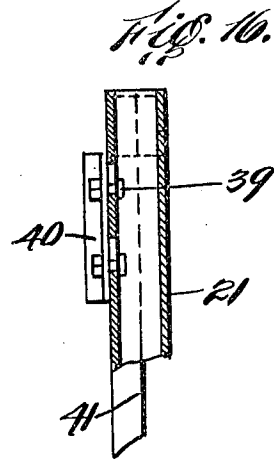
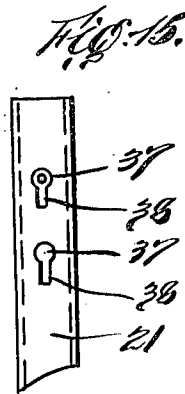
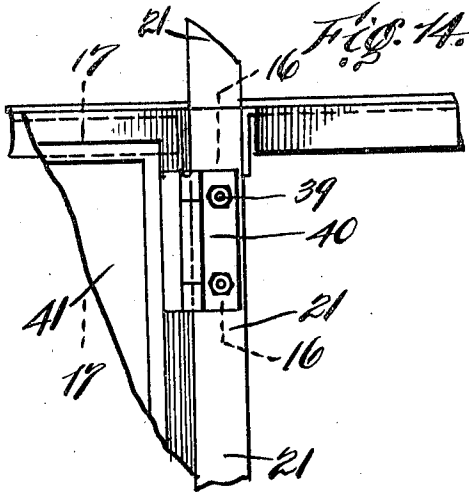


FIG. 19

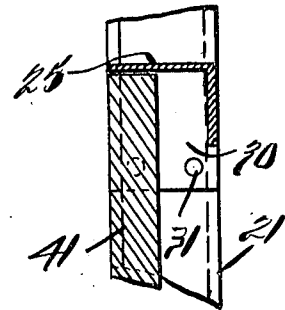


FIG. 17

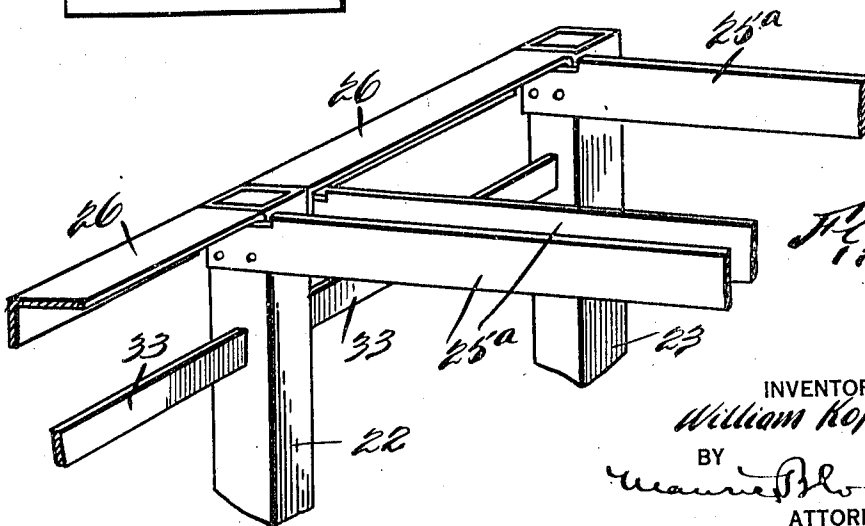


FIG. 18

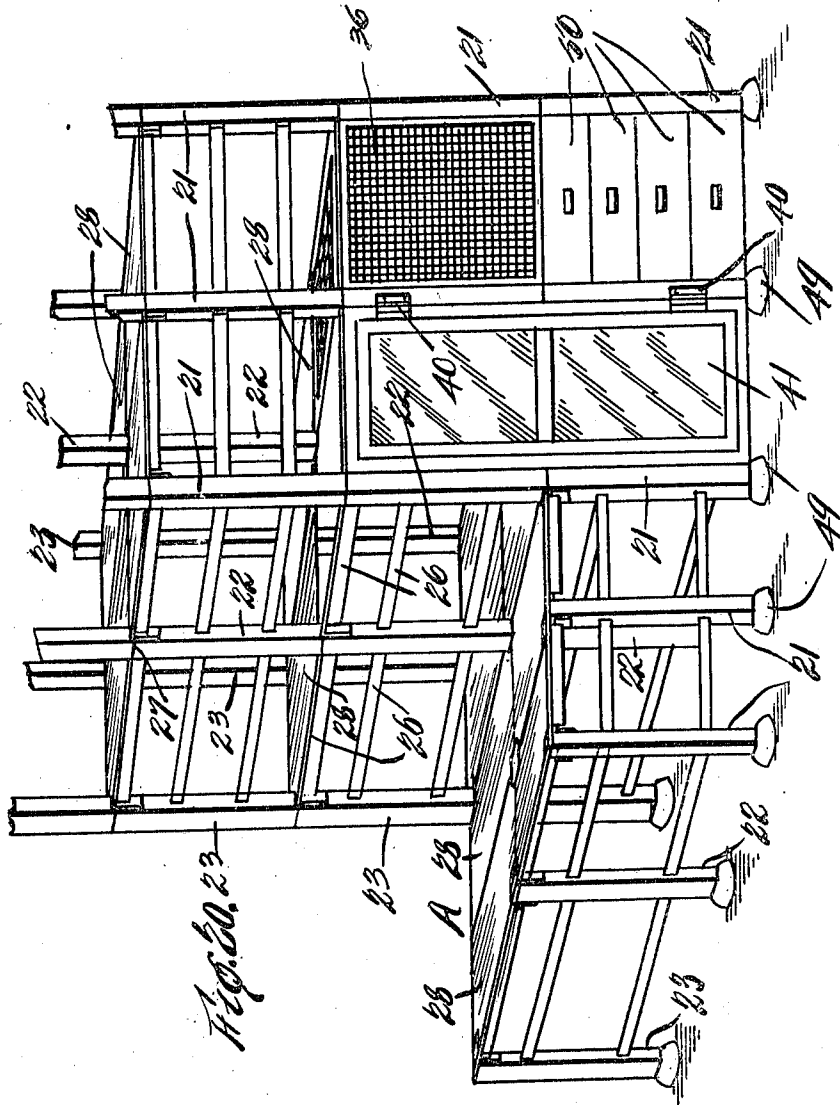
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UNITED STATES PATENT OFFICE.

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COMBINATION KNOCKDOWN STRUCTURE.

1,314,271.

Specification of Letters Patent.

Patented Aug. 26, 1919.

Application filed March 24, 1919. Serial No. 284,805.

To all whom it may concern:

Be it known that I, WILLIAM KOPP, a citizen of the United States of America, residing at Richmond Hill, Queens county, State of New York, have invented certain new and useful Improvements in Combination Knockdown Structures, of which the following is a full, clear, and exact description.

This invention relates to improvements in knockdown structures, the object being to provide a plurality of frame members, including uprights or posts, that can be assembled to form various structures, such as a desk and lockers in combination, lockers only, closets and lockers and booths, etc. One of the objects of my invention is to arrange a combination of elements, such as posts and frame-members that can be set up to form any of the above named combinations without resorting to hammering, or other noisy or complex operations. My improved structure could be set up in any finely appointed room, for bazaar purposes (for instance) without damaging highly polished floors or injuring rugs.

I will now in detail describe my improved combination of parts and manner of assembling the same, the novel features of which I will finally claim. In connection with the description of the device reference will be had to the drawings, wherein:—

Figure 1 is a front view, broken away, illustrating a combination of a counter or desk, shelves, and a closet;

Fig. 2 is an enlarged fragmentary detail view illustrating one manner of combining the posts with transverse frame-members or rails;

Fig. 3 is a similar view illustrating one of the post members, a rail and brace as combined to form a desk or flat structure;

Fig. 4 is a cross sectional view, enlarged, taken on a line 4—4 in Fig. 2;

Fig. 5 is a fragmentary plan view, enlarged, the section being taken on a line 5—5 in Fig. 1;

Fig. 6 is a section plan view, the section being taken on a line 6—6 in Fig. 1, the desk being omitted;

Fig. 7 is a top plan view, illustrating a booth;

Fig. 8 is an end view thereof;

Figs. 9 and 10 are perspective views of a reducer and plug, respectively, for the posts;

Fig. 11 is a fragmentary detail view of one of the post-members;

Figs. 12 and 13 are perspective views of rail-members, which I may use;

Fig. 14 is a fragmentary detail view, enlarged, illustrating, one of the post members, adjacent ends of rail-members, and a portion of a door;

Fig. 15 is a front view of the front post-members, illustrating the opening for attaching a door;

Fig. 16 is a vertical sectional view, the section being taken on a line 16—16 in Fig. 14;

Fig. 17 is an enlarged sectional view, the section being taken on a line 17—17 in Fig. 14;

Fig. 18 is a fragmentary perspective skeleton view illustrating the manner of assembling the members of the structure;

Fig. 19 is a detail plan view of a form of shelf plate; and

Fig. 20 is a perspective view illustrating the structure indicated in Fig. 1 more completely.

To carry out my invention, I provide a plurality of post-members or uprights 21 which are arranged to be located at the front of the structure (see Fig. 20), a plurality of similar tubular uprights 22 for the center of the structure, and a plurality of uprights 23 for the back of the structure. Each upright 21, 22 and 23 is relatively short, the length being about equal to the usual distance between the shelves of a cabinet, and is arranged to be superimposed upon a similar upright. In other words, a structure of any desired height can be formed by placing the required number of uprights end to end. To maintain the uprights assembled in this position, I provide blocks 24 (see Fig. 2) of sufficient size to be inserted within the uprights. The blocks or connecting means 24 will maintain the posts or uprights rigidly connected and said uprights will withstand ordinary stresses. To divide the structure into a plurality of sections, so to speak, I provide transverse supporting braces 25 and similar braces 26 which are disposed longitudinally of the structure. The braces 25 and 26 are alike in structure and connect the uprights one to the other, said braces being located preferably at the joint 27, or meeting point of the uprights. These braces may be formed in

a variety of styles, for instance as illustrated in Figs. 2 and 4, such a structure being illustrated throughout the drawings, or as illustrated in Fig. 12. The form of the braces is immaterial so long as they are arranged to support a shelf-plate, such as is indicated by 28 (see Fig. 19). In any event, these braces 26, or the structure 29 in Fig. 12, will be provided at the ends with means to detachably secure the braces, at the ends, to the uprights. In this instance, the braces are provided with end plates 30, carrying screws 31, to engage threaded openings 32 in the uprights or posts (see Fig. 11.). Pins may be used instead of screws in some instances. The screws 31, in this instance, not only secure the braces to the uprights, but also act to prevent the blocks 24 from dropping. The screws 31 act as supports for the blocks. I do not limit myself to the precise form of brace so long as it is strong enough and is arranged for separable connection with the braces.

In combination with the braces, which I will term bracing-supports, I employ locking bars 33 which adjacent each end are provided with recesses 34 (one only being shown) to engage one wall of the tubular posts. To cause these bars to engage the posts, I provide said posts with slots 35 long enough to permit of the insertion of the ends of the bars 33. After the ends of the bars 33 have been inserted in the slots, they will be allowed to drop to cause the recesses 34 to engage the wall of the adjacent post. Gravity will maintain these bars in position. Each post or upright will be connected to another post by two of these bars, in this instance. Instead of providing the angular supporting braces 25 to connect the posts transversely of the structure, I may provide flat supporting braces 25^a such as is illustrated in Fig. 13, and also illustrated in use in Fig. 18. The ends of these flat braces will be provided with openings to aline with the openings in the end plate 30 of the braces, and hence can be secured by the same screws 31. After the braces and locking-bars have been positioned, the structure will be divided into sections, which can be transformed into shelves, by placing the plates 28 upon the supporting braces, or into lockers by placing screens 36 (Fig. 20) into the (in this instance) square spaces formed by the cross supporting-braces and the uprights. The braces 25 and 26 will support either screens 36 or plates 28, as may be desirable. The screens can be placed horizontally and vertically, the vertical screens being held in any desirable manner. The horizontal screens will remain in position by gravity. The front uprights 21 will be provided with means for the attachment of a door. In this instance, I provide the said front posts or

uprights with openings 37 and communicating slots 38 to receive bolts 39 to secure the hinges 40 of a door 41 to said uprights (see Figs. 14, 15 and 16). To hang the door 41, the heads of the bolts 39 will be passed through the slots 37; the bolts will then be passed into the slots 38. After the bolts have been passed into the slots 38, the hinges can be caused to engage the bolts, whereupon the nuts can be applied to the bolts. When a door is used, to provide a closet, the cross supporting braces and locking-bars will be omitted from this portion of the structure. The spaces above the door, at the rear and sides, will, however, be filled by screens or plates.

Fig. 1 illustrates a structure including a counter or desk. The desk or counter is formed by utilizing the lower uprights only and covering the same by means of the plates 28. In the event of utilizing the lower uprights, the open upper ends thereof will be provided with a filling-block 42 and cover-plate 43. These blocks will be used to fill the open ends of the uprights in any event; or, in other words, in any structure, as the topmost post or upright of a plurality of superimposed posts will have an open upper end.

To form a booth, as illustrated in Figs. 7 and 8, I employ a sufficient number of members 21, 22 and 23, connect same by the braces 25 and 26 and locking-bars 33 and cover the tops thereof by means of the plates 28, the same as for producing a counter or desk. In addition to these elements, I employ a railing indicated by B in Fig. 8, the railing consisting of standards 44 carrying a fitting 45 at the top thereof. The fitting will be connected by horizontal railing-members 46. To connect the standards to the upper ends of the uprights 21, I employ reducing blocks 46^a (see Fig. 9), which engage the upper end of the corner posts of the booth. The blocks 46^a will each be provided with a socket 47 to receive the lower end (in this instance, the square lower end) of the standards 44.

It will be evident from the foregoing description that I am able to form a variety of structures by merely assembling the parts to suit the structure to be formed. In other words, I can form a counter or desk, a booth, a combination of a closet or closets, lockers and shelves, lockers only, or shelves only, by merely assembling certain members of the combination.

To prevent injury to floors, rugs or the like, I provide the bottom post-members with bases 49, having a smooth under surface. If desirable, one of the sections, or spaces between the braces and posts, can be filled by drawers 50 (see Fig. 20).

Wherever in the specification and claims the word "tubular" is employed, same is un-

derstood to cover also any hollow structure, whether circular, square, hexagonal, etc.

Having now described my invention, what I claim is:—

- 5 1. The combination of a plurality of relatively short tubular posts, a block arranged to be removably inserted in the end of one post to enter the adjacent end of a superimposed post, whereby said posts are held
10 together, braces removably connected at the ends thereof to said posts, and locking means connecting said posts.
2. The combination of a plurality of relatively short tubular posts, a block arranged
15 to be removably inserted in the end of one post to enter the adjacent end of a superimposed post, whereby said posts are held together, braces connecting said posts and
20 screws to secure the braces and posts together, said screws passing through the adjacent wall of its adjacent post, the inner end of said screws being located under and in contact with the adjacent end of the connecting blocks for the posts, whereby said
25 blocks are prevented from dropping.
3. The combination of a plurality of tubular posts, means carried by the posts, at their upper ends, to support flat plates or the like, whereby the structure will have
30 a flat top, reducing blocks carried by the posts at the upper ends thereof, each block being provided with a socket, a railing standard having its lower end inserted in the socket in the blocks carried by the corner posts of the structure, rails connecting
35 said standards at their upper ends, and filling-blocks inserted in the upper end of all the remaining posts of the structure.
4. In a knock-down structure, the combination of a plurality of tubular post-members, braces to releasably engage said post-

members, locking bars to also releasably engage said post-members, filling-blocks to be inserted in the open end of any of said posts, connecting blocks to connect any of
45 said posts in superimposed position, vertically disposed filling plates or the like held between certain of the braces and posts to provide lockers or closets, a door, and means to releasably connect the door and certain of
50 said posts.

5. In a knock-down structure, the combination of a plurality of tubular post-members, braces to releasably engage said post-members, locking bars to also releasably
55 engage said post-members, filling blocks to be inserted in the open end of any of said posts, connecting blocks to connect any of said posts in superimposed position, vertically
60 disposed filling plates or the like held between certain of the braces and posts, to provide lockers or closets, a door, means to releasably connect the door and certain of said posts, and plates arranged to be
65 laid upon the said braces after the structure has been set up for use.

6. The combination of a plurality of releasably connected post-members, braces releasably engaging said posts, locking bars also releasably engaging said posts, and
70 plates or panels to fill the spaces between said braces, said panels being releasably held in position, vertically disposed filling plates or the like held between certain of the braces and posts to provide lockers or
75 closets.

Signed at New York city, N. Y., this 22 day of March 1919.

WILLIAM KOPP.

Witnesses:

MAURICE BLOCK,
EDWARD A. JARVIS.