

J. HARTMANN.
SHELF FRAME.
APPLICATION FILED MAR. 25, 1913.

1,065,045.

Patented June 17, 1913.

Fig. 1.

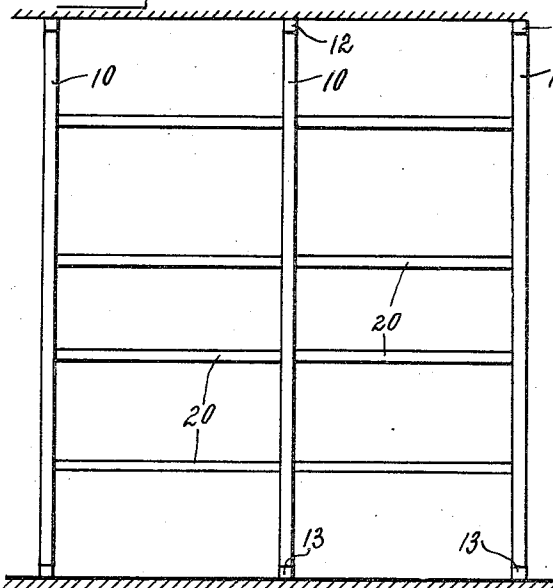


Fig. 2.

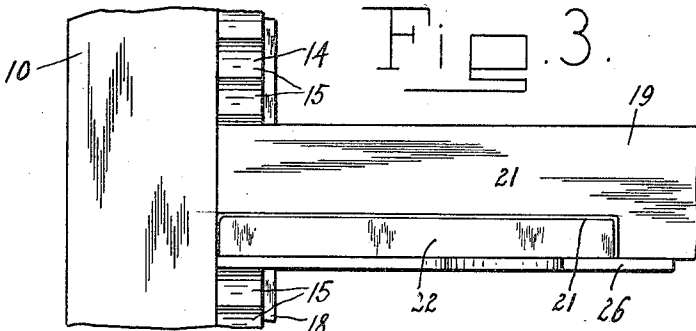
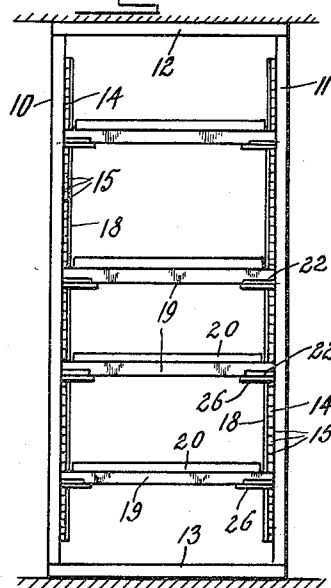


Fig. 4.

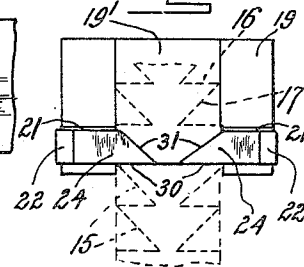


Fig. 5.

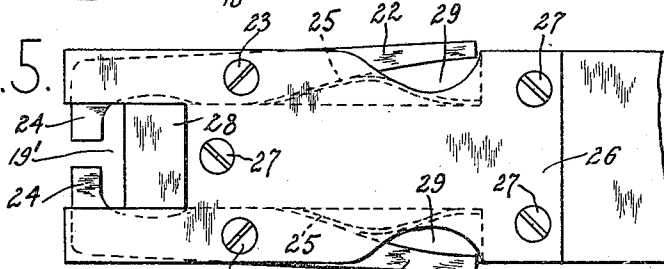
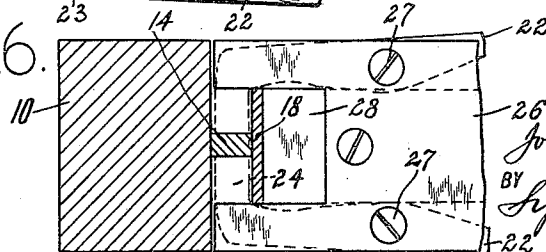


Fig. 6.



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SHELF-FRAME.

1,065,045.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN HARTMANN, a citizen of the United States, and resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Shelf-Frames, of which the following is a specification.

The present invention relates to improvements in shelf frames.

One of the objects of the invention is to provide a vertically adjustable shelf frame which will permit the shelves supported thereby to be set at varying distances from each other according to the requirements.

Another object of the invention is to produce a frame of this type that prevents an accidental shifting of the shelves thereon, or in other words one that holds the shelves in fixed positions against unintentional disengagement.

A further object of the invention is to construct a shelf frame of this type which is simple in construction, efficient in operation, and which permits the shelves to be easily shifted and set to their proper positions.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter fully described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and details of construction within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a shelf, constructed in accordance with the present invention; Fig. 2 is a side elevation thereof; Fig. 3 is a side elevation, on an enlarged scale, of a portion of one of the shelf frame uprights and a portion of one of the shelf supports; Fig. 4 is a front elevation of one of the shelf supports; Fig. 5 is a bottom plan view of one end of a shelf support; and Fig. 6 is a bottom plan view, partly in section, of one end of a shelf support in en-

gagement with one of the shelf frame uprights.

In the drawings, the numerals 10 indicate the front posts or uprights of the shelf frame, and the numerals 11 the rear posts or uprights thereof. Each front post is connected with its corresponding rear post by an upper tie-bar 12 and a lower tie-bar 13. The posts and tie-bars may be made of any suitable material, for instance wood, the lower tie-bars being attached to the floor and the upper tie-bars to the ceiling of the room in which the shelf frame is located. This arrangement is preferable, although the several sections of the frame may be connected and held in place by suitable braces instead of being fastened to the floor and ceiling.

Upon the rear face of each front post 10 is held a longitudinal strip 14, upon each side of which is formed a row of ratchet teeth 15. These teeth have horizontal upper faces 16 and slanting faces 17, the slanting faces of the two rows of teeth inclining toward each other, as clearly shown in dotted lines in Fig. 4 of the drawings. In rear of each strip 14 runs throughout the length thereof a band 18, which is attached by any suitable means to the strip 14, or may be made integral therewith. The width of this band corresponds to that of the strip 14, for a purpose hereinafter to be described. Upon the front face of each rear post 11 is in a similar manner held a strip 14, provided with ratchet teeth 15 upon its sides, the arrangement and configuration of which correspond to those on the strips on the front posts 10. A band 18 is attached to the strip 14 on each rear post 11, corresponding in shape to those on the front posts 10.

The shelf supports are indicated by the numerals 19, each comprising a bar, one end of which is in engagement with a front post 10 and the other one with a rear post 11. The shelf boards 20 rest upon the supports 19, as clearly shown in Figs. 1 and 2 of the drawings. Inasmuch as the two ends of each support, which are in engagement with the posts 10 and 11, are alike in construction, only one of the same will be described in connection with Figs. 3 to 6, inclusive. As appears from these figures, an end of a support 19 is provided with an oblong-shaped notch 19', which is of a dimension to accommodate a bar 14 and a strip 18.

In the underface of the end portion of the support are provided two marginal longitudinal recesses 21, in each of which is seated a clamping lever 22, which is pivoted at 23 to the said support. These levers are provided with jaws 24, 24, which are projected into the notches 19' by means of springs 25, held in the recesses 21. The ends of the supports 19 are strengthened by metallic plate members 26, attached to said ends by means of screws 27, or otherwise. These plate members are provided with slots 28, registering with the notches 19', and furthermore in their sides with notches 29 to permit the free ends of the levers 22 to be forced inward by the fingers of the operator, in order to withdraw the jaws 24 from the notches 19'. The jaws 24 are provided with horizontal edges 30 and with inclined edges 31, corresponding to the similar faces of the teeth 15, with which they are to be engaged.

In use, the shelf supports 19 are engaged with the posts 10 and 11, the notches 19' in the ends of said supports accommodating the longitudinal strips 14 and the bands 18, the springs 25 causing the jaws 24 of the levers 22 to engage the ratchet teeth 15 upon the strips 14. Inasmuch as the bands 18 are arranged in front of the jaws 24, a transverse displacement of the shelf supports cannot take place. If it is intended to change the position of a shelf support 19 on the posts 10 and 11, and more particularly if said support is to be shifted downward, the free ends of the levers 22 are forced inward against the tension of the springs 25, whereby the jaws 24 will be disengaged from the teeth 15, thereby permitting the support to be shifted into the proper position, in which the levers are released, the springs 25 then causing an engagement of the jaws 24 with the ratchet teeth on the strips. Obviously, if a support 19 is to be shifted upward, the jaws 24 need not be disengaged from the teeth upon the strips 14 for the reason that the faces 17 on the teeth are slanting.

From the foregoing it will be observed that the shelf supports can be easily set at varying distances from each other, the de-

gree of adjustment depending upon the sizes of the teeth. The shelves are held in fixed positions against unintentional disengagement inasmuch as the faces 16 of the teeth 15 on which the jaws 24 rest are horizontal, preventing thus the downward movement of the shelves, their upward movement being impossible by reason of the weight resting on the shelf boards. The shelf supports and boards can be easily shifted to any position even without first removing the articles resting on the boards 20.

What I claim is:—

1. In a shelf frame, the combination with a front frame post, of a rear frame post connected therewith, two rows of ratchet teeth formed upon each of the facing surfaces of said frame posts, a shelf support provided with notches in its ends accommodating said ratchet teeth, two clamping levers pivotally attached to each end of said shelf support provided at their outer ends with jaws, and springs upon said shelf support for causing said jaws to project into said notches and to engage said ratchet teeth.

2. In a shelf frame, the combination with a front frame post, of a rear frame post connected therewith, longitudinal strips upon the facing surfaces of said frame posts, a row of ratchet teeth formed upon each side of said strips, a band extending throughout the whole length and width of each of said strips, a shelf support provided with notches in its ends accommodating said strips and said bands, two clamping levers pivotally attached to each end of said shelf support provided at their outer ends with jaws, and springs upon said shelf support for causing said jaws to project into said notches and to engage said ratchet teeth.

Signed at New York, in the county of New York and State of New York, this 14th day of March, A. D. 1913.

JOHN HARTMANN.

Witnesses:

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