Aug. 26, 1930. E. OHNSTRAND 1,774,235

CABINET

Filed Nov. 12, 1924 2 Sheets-Sheet 1

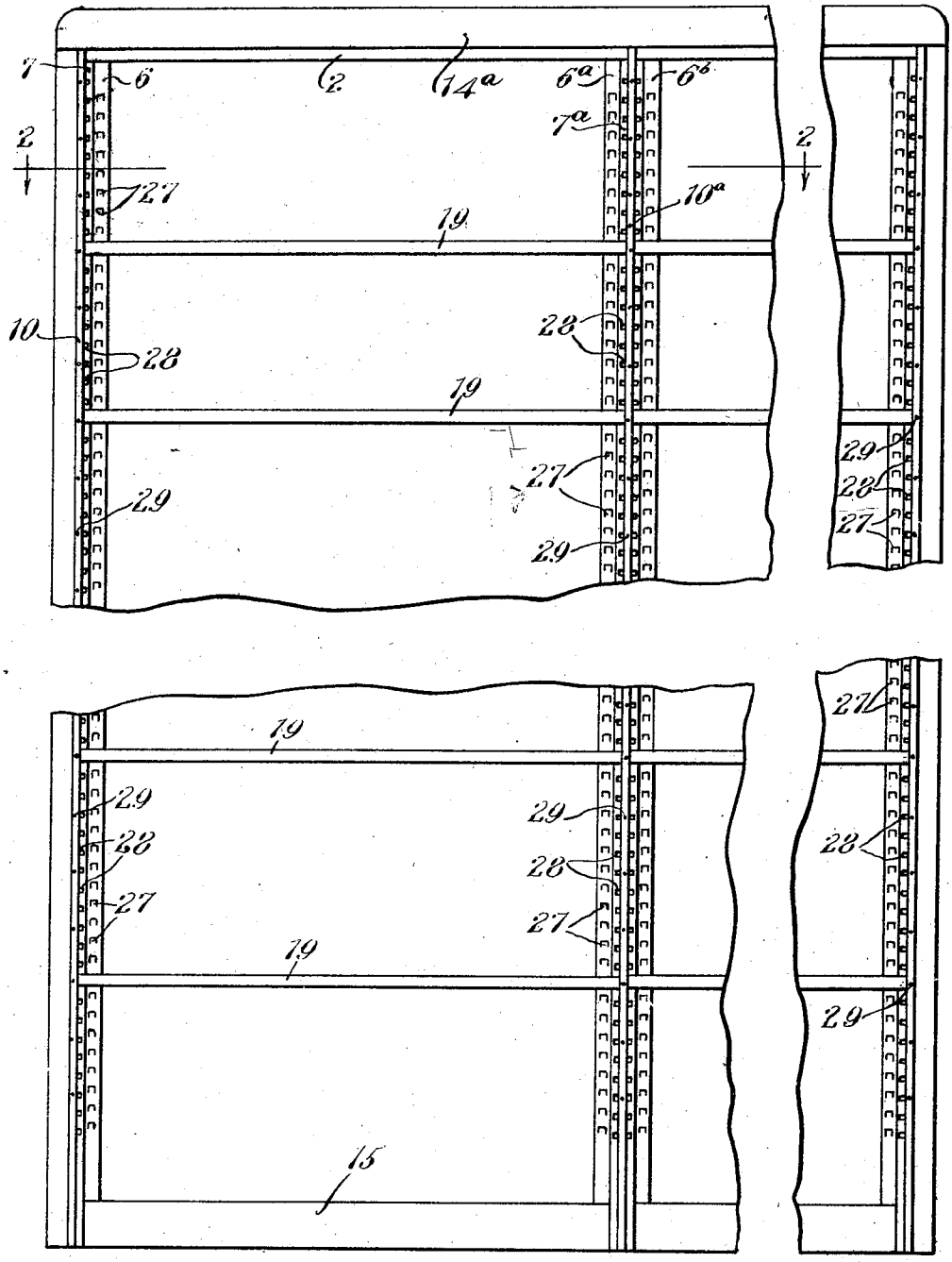


Fig. 1.

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Att'ys.

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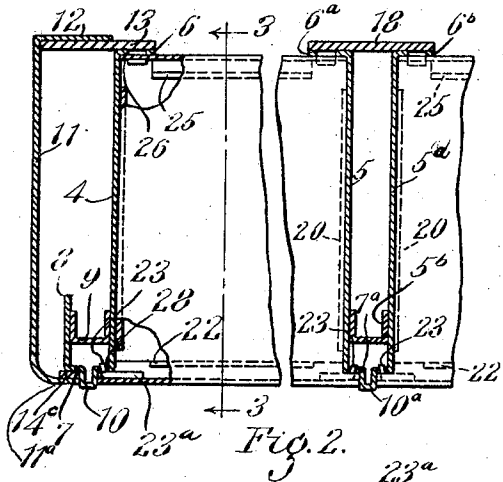


Fig. 2.

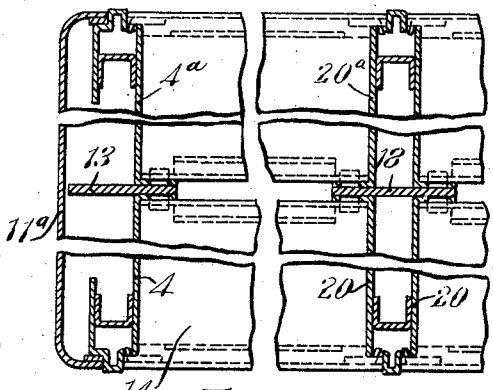


Fig. 6

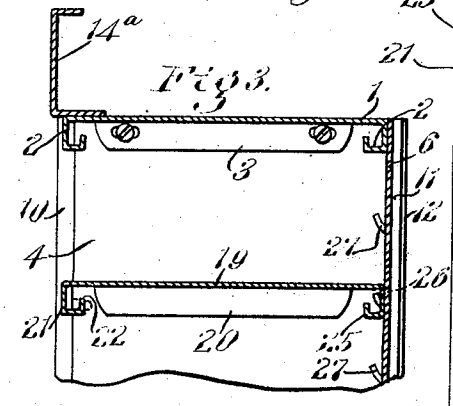


Fig. 3.

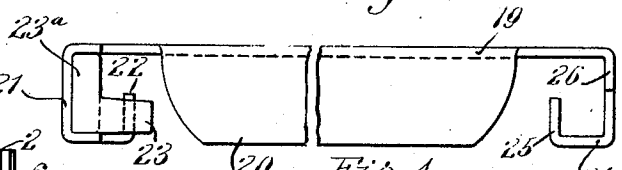


Fig. 4.

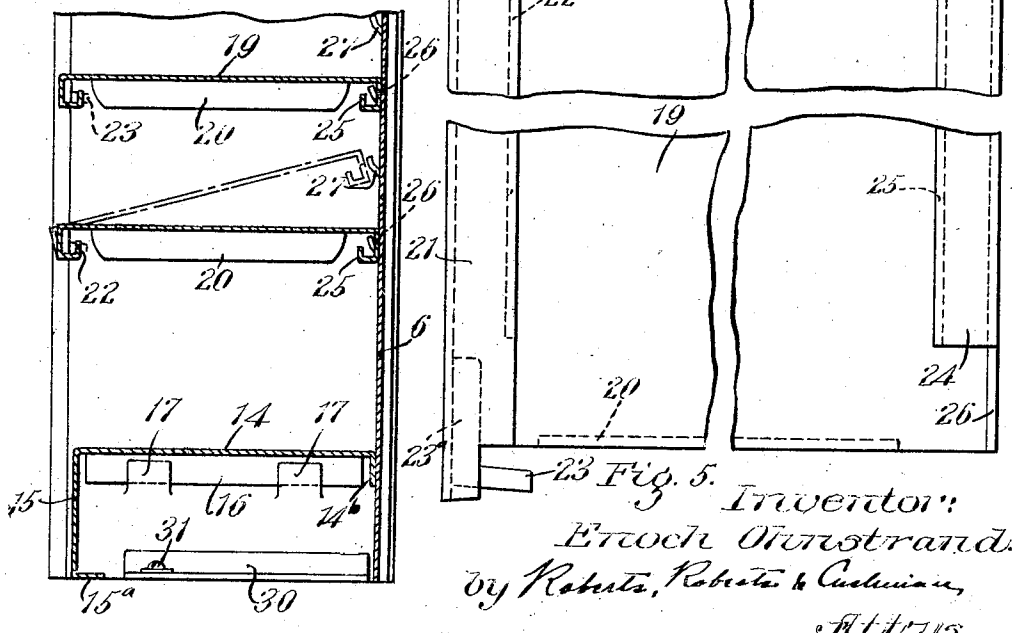


Fig. 5.

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Patented Aug. 26, 1930 1,774,235

UNITED STATES PATENT OFFICE

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CABINET

Application filed November 12, 1924. Serial No. 749,417.

This invention relates to metal cases or cabinets having adjustable shelves disposed in horizontal planes for supporting stacked sheets of paper, books, bundles and bulky records, and objects of the invention are to provide a cabinet having the new and improved features of construction and arrangement hereinafter described.

The invention is shown by way of illustration in the accompanying drawings in which:

Fig. 1 is a fragmentary front elevation of a cabinet constructed in accordance with the invention;

Fig. 2 is a fragmentary section on the line 2—2 of Fig. 1;

Fig. 3 is a vertical section on the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary side edge view of a shelf;

Fig. 5 is a fragmentary elevation of a shelf; and

Fig. 6 is a fragmentary cross-section of a double range of stacks.

The embodiment of the invention illustrated comprises a sheet metal case or cabinet consisting of a top plate 1 having integral, depending, channel-shaped end flanges 2 and depending side flanges 3 which are fastened to the upright end walls 4 and 5 of the cabinet as by screws. The cabinet may be securely fastened to the floor by an angle piece 30 fixed to the end walls in any suitable manner and to the floor as by screws 31. The rear end of the upright wall 4 is provided with an inturned flange or attaching strip 6 and the front end of the wall 4 is formed with an outwardly turned front wall 7, the end portion of this wall being provided with a flange or outer wall 8 which extends parallel to the end wall 4. A reenforcing channel strip 9 is secured as by welding to the inside of the end wall 4 and outer wall 8 for strengthening purposes. As most clearly indicated in Fig. 2, the metal of the front wall 7 is stamped or otherwise forced outwardly to form a rectangular ridge or guiding projection 10 which extends the entire length of wall 4.

In order to present a finished appearance to the ends of the cabinet, a false end or end panel 11 closes each end of the cabinet and is provided with an inturned end wall 12 which is welded or otherwise suitably secured to an upright reenforcing panel 13, the inturned flange 6 of the end wall 4 being fixed in any suitable manner to the opposite face of the panel 13. The front end of the end wall 11 is provided with an inturned flange 11^a, the corner thereof being rounded to eliminate sharp corners, and this flange is secured in any suitable manner to a strip 14^c which is preferably welded to the front wall 7. Secured to the top plate 1 as by bolting and extending from end to end of the cabinet is an upright facing strip 14^a of channel shape which gives a finished appearance to the top of the stack.

Mounted on the lower portion of the cabinet is a shelf 14, having an integral, depending front wall 15, which is provided with an inturned supporting flange 15^a, and a depending flange 14^b at the rear end which abuts against the attaching flange 6 of the end wall 4. The sides of the shelf 14 are provided with integral depending flanges 16 which engage tongues 17 struck up from the end walls 4. It will be evident that the bottom shelf may be readily attached to and detached from the cabinet and the front wall 15 gives a finished appearance to the bottom of the cabinet.

A central partition for the cabinet comprises a front wall 7^a integral with parallel upright side walls 5 and 5^a, which have outwardly turned flanges 6^a and 6^b respectively, serving as attaching strips for one end of the shelves as will be hereinafter described. A reinforcing channel 5^b is secured as by welding to the side walls 5 and 5^a for strengthening purposes. To reinforce the flanges 6^a and 6^b a strengthening panel 18 may be fixed as by welding to the back of both flanges. Suitably formed in the front wall 7^a is a guiding ridge 10^a which is similar to the ridge 10 on the front wall of the end wall 4 and extends parallel thereto. It will be understood that any suitable number of partitions constructed as described may be employed according to the desired size of the cabinet.

Any suitable number of shelves may be

supported in the cabinet and each shelf comprises a plate 19 having depending side flanges 20, the front end being provided with a channel-shape flange 21 which has an upstanding lip 22 intermediate the ends of the flange adapted to be grasped to attach or detach the shelf. As indicated in Fig. 5, the flange 21 extends outwardly a slight distance beyond the side edges of the shelf and fixed as by welding to the inside of the outwardly extending flanges are blocks 23^a with which pins or fingers 23 are integral, the fingers extending from the block toward the rear end of the shelf. As indicated in Fig. 5 the fingers 23 are inclined outwardly forming approximately an angle of 99° with the flange 21, this inclination not being great enough for the fingers to be damaged when the shelves are removed from the cabinet and supported on their side. The rear end of the plate 19 is formed with a depending channel-shaped flange 24 intermediate the sides thereof, and the opposite end portions of the rear edge of the plate 19 are provided with depending attaching flanges 26.

In order to support the shelves in the cabinet, tongues or ears 27 are struck out of the metal in the attaching flanges 6 and 6^a. The tongues or ears 27 are inclined upwardly and are arranged vertically in spaced relation, a tongue on the strip 6 being directly opposite from a tongue on the strip 6^a. Formed in the front walls 7 and 7^a are apertures 28 which are also arranged in spaced relation, an aperture in the wall 7 being directly opposite from an aperture in the wall 7^a. It will be observed that a pair of apertures 28 in the walls 7 and 7^a are laterally offset from but in the same horizontal plane as a corresponding pair of tongues 27.

In order that the shelves may be readily attached to the cabinet to assume level horizontal positions indentations 29 (preferably made by the combination die at the time the upright is formed) may be formed in the guiding projections 10 and 10^a at conveniently spaced intervals so that an aperture 28 on one wall may be readily located with reference to a corresponding aperture on the opposite wall. This eliminates liability of the shelves being applied to the cabinet to assume inclined positions and overcome tedious searching for corresponding supporting elements.

The shelves are attached to the cabinet by inserting the fingers 23 into a corresponding pair of apertures 28 in the walls 7 and 7^a, the rear end of the shelf being tilted upwardly for the flanges 26 to clear a pair of tongues 27 in the same horizontal plane as the pair of apertures. By inclining the fingers 23 outwardly as indicated it is unnecessary to make the holes receiving them of exactly the same size but they are preferably larger than the fingers. When the fingers are inserted into their respective holes they bind against the sides thereof, this frictional engagement not only holding the front of the shelves securely in position but also holding the central partition and end walls together. Thereafter the rear end of the shelf is allowed to swing downwardly about fingers 23 as pivots to bring the flanges 26 into engagement with the struck-up supporting tongues 27. It will be observed that the tongues 27 are so shaped and positioned that a shelf resting on a pair of tongues may be swung upwardly clear of the tongues thereabove. As attached the opposite edges of the front end of the shelf abut against the guiding ridges 10 and 10^a which project a slight distance therebeyond thus to cover the sharp edges and give a neat appearance.

In order to detach the shelf the rear end is swung upwardly a sufficient distance to disengage the flange 26 from the tongues 27 so that the shelf may be moved horizontally to disengage the fingers 23 from the apertures 28. It will thus be apparent that the end supports for adjustable shelves in cabinets of the type disclosed may be arranged to give any desired spacing for the shelves. The number and position of the tongues and apertures may be changed in accordance with the requirements to enable the shelves to be arranged in any desired relation.

To increase the depth of the cabinet the construction above described may be duplicated on the opposite side of the panels 13 and 18, an end wall 4^a being fixed to the panel 13 in alignment with the wall 4 and a partition 20^a being fixed to the panel 18 in alignment with the front partition. The shelves 14 are supported in the cabinet after the manner above described, and the ends are closed by end panels 11^a fixed to the ends of the end walls 4 and 4^a respectively.

An outstanding characteristic of the invention consists in the unique end supports for the shelves whereby liability of the shelves being displaced by very heavy burdens is eliminated. The marked simplicity of these supports as well as of the shelves contributes materially to the production of an inexpensive cabinet. Another feature of the invention resides in the provision of indicators to enable corresponding supports to be located in a simple manner, thereby overcoming objections to supports of a similar character which ordinarily require irksome searching for correspondingly positioned supports. Another feature consists in the shape and position of tongues 27 whereby a shelf resting upon one pair of tongues may be swung upwardly past the tongues thereabove (see Fig. 3), thus facilitating the insertion and removal of shelves.

Although I have shown and described a construction of the cabinet or stack which is the best form known to me at this time, it will

be understood that numerous changes in details of construction and arrangement, and in selection of materials may be made without departing from the spirit of the invention especially as defined in the appended claims.

I claim:

1. A sheet metal cabinet comprising a frame having side walls and a back member, the front ends of the side walls having recessed shoulders extending vertically thereof and elongated vertical guide ridges offset from the side walls by said shoulders, a horizontally disposed shelf in said frame, the front end of the shelf having laterally extending projections adapted closely to fit between said guide ridges, rearwardly extending fingers, fixed to said projections, said shoulders having apertures to receive said fingers and said fingers being inclined outwardly, frictionally to bind against the sides of the apertures, whereby the front of the shelf is restrained from accidental disengagement from the frame, and means associated with the back member to support the back end of the shelf.

2. A sheet metal cabinet comprising a frame having side walls and a back member, the front end of each of the side walls having a recessed shoulder extending vertically thereof and a vertical guide ridge offset therefrom by said shoulder, a horizontally disposed shelf in said frame having a depending flange at its front end extending outwardly beyond the sides of the shelf and adapted closely to fit between said guide ridges, rearwardly extending fingers fixed to the projecting portions of said flange at a short distance from the ends thereof, the inner ends of said fingers being spaced from the sides of the shelf, said shoulders having apertures to receive said fingers to support the front of the shelf and said fingers being inclined outwardly to bind against the sides of the apertures whereby the front of the shelf is restrained from accidental disengagement from the frame, and means associated with the back members of the frame to support the back end of the shelf, so that the shelf may be detached from the frame by disengaging the back member from said supporting means and thereafter withdrawing the fingers from the apertures in said shoulders.

3. A cabinet having in combination, side walls formed at the front edges with outwardly extending flanges and at the rear edges with inwardly extending flanges, said outwardly extending flanges being formed with a series of openings extending in aligned relation parallel to the side walls, a series of upwardly extending tongues in aligned relation on said inwardly extending flanges, and a shelf mounted in said cabinet between said walls having a lateral downwardly extending flange on its rear edge engaged with a tongue on the flange of each wall and rearwardly extending tongues on opposite ends of the front edge engaged in an opening in each of the outwardly extending flanges, said tongues, flanges and openings being the only means for mounting said shelf between said walls, and the flange on the rear end of said shelf having interfitting engagement with said tongues in a direction at right angles to engagement of the tongues thereon with said openings and retaining the front portion of the shelf in rigid engaged relation with said side walls.

4. A cabinet having in combination, side walls, and a shelf mounted between said side walls, said shelf having parts at the forward side edges freely interengaged with parts on said side walls, said parts being engageable only by an inward movement of said shelf in said cabinet, said shelf having parts at the rear end engaged with parts at the rear edges of said side walls, said parts at the rear being engageable only by a downward movement of said shelf in said cabinet, the parts at the rear upon engagement automatically locking said shelf in said cabinet by preventing outward movement of said shelf in said cabinet and my maintaining the parts at the front in engaged relation, said parts at the front maintaining the front of the shelf against vertical displacement in said cabinet, all of said parts forming the only connection between said side walls and said shelf.

5. A cabinet having a side member, comprising a sheet metal inner side wall, a laterally extending flange on the front edge of said inner side walls, said flange having a ridge formed therein to form a shoulder offset from the side wall, an outer side wall of sheet metal spaced from said inner side wall and secured to said flange at the front edge, said outer side wall having a laterally extending flange on the rear edge, and means securing said last-mentioned flange to the rear edge of said inner side wall.

6. A cabinet having a side member, comprising a sheet metal plate formed to provide a side wall, a flange on the front edge extending laterally from said side wall, an outer wall portion at the edge of said flange portion in spaced parallel relation to said side wall, a strip securing said outer wall to said side wall at the front portion spaced inwardly from said flange, a flange at the rear end of said side wall extending laterally in an opposite direction from the first-mentioned flange, and shelf supporting means formed in said flanges.

7. A cabinet having a partition, comprising a single piece of sheet metal formed to provide a pair of spaced parallel side walls, and a front wall portion joining the front edges of said side walls, laterally extending flanges at the rear edges of said side walls, and a strip member connected to said flanges

to maintain said side walls in spaced parallel relation at the rear edges thereof.

8. A cabinet having a shelf member comprising a sheet metal plate member formed with a depending flange at the rear end, a channel member formed at and depending from the front end, said channel member having the ends projecting beyond the sides of said plate member, and rearwardly extending tongues mounted on the ends of said channel member in spaced relation from said plate member.

9. A cabinet having in combination, side wall members and shelf members, one of said members having projections at one end for engagement in openings in the other member only by movement in the normal plane of the shelf members in the cabinet, and interfitting parts at the opposite ends of said members engageable and disengageable only by movement laterally to the normal plane of said shelf, said interfitting parts in engaged relation automatically locking said shelf in said cabinet by preventing outward movement of said shelf in said cabinet and by preventing disengagement of said projections from the openings, said projections maintaining the front of the shelf against vertical displacement when thus locked.

Signed by me at Ilion, N. Y., this 13th day of October, 1924.

ENOCH OHNSTRAND.