(No Model.)

G. M. WELKER.

SHELF.

No. 588,519. Patented Aug. 17, 1897.

Fig. 1.

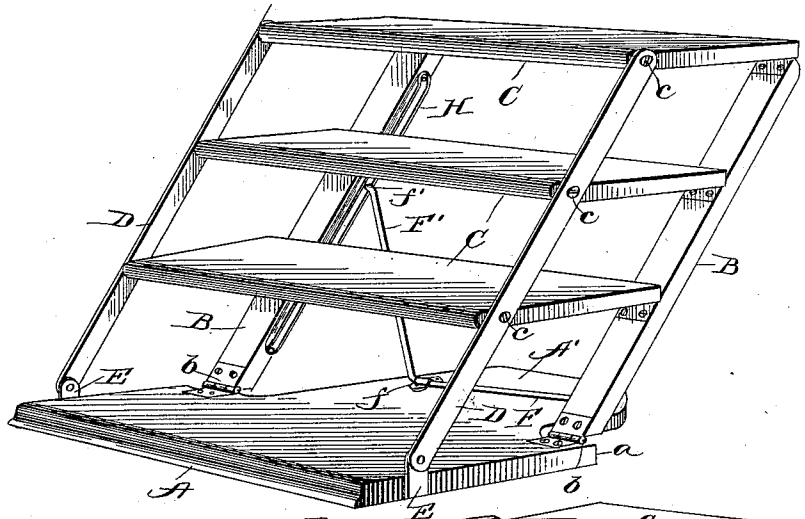


Fig. 2.

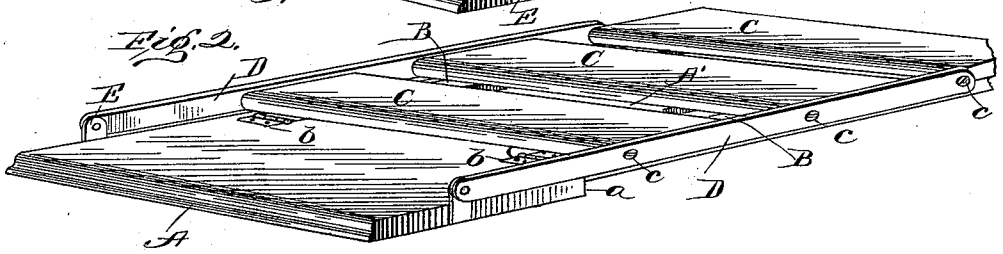


Fig. 3.

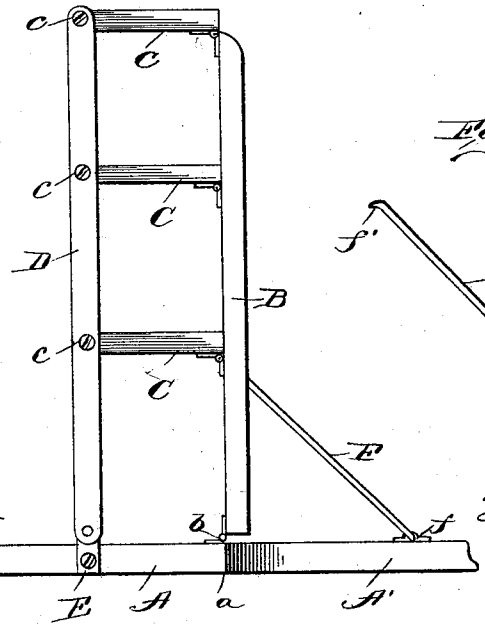
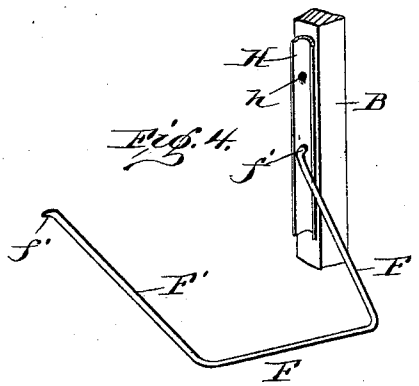


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE M. WELKER, OF BRYAN, OHIO.

SHELF.

SPECIFICATION forming part of Letters Patent No. 588,519, dated August 17, 1897.

Application filed September 19, 1896. Serial No. 606,335. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. WELKER, of Bryan, in the county of Williams and State of Ohio, have invented certain new and useful Improvements in Shelves; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

This invention relates to improvements in that class of shelves which are adapted to be adjusted to stand vertically one above the other or to stand at an inclination, or stepped, or, if so desired, to fold into a single plane for packing, storage, or transportation; and the objects of the invention are to provide a shelf of this character particularly adapted for use on counters and in windows of stores for the display of goods, although capable of use in any position where shelves are useful, which shelves shall be neat, strong, and compact, capable of being folded into very compact form, and capable of being easily and quickly adjusted to the desired position for use.

The invention consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described, and pointed out particularly in the appended claims.

Referring to the accompanying drawings, Figure 1 is a perspective view of a set of shelves made in accordance with my present invention. Fig. 2 is a similar view with the shelves folded. Fig. 3 is a side elevation with the shelves adjusted one directly over the other. Fig. 4 is a detail perspective of the preferred form of locking-brace.

Like letters of reference in the several figures indicate the same parts.

The letter A indicates the base, of any suitable shape and material, adapted to rest flat on the floor or counter and preferably having a central rearward extension A′, with shoulders *a* at each side, leaving spaces for the rear supporting-bars to fold into, as will presently appear. These rear supporting-bars B are hinged to the base at *b*, so as to be capable of being turned down in the plane of the base or of being turned up to any desired angle. The shelves C are hinged to the front of these bars at their rear edges, and at their front edges they are supported by front bars D, preferably arranged at the ends of the shelves and pivotally connected thereto by screws *c*, although any desired form of fastening may be employed. The front bars D are pivotally connected with the base at their lower ends, and in order that the shelves may fold down flat the pivotal connection is at a point above the general level of the base made preferably through the medium of ears E, rigidly connected to the base in any suitable manner.

A structure so formed is capable of being adjusted to any desired angle, as shown in Figs. 1 and 3, or it may be folded down flat, as shown in Fig. 2, while the shelves are always maintained in their proper horizontal position with relation to the base, and in order to provide a convenient and strong lock for holding the parts in their adjusted position I pivot a brace to the rearward extension A′, the upper end of which brace is adapted to coöperate with the rear bars. In the preferred construction this brace is formed by a U-shaped rod having its central portion F pivotally connected with the base by clips *f*, while its arms F′ extend up and have their ends bent outward at *f′* in position to coöperate with suitable notches or recesses in the inner faces of the rear bars. I prefer to form guides on these faces of the bars, which will keep the ends of the locking-brace in proper alinement with the apertures or notches with which it coöperates. These guides may take the form of sheet-metal troughs or guideways H, secured to the inner faces of the rear bars, and in the bottom of the guideways I form notches or recesses *h*, into which the ends of the locking-brace may drop. These recesses and the ends of the brace are preferably so formed or beveled that they will not catch as the shelves are drawn up, but will hold the shelves against downward movement until the brace is released by springing its ends toward each other.

In operation the device is set up with the base flat on the floor or counter and the shelves grasped and drawn up to the desired adjustment, which may be at any inclination or with the shelves one above the other. When desired, the lock may be released and the shelves folded down flat for packing away or for shipment.

Obviously the shelves may be made strong enough to be used as a step-ladder or to adapt them for any use to which it may be desired to put them.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In shelves adapted to fold down flat, the combination with the extended base having the central rearward extension forming a support to prevent the rearward tilting of the shelves when in inclined position, of the supporting-bars for the rear edges of the shelves pivotally connected to the base forward of and adapted to swing down parallel with the extension, the supporting-bars for the front edges of the shelves, upwardly-extending lugs on the front portion of the base, with pivotal connections between said lugs and the lower ends of the front bars, the shelves pivotally connected to all the supporting-bars and the locking-braces for holding the shelves in their adjusted position; substantially as described.

2. In shelves, the combination with the base and the pairs of rear and front supporting-bars pivotally connected at one end to said base, of the shelves pivotally supported between said pairs of bars, the locking-brace pivotally connected to the base and the guideways on the inner faces of the rear bars in which the ends of the brace work having apertures with which said ends coöperate to hold the shelves in their adjusted position; substantially as described.

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