

W. RHODES & R. MACONOCHIE.
ADJUSTABLE SHELF.

APPLICATION FILED NOV. 22, 1907.

932,325.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

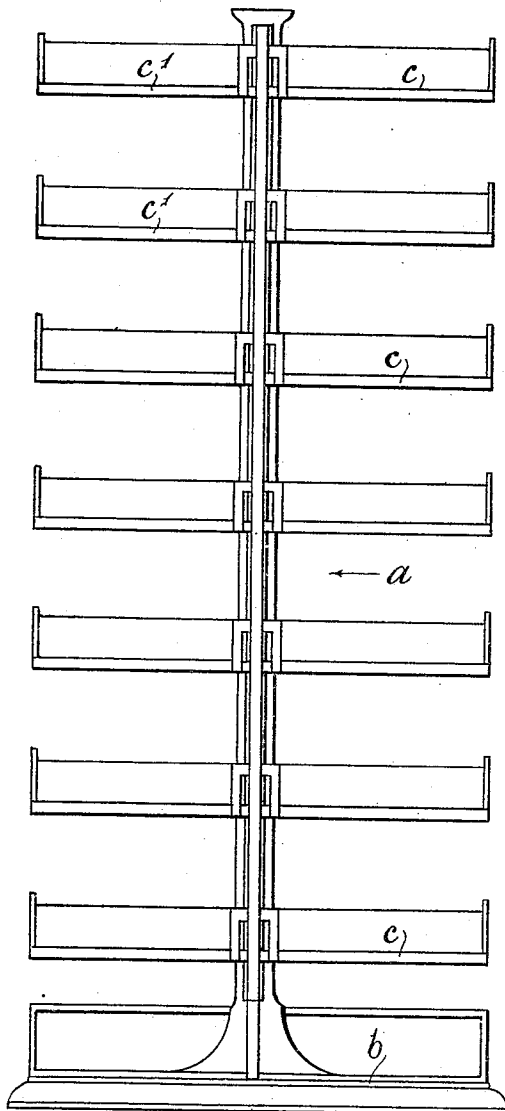


Fig. 2.

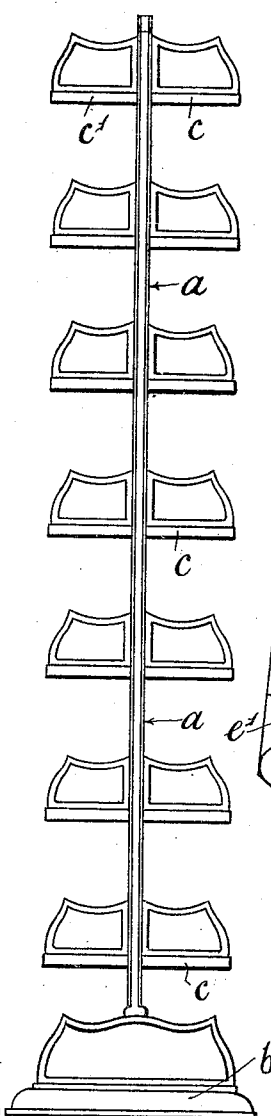
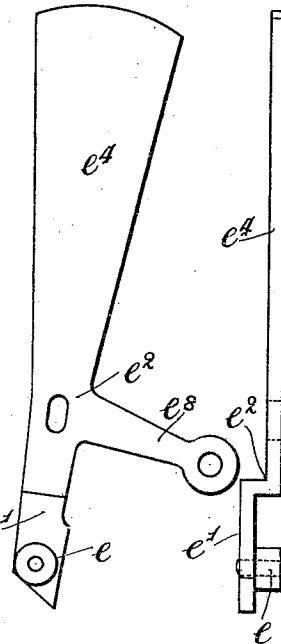


Fig. 6.



WITNESSES

W. B. Keefe
E. D. Hester

INVENTORS

Walter Rhodes
Richardson Macnochie
James L. Norris

W. RHODES & R. MACONOCHIE.

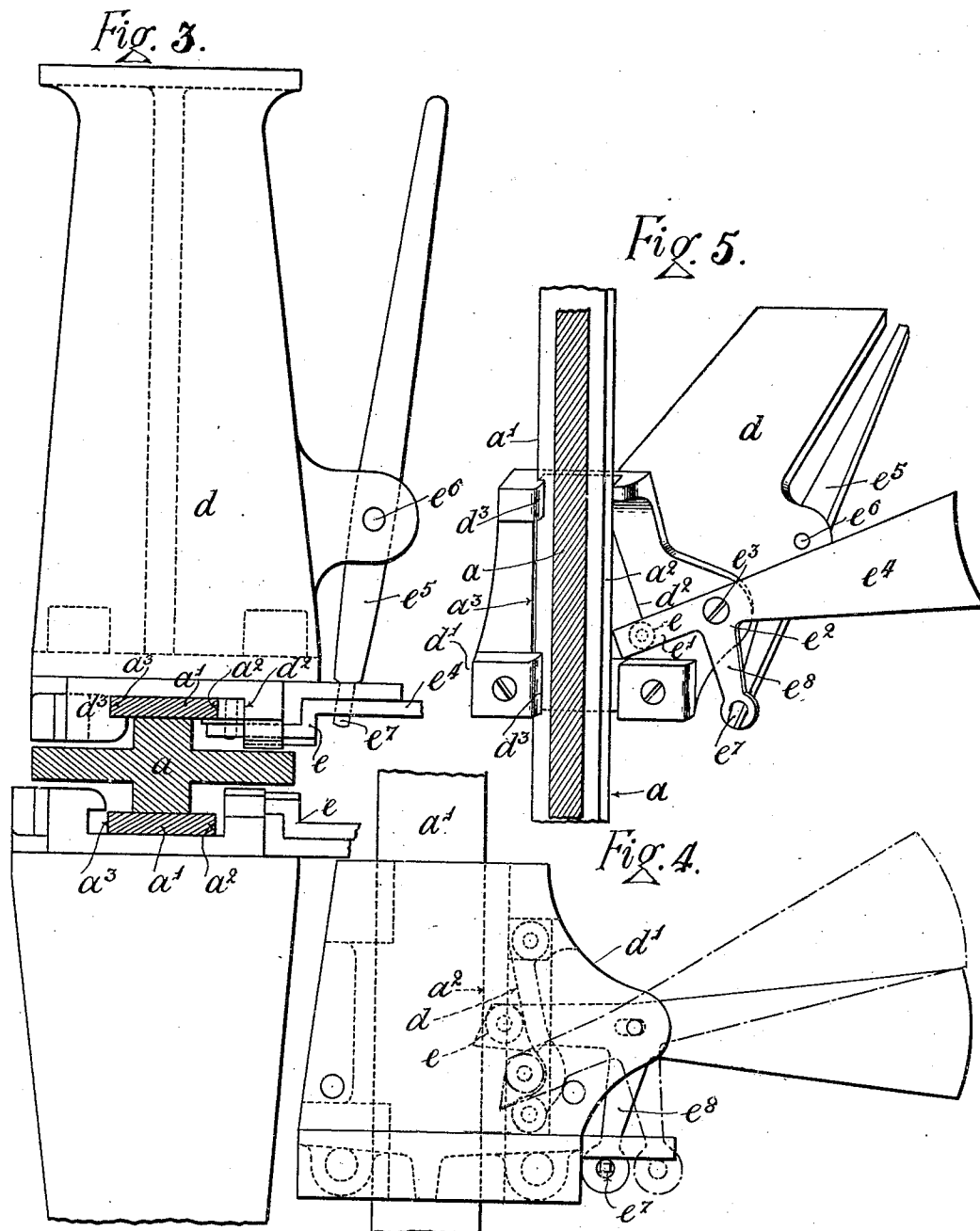
ADJUSTABLE SHELF.

APPLICATION FILED NOV. 22, 1907.

932,325.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 2.



WITNESSES

[Signature]
[Signature]

INVENTORS

Walter Rhodes
Richardson Maconochie
James L. Norris
Atty.

UNITED STATES PATENT OFFICE.

WALTER RHODES, OF SCHOLES, NEAR LEEDS, AND RICHARDSON MACONOCHIE, OF BIRMINGHAM, ENGLAND.

ADJUSTABLE SHELF.

932,325.

Specification of Letters Patent. Patented Aug. 24, 1909.

Application filed November 22, 1907. Serial No. 403,373.

To all whom it may concern:

Be it known that we, WALTER RHODES and RICHARDSON MACONOCHIE, subjects of the King of Great Britain, residing at Scholes Hall, Scholes, near Leeds, England, and Fore street, Birmingham, England, respectively, have invented certain new and useful Improvements in Adjustable Shelves, of which the following is a specification.

10 This invention has relation to adjustable shelving or supports for books, periodicals and other articles, and has for its object, to obviate the disadvantages attendant upon the adjustment and use of ordinary shelving wherein loose or detachable boards are
15 used and are supported from their opposite ends between pairs of uprights. To introduce such shelves into place, or to change their positions, it is necessary to tilt or cant the boards lengthwise and this operation
20 can usually only be performed after all books or other articles have been removed. But according to our invention we provide a book or like stand in which a number of
25 adjustable and detachable shelves are supported from one or both sides of a single standard or upright and in which the said shelves are connected, at their inner ends
30 only, to special slidable and detachable brackets which are mechanically fastened to the said standard and are adapted to admit of the vertical or sliding adjustment of the
shelves thereon as well as to provide for
35 any shelf of the series being readily detached and removed from the stand without disturbing or interfering with the remaining shelves.

Figure 1 of the accompanying drawings represents an elevation of a double set of adjustable and mechanically-fastened book-shelves supported from the opposite sides of a central standard in accordance with one form of our invention, Fig. 2 is an elevation showing the inner ends of one of the
40 said sets of shelves. Fig. 3 represents, upon an enlarged scale, a plan of one of the adjustable shelf-supporting brackets or fittings, which also carries the means for locking or

securing the shelf in its adjusted position to the single central standard. One of these
50 shelf-brackets is shown fastened to the standard while the other is shown disconnected so that it can be lifted away by a lateral or endwise movement in the direction indicated by the arrow in the figure. Fig. 4 is an end
55 elevation of the said bracket, showing the mechanical locking or fastening arrangements in dotted lines. Fig. 5 is a perspective view, showing one of the brackets
(which is of a cantilever form) and the
60 shelf-locking mechanism in elevation. Fig. 6 is a view in both side and edge elevation of a weighted balance lever which forms an element of the mechanical locking or fastening
65 arrangement.

The same letters of reference indicate corresponding parts in the several figures of the drawings.

In the construction shown in these figures, *a* is the central standard which rises from a
70 base *b* and *c*, *c'* are two sets of shelves which are carried or supported on the opposite sides of the standards, by cantilever brackets or armed fittings *d* which are vertically adjustable upon the said standard for the purpose
75 of altering the relative distances between the several shelves as circumstances may require, and are also arranged to admit of the detachment of any one or more of said
shelves by an end-wise or lateral movement. 80
The central standard may consist of a single bar or rod or tubular member rising from a suitable base, or it may consist of a frame
work made up of two or more parallel bars
85 suitably braced together and adapted to serve as guides or rails for the shelves, which are attached, at or about their centers, to the brackets, shoes or slide-fittings which are adapted to run or slide upon the said bar or
90 rails. Each shelf board may be provided with an upright back and two upright ends for confining or retaining the books or the like, or longitudinal partitions may be arranged so as to adapt each shelf to carry two
rows of books or the like. The said shelves 95
may be formed from wood or metal, and in

the latter case, the brackets, bearers or slide fittings which run upon the standard may be formed out of the metal of the shelves themselves.

5 Preferably the brackets and fastenings are of that type in which pivoted levers with wedging ends are adapted to be engaged between the edge of a member of the standard and an opposed abutment on the shelf
10 bracket or bearer; or bolts or catches or other fastenings may be used, but in every case we arrange the fastening of each bracket so that it can be operated from the back or front or outer end of each shelf when it is
15 desired to free the latter from its supporting standard, and again engaged after adjustment has been accomplished, without interfering with the shelves themselves. The brackets represented in the drawings, are
20 provided with an application or adaptation of such wedge-ended lever mechanism it being understood that a separate fastening is fitted to each bracket for the purpose of effectively locking said brackets, after adjustment or replacement to the central standard,
25 and to facilitate the application of this type of fastening, the standard is made of the sectional form shown in Fig. 3 and is provided with vertical guide-strips or bars a^1 , on its
30 opposite sides, as shown in the said Fig. 3 so that one set of shelf-brackets may be adjustably and detachably secured to the one bar or strip while the other set is similarly connected to the bar or strip a^1 on the opposite
35 side of the standard.

The form, in elevation, of the part of the bracket in which the fastening devices are mounted is shown in the perspective view Fig. 5, which represents the inner face thereof, and the wedging device which is fitted to this part of the bracket, consists of a roller e , located in a wedge-shaped recess comprehended between the one edge a^2 of the guide bar a^1 and an inclined shoulder d^2
40 on the shoe face, and adapted, when forced or lifted into the narrower part of the recess, to draw the hook-sectioned parts d^3 of the bracket into engagement with the edge a^3 of the guide bar a^1 and to frictionally bind
45 or clamp the bracket to the standard in a manner which admits of the load upon the supported shelf acting to render the lock more positive, whereas by mechanically depressing said roller into the lower and wider
50 part of the recess, the bracket is freed from the standard and can be adjusted vertically thereon, or by first moving the bracket in the direction that will disengage the hooked parts from the guide bar, it can be completely disconnected from the standard and
60 be lifted away therefrom by a lateral or end-wise movement.

The wedging roller is mounted on the arm e^1 of a balanced ball-crank e^2 , which is

fulcrumed at e^3 to an ear or lug on the shoe 65 and whose balance weight e^4 is so disposed that it tends to raise the roller in the recess and set up the clamping action automatically as soon as the device which is provided for the disengagement of the roller mounting is released. The said controlling device
70 consists, in the arrangement represented, of a lever e^5 , pivoted at e^6 so as to swing horizontally below the shelf bracket and having the inner end e^7 engaging with the hanging
75 or depending arm e^8 of the roller bell crank, as clearly shown in Fig. 5.

Having fully described our invention what we desire to claim and secure by Letters Patent is:—

1. The combination of a standard, a shelf supporting bracket adjustable on the standard and provided with means for locking it in different adjusted positions, such means embodying a wedge-shaped portion on the
80 bracket, a lever pivoted to the bracket and having means to coöperate with said wedge-shaped portion to lock and unlock the bracket with respect to the standard, said
85 lever being weighted whereby it shall be normally held in locking position, and a device operatively connected to said lever and movable substantially parallel to the plane
90 of the shelf whereby the locking lever may be operated without tilting the shelf.

2. The combination with a standard, a shelf supporting bracket provided with upper and lower hook-shaped devices arranged to detachably engage one side of the standard, a wedge-shaped portion formed on the
100 bracket and inclined relatively to the length of the standard, a locking lever pivoted on the bracket and having a part arranged to coöperate with said wedge-shaped portion
105 thereon to lock the bracket upon the standard, and a controlling lever operatively connected to the locking lever and having an operating portion arranged toward the free end of the shelf.

3. In shelving of the class described, in
110 combination, a standard having a shelf supporting rail at one side thereof, a shelf bracket projecting laterally from the rail, the latter being disposed transversely of the bracket, fixed means at one side of the
115 bracket and transverse thereto for clamping engagement with the rail and movable means at the other side of the bracket and disposed transversely thereof for locking and unlocking clamping engagement with
120 the rail and for causing the clamping action of said fixed means, said movable means comprising a pivoted lever having a counter-weighted free end and having its inner end
125 formed to engage said rail and provided with means to bear upon the edge face thereof with frictional clamping action.

4. The combination with a standard hav-

ing a shelf supporting rail, of a shelf bracket
having means for locking engagement with
said rail and comprising a pivoted lever hav-
ing its inner end provided with means to
5 frictionally engage the rail and having a
counterweighted free end, said lever having
also an intermediate projecting arm and a
second pivoted lever connected to said pro-
jecting arm and operable to cause movement
10 of said first-named lever into and out of en-
gagement with the rail.

In testimony whereof we have hereunto

set our hands in presence of two subscribing
witnesses.

WALTER RHODES.

RICHARDSON MACONOCHIE.

Witnesses to the signature of Walter
Rhodes:

THOMAS H. BATES,

EDWARD MARDY.

Witnesses to the signature of Richardson
Maconochie:

HENRY NORTON SKEWETT,

ELIZA HELEN SCOTSON.