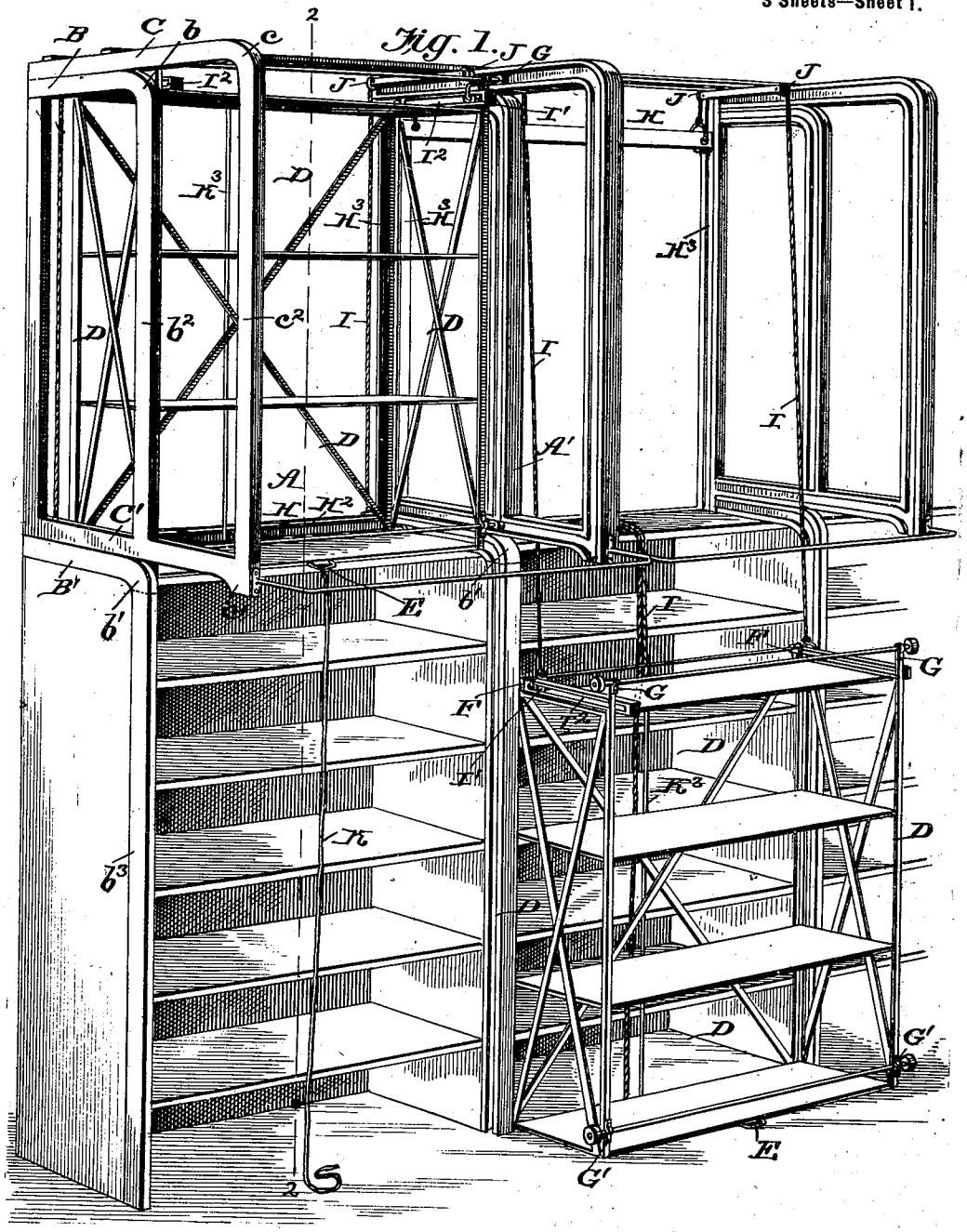
No. 617,965. Patented Jan. 17, 1899.

J. M. LIPPINCOTT & C. S. HALL.

SHELVING.

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

W. D. Blondell.

R. B. Turpin.

INVENTORS:

James M. Lippincott,
Clinton S. Hall.

BY Munn & Co.

ATTORNEYS.

No. 617,965. Patented Jan. 17, 1899.

J. M. LIPPINCOTT & C. S. HALL.

SHELVING.

(No Model.) 3 Sheets—Sheet 2.

Fig. 2.

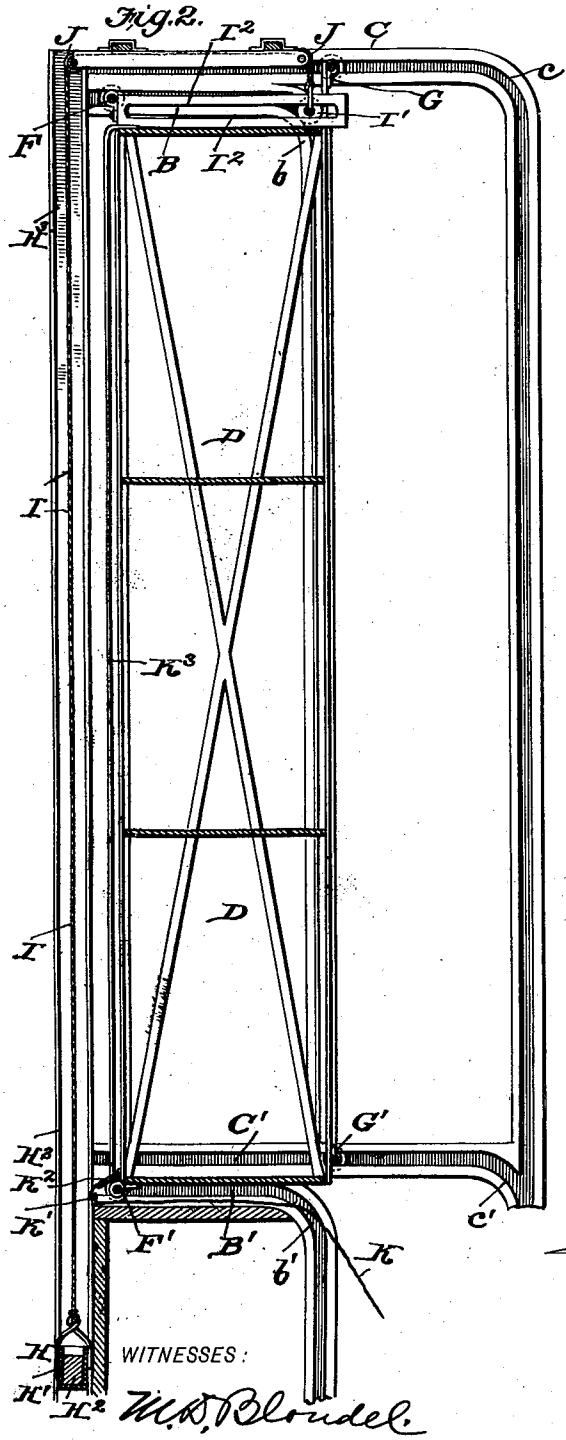


Fig. 3.

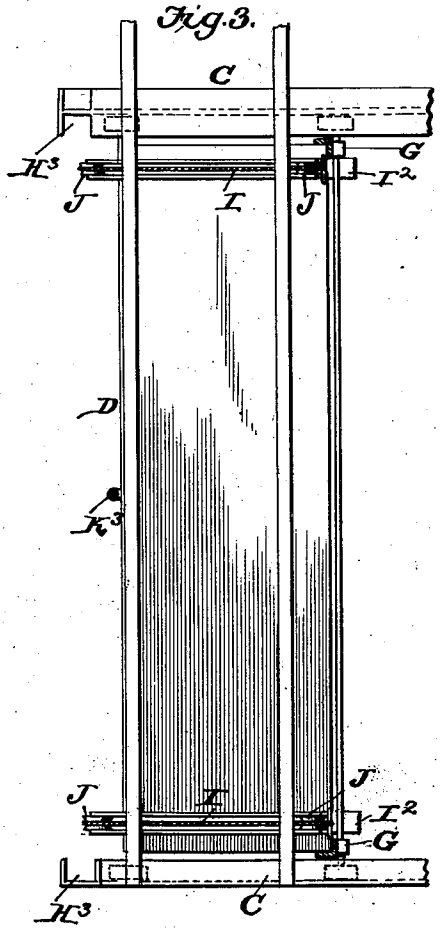
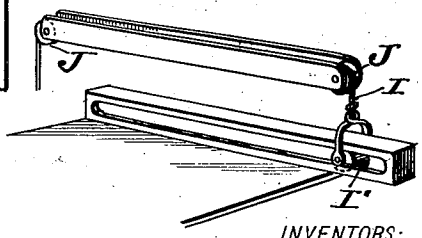


Fig. 4.



WITNESSES:

W. D. Blondel.

P. B. Turpin

INVENTORS:

James M. Lippincott.

Clinton S. Hall.

BY Munn & Co.

ATTORNEYS.

No. 617,965. Patented Jan. 17, 1899.

J. M. LIPPINCOTT & C. S. HALL.

SHELVING.

(No Model.) 3 Sheets—Sheet 3.

Fig. 5.

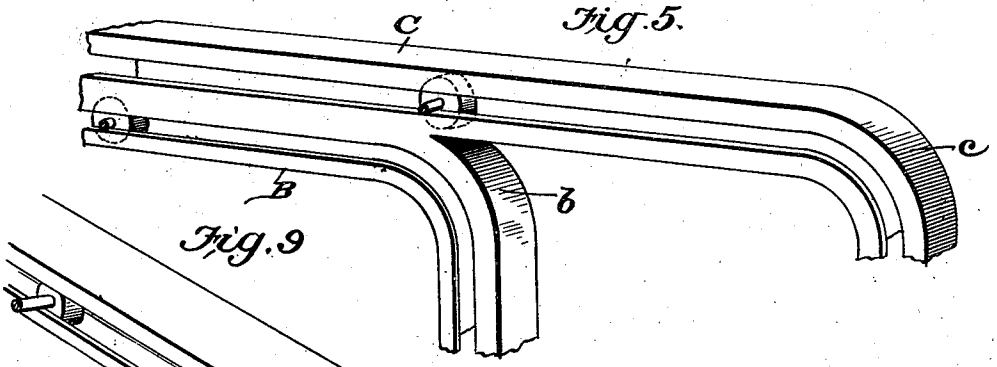


Fig. 9.

Fig. 6.

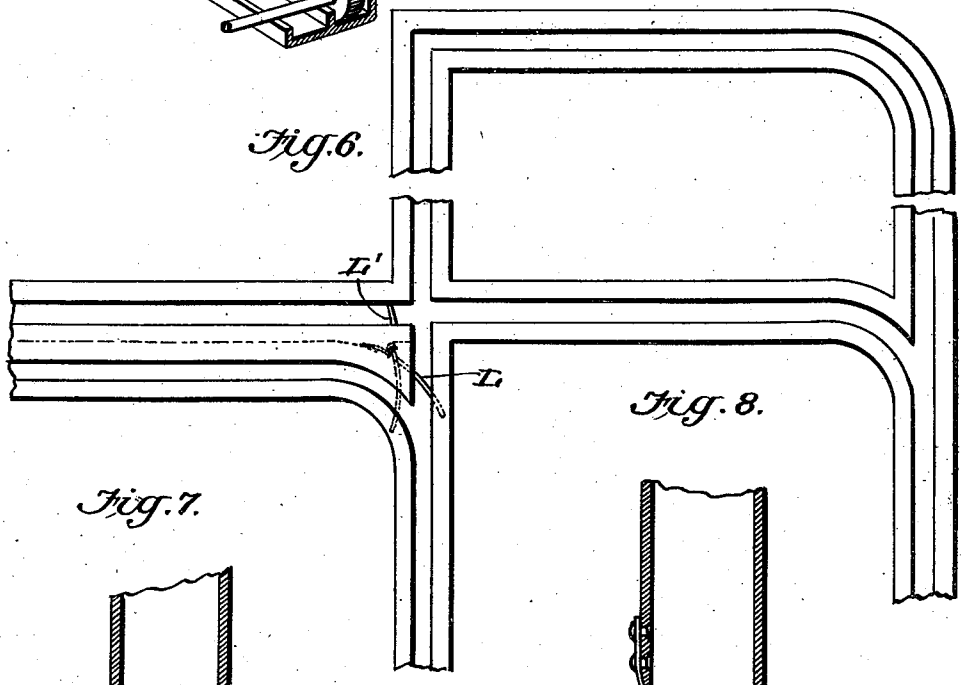


Fig. 8.

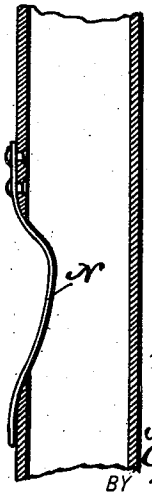
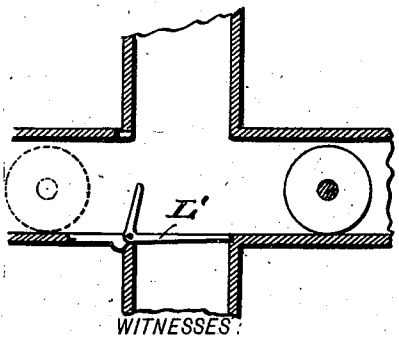


Fig. 7.



WITNESSES:

M. S. Blondell

P. B. Turpin.

INVENTORS:

James M. Lippincott

Clinton S. Hall.

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES M. LIPPINCOTT AND CLINTON S. HALL, OF OAKLAND, ILLINOIS.

SHELVING.

SPECIFICATION forming part of Letters Patent No. 617,965, dated January 17, 1899.

Application filed March 4, 1898. Serial No. 672,591. (No model.)

To all whom it may concern:

Be it known that we, JAMES M. LIPPINCOTT and CLINTON S. HALL, residing at Oakland, in the county of Coles and State of Illinois, have invented certain new and useful Improvements in Shelving, of which the following is a full, clear, and exact specification.

This invention is an improvement in shelving, and is designed to furnish means for utilizing the space between the top of the ordinary shelving and the ceiling of the room by providing a shelf-section which can be moved vertically to a point above the fixed shelves and then moved laterally to a point above the fixed shelving; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of our improvement as in use. Fig. 2 is a vertical longitudinal section on about line 2 2 of Fig. 1. Fig. 3 is a top plan view of the apparatus. Fig. 4 is a detail perspective view illustrating the connection of the counterbalance-cord with the movable shelf-section. Fig. 5 is a detail perspective view showing portions of the guideways. Fig. 6 illustrates the construction of guideways employed when movable shelf-sections are provided one above the other. Fig. 7 is an enlarged detail view illustrating the crossover employed in the construction shown in Fig. 6. Fig. 8 is a detail view of the latch, and Fig. 9 illustrates the construction of guideways when the lateral wings thereof are arranged in the same horizontal plane.

Our invention may be employed in connection with any suitable lower or fixed shelving or construction of show-cases, or it may be employed apart from such fixed shelving when it is desired to utilize the upper portion of the room by shelving or the like, and yet have such shelving so it can be brought to convenient position for access from the floor.

In the construction shown the guideways form side frames at A and A′, one of which, as shown at A′, may be double to furnish guideways for the meeting ends of adjacent shelf-sections when the shelving has its movable sections arranged in series side by side.

In the construction shown and as preferred we provide guideways B and C for respectively the rear and front edges of the movable shelf-section and also guideways B′ and C′ for the corresponding edges of the lower end of the said section, such guideways B B′ C C′ being curved downward at b b' c c', leading into vertical wings at b^2 and c^2 and at b^3, the latter leading from the guideway b' and extending to or nearly to the floor. By the described construction it will be seen the guideways are constructed with vertical and lateral wings, the vertical wings directing the vertical movements of the movable shelf-section, while the lateral wings direct such section horizontally back to position in which it ordinarily is arranged, or forward, to bring it in position for lowering, so it can be reached from the floor.

The movable shelf-section D may be framed together in any suitable way and supplied with any number of shelves, as may be desired.

At its lower front edge the section D has a loop E, which may be caught by a hook-pole when it is desired to lower the section D, and such section has projections F and G at the rear and front of its upper end and corresponding projections F′ and G′ at its lower end, which operate in the guideways heretofore described, such projections F and F′ and G and G′ being preferably supplied with rollers to render the operation easier and the projections of each pair being preferably united by a cross-shaft, which operates to brace and give firmness to the movable shelf-section.

To counterbalance the movable shelf-section, we provide at H a weight, which is connected by a cord or cords I, leading over pulleys J, with the upper end of the movable shelf-section, the connection with the shelf-section being a movable one, so the stress of the counterbalancing-weight will not hinder the lateral movements of the movable shelf-section. This is preferably effected by providing the counterbalancing-cord I with a roller I′, which travels in a track I^2, extended transversely upon the top of the movable shelving-section, so such section may roll back and forth without disconnecting the counterbalancing devices, and yet so such counterbalancing devices will not retard such move-

ments of the shelving-section, as will be best understood from Fig. 4. Where two counterbalancing-cords are used, they are preferably connected near the opposite ends of the shelving-section, as shown in Fig. 1; but it is obvious a single counterbalancing-cord may be used for each of the shelving-sections and connect thereto midway between the ends of same.

The weight H preferably includes a trough or receptacle H′ and weights H^3 therein, the latter being added to as may be necessary to properly counterbalance the shelving-section and its contents. This counterbalance-weight H is directed vertically in guides H^3, as will be understood from Figs. 2 and 3.

In order to move the shelving-section horizontally back in the guides B B′ C C′, we provide a backing-line K, passed around an eye K′ near the rear end of the guideway B′ and having at K^2 a sliding connection with the shelving-section, preferably by providing at K^2 a ring, which fits on a rod K^3, extended vertically along the rear side of the shelving-section, the ring sliding on the rod, so the vertical movement of the shelving-section will not drag the backing-line. At the same time when the shelving-section has been lifted to its uppermost position the backing-line may be pulled upon to adjust said shelving-section into the position shown in Fig. 2.

While we have shown the guideways B and B′ as below, respectively, the guideways C and C′, it will be understood the guideways of each pair may, when desired, be arranged in the same plane, as will be understood from Fig. 9.

It may sometimes happen in rooms having very high ceilings that it is desirable to have two or more series of movable shelving-sections arranged one above the other, in which case the framing and guideways may be duplicated, except that the lower guideways may be used, or at least their vertical wings, for the upper shelf-section, it being necessary in such instance to hinge portions of the guideways, as shown at L in Fig. 6, and to provide tilting crossovers, as shown at L′ in said Fig. 6.

In the operation of our invention it will be seen the shelf-section is normally elevated up out of the way and back firmly against the wall, where it may be supported by the fixed shelving below. When it is desired to handle any of the articles stored on the shelving-section, the latter may be readily lowered, so it can be conveniently reached from the floor and then replaced, when desired, in its elevated position, the drag-line being found useful in adjusting the shelving-section horizontally, as before described.

In furnishing a store or other room the movable shelving-section may be arranged to extend the full length of the shelving-space or may be subdivided into any number of sections movable independently of each other.

It is manifest the framing and the shelving-sections may be made of any suitable material, in any suitable design, and be suitably braced to serve the special purpose for which the shelving may be intended.

In Fig. 8 we show a form of spring-latch N for holding the shelving-section from movement in either direction. This may be used whenever desired either to hold the shelving-section in the horizontal wings of the guideways, or at any desired height, or to prevent the section from being lifted by the counterbalance-weight when the latter is too heavy, the spring-latch being arranged to yield under extra pressure to permit the passage of the projections on the shelving-section when desired.

What we claim, and desire to secure by Letters Patent, is—

1. The combination with the framing and the shelving-section having a lateral movement, of the counterbalance-cord having a movable connection with the shelving-section whereby the stress of the counterbalance will not hinder the lateral movement of the shelving-section substantially as set forth.

2. An apparatus substantially as described comprising the vertically and laterally movable shelving-section having a transverse box-like guide in combination with the counterbalance-cord having a roller held and movable in said box-like guide substantially as set forth.

3. The combination of the vertically and laterally movable shelving-section and the backing-line for moving such section laterally such backing-line being held to and movable vertically along the shelving-section substantially as set forth.

4. The combination of the vertically and laterally movable shelving-section, the backing-line for moving the shelving-section laterally the rod extended vertically on the shelving and the ring or loop sliding on and forming a movable connection between said section and the backing-line substantially as set forth.

5. The combination of the framing having vertical and lateral guideways, the shelving-sections having portions moving in said guideways, the backing-line having a vertically-movable connection with the shelving-section and adapted to adjust the latter horizontally, the counterbalance-cord and means whereby said cord is movably connected with the shelving-section whereby its stress will not hinder the horizontal movement of the shelving-section substantially as set forth.

6. An apparatus substantially as described comprising the framing having guideways arranged one above the other and the shelving-section having at its front and rear edges projections operating in said guideways, substantially as set forth.

7. An apparatus substantially as described comprising the movable shelving-section, the guideways for the front and rear edges of said section, the guideways for the front of the section being projected in advance of those

for the rear of said section, and portions on the section in position to operate in said guideways substantially as set forth.

8. An apparatus substantially as described comprising the movable shelving-section provided at its front and rear edges with portions to operate in the guideways the portions at the front edge being in a plane above those at the rear, the guideways having portions arranged one above the other in position to receive the portions on the shelving-section, the guideway receiving the front portion of the shelving being projected in advance of that which receives the rear portion of the section substantially as set forth.

9. The combination of the vertically and laterally movable shelving-section, having projections to enter the guideways and the guideways having vertical and lateral wings receiving projections at both the upper and lower ends of the shelving-section, substantially as set forth.

10. An apparatus substantially as described comprising the framing having laterally-extended guideways arranged one above the other and curved inlet portions leading to said guideways and the shelving-section having at its front and rear edges projections arranged one in a plane above the other and operating in said guideways, substantially as set forth.

11. An apparatus substantially as described comprising a shelving-section movable vertically and laterally and having a series of shelves and the framing having guideways provided with vertical and lateral wings and with curved connecting portions, substantially as set forth.

12. An apparatus substantially as described comprising the shelving-section and the framing having guideways provided with vertical and lateral wings, such guideways having the hinged portions and the tilting crossover, substantially as set forth.

JAMES M. LIPPINCOTT.
CLINTON S. HALL.

Witnesses to the signature of James M. Lippincott:
S. P. CURTIS,
JAMES C. TABER.

Witnesses to the signature of Clinton S. Hall:
SOLON C. KEMON,
PERRY B. TURPIN.