

No. 629,704.

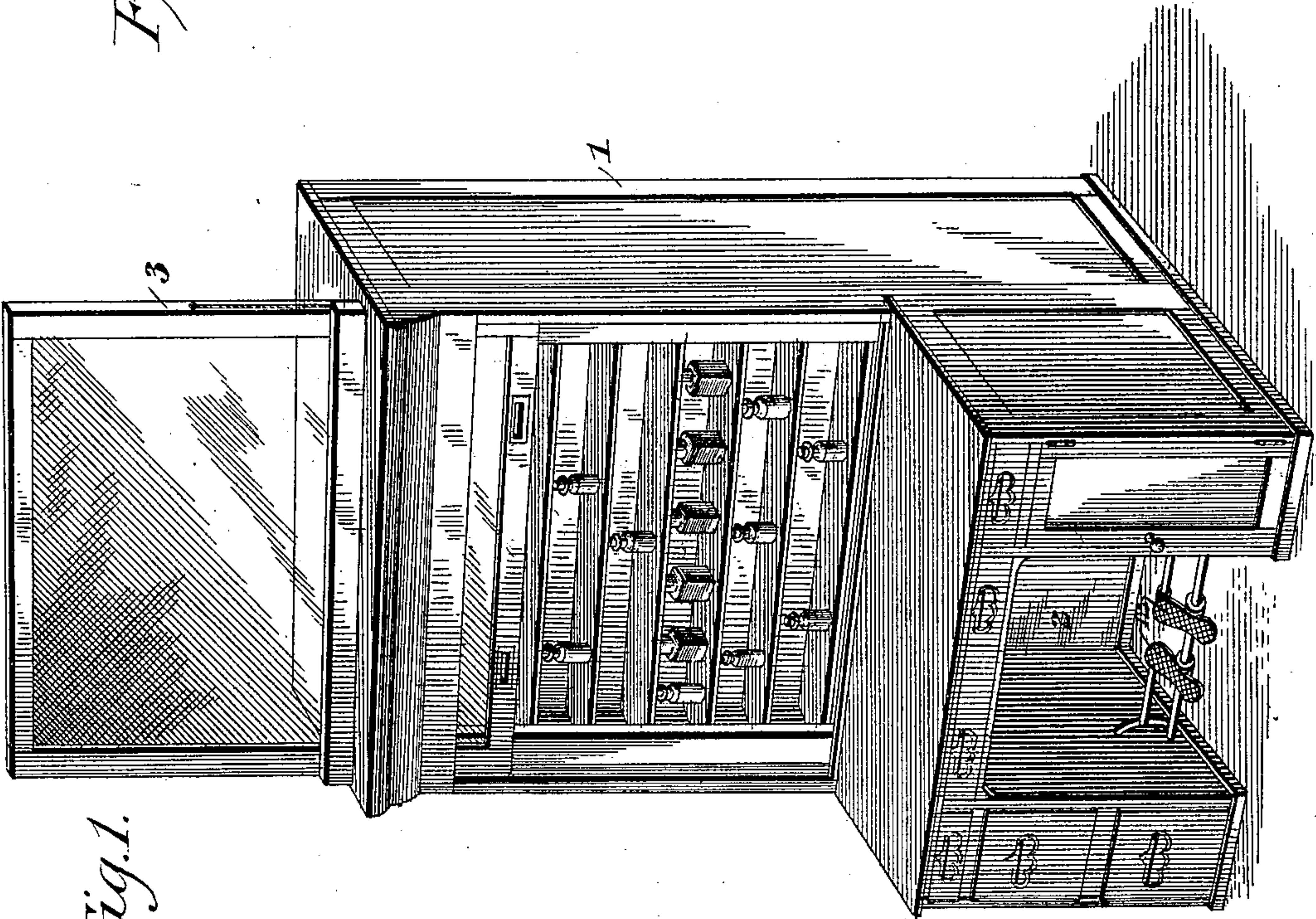
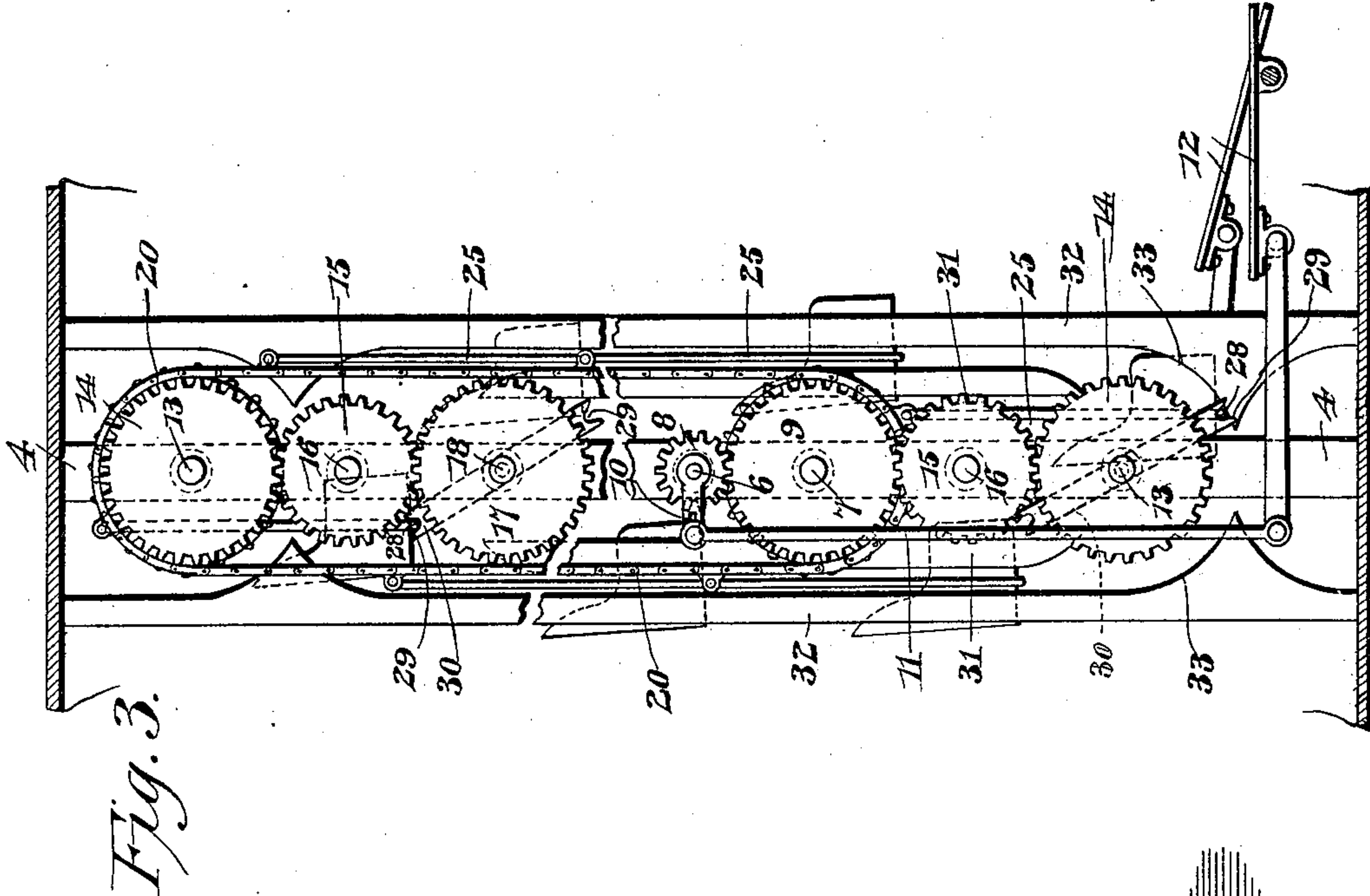
Patented July 25, 1899.

A. SYMES.
TRAVELING SHELVING.

(Application filed Mar. 9, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
Jas K. McLathran
U. B. Hillyard.

Arthur Symes Inventor
By His Attorneys.

C. A. Snow & Co.

No. 629,704.

Patented July 25, 1899.

A. SYMES.
TRAVELING SHELVING.

(Application filed Mar. 9, 1898.)

(No Model.)

2 Sheets—Sheet 2.

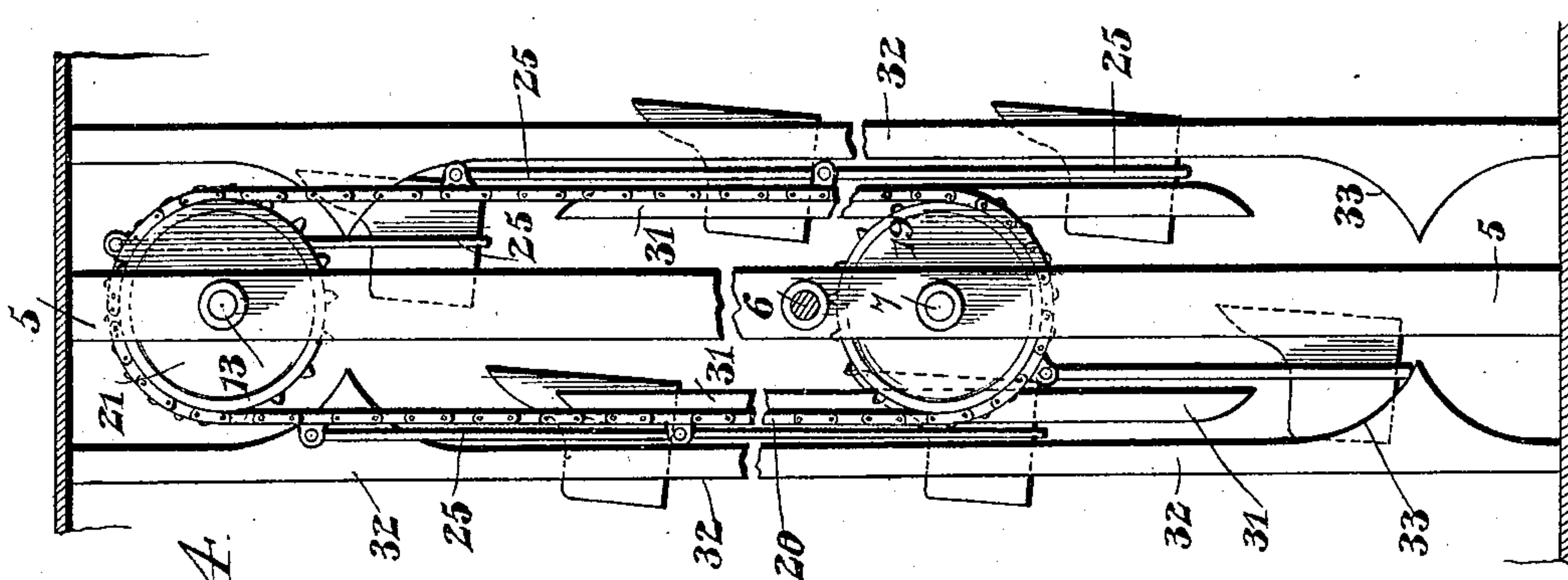


Fig. 4.

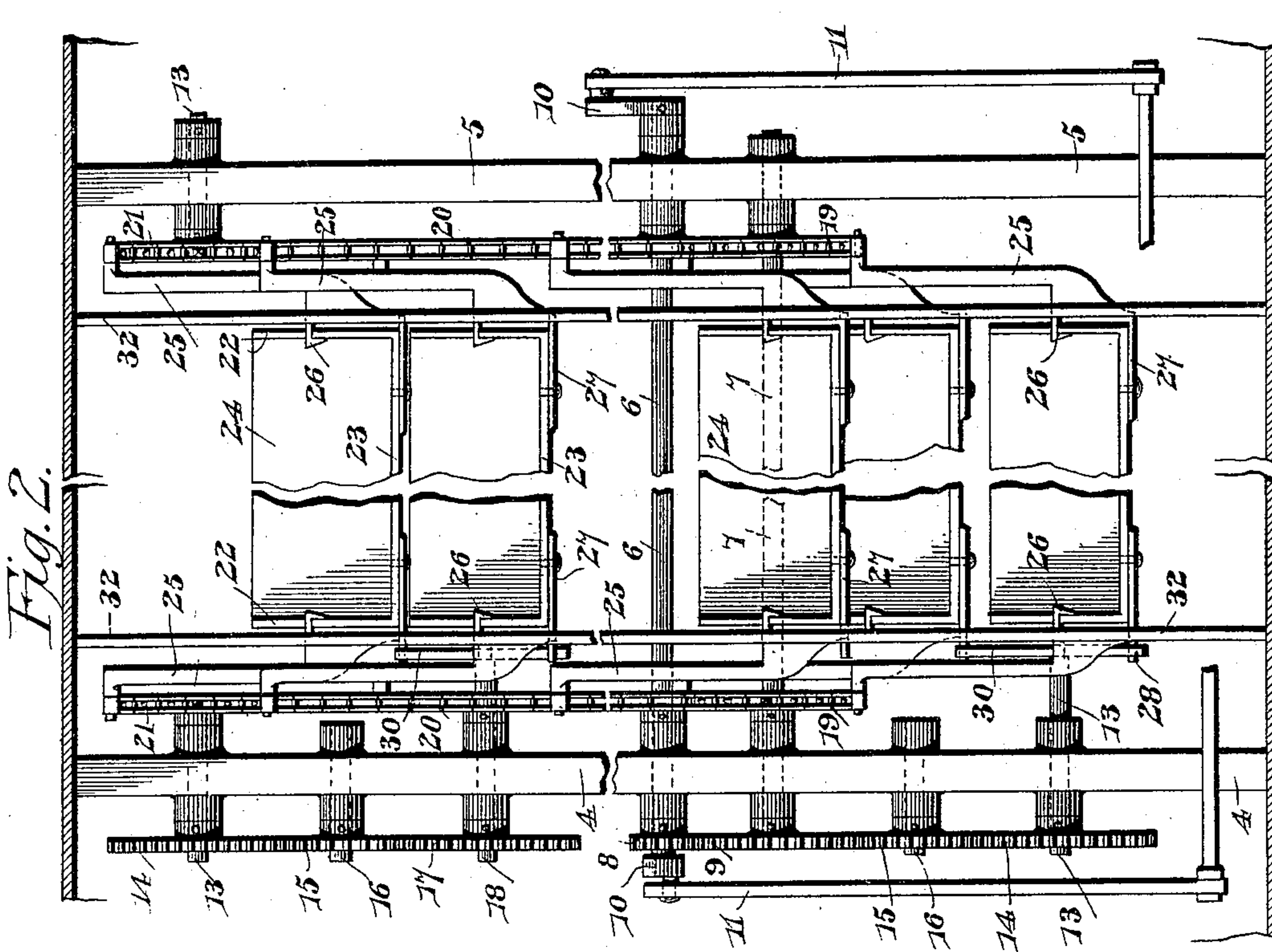


Fig. 2.

Witnesses

Jas E. McArthur
U. B. Hillyard.

By his Attorneys,

Arthur Symes, Inventor

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ARTHUR SYMES, OF RIVER FALLS, WISCONSIN.

TRAVELING SHELVING.

SPECIFICATION forming part of Letters Patent No. 629,704, dated July 25, 1899.

Application filed March 9, 1898. Serial No. 673,253. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR SYMES, (having declared my intention of becoming a citizen of the United States,) residing at River Falls, in the county of Pierce and State of Wisconsin, have invented a new and useful Traveling Shelving, of which the following is a specification.

This invention belongs to that class of shelving constructed so as to be movable, thereby bringing any desired shelf within convenient reach, so that the person may secure any required article without necessitating the mounting of a step-ladder or other device for the purpose.

The principal object of the invention is to wholly obviate swinging of the shelves when traveling in vertical lines and when moving from front to rear, or vice versa, and to provide for the easy operation of the shelving when it is required to move the same.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a cabinet supplied with shelving constructed in accordance with this invention. Fig. 2 is a view in elevation, showing the mechanism by means of which the shelving is operated, the intermediate portion of the shelves being broken away. Fig. 3 is a side view of the shelving, an intermediate portion being broken away. Fig. 4 is a view in side elevation, showing more clearly the guides and the means for connecting the shelves to cause them to move in unison.

Corresponding and like parts are referred to in the following description and indicated in the several views of the drawings by the same reference characters.

The shelving may be mounted and located in any desired relation, and, as shown, it is incased in a cabinet 1, provided with tiers of drawers at its lower end, surmounted by a

top and having a space 2 between the sets of drawers and below the top. A sliding panel 3 closes the shelving and is movable through an opening in the top of the cabinet. This panel comprises a frame and a glass plate, the latter admitting of the shelving being under observation. Uprights or posts 4 and 5 are located at the sides of the cabinet and support the operating mechanism. Shafts 6 and 7 are journaled at their ends in the posts 4 and 5 and are in meshing relation by means of gearing, consisting of a pinion 8, secured to an end portion of the shaft 6, and a gear-wheel 9, applied to the same end of the shaft 7. The ends of the shaft 6 are provided with cranks 10, which are set quartering and connected by pitmen 11 with treadles 12, located in the space 2. By having the cranks arranged quartering or relatively at right angles to one another one or the other will be in position to rotate the shaft upon the application of pressure to one or the other of the treadles 12, thereby imparting movement to the shaft 7 through the gearing 8 and 9.

Upper and lower shafts 13 are applied to the ends of the post or upright 4 and are provided at their outer ends with gear-wheels 14, which are in mesh with idlers 15, secured to shafts 16, applied to the post 4. The upper idler 15 meshes with a gear-wheel 17, secured to the outer end of a shaft 18, journaled in the post 4. The lower idler 15 meshes with the gear-wheel 9 and transmits motion therefrom to the lower gear-wheel 14 and shaft 13. Sprocket-wheels 19 are secured to the end portions of the shaft 7, and sprocket-chains 20 pass around them and companion sprocket-wheels 21, secured to the inner ends of corresponding transversely-aligning shafts 13, journaled to the upper ends of the posts or uprights 4 and 5. These sprocket-chains receive their motion from the shaft 7 in the manner set forth and impart a corresponding movement to the upper shafts 13 and from thence to the shaft 18 by means of the gearing 14, 15, and 17. The lower shaft 13 is rotated directly from the shaft 7 by means of the gearing 9, 15, and 14.

The shelves may be of any suitable design and, as shown, consist of end pieces 22, a bottom 23, and a back 24, and are suspended from links of the endless chains by means of

hangers 25. These hangers are provided in pairs and have pivotal connection at their upper ends with transversely-alining links of the sprocket-chains 20, and their lower ends are formed with hooks 26 to engage over the top edges of the end pieces 22 and with inner extensions 27 to receive the bottom pieces 23, to which they are secured in any desired manner. Pins 28 project outwardly from the lower ends of the hangers adjacent to the post 4 about in line with the inner extensions 27 and are adapted to be engaged by the forked or notched ends 29 of bars 30, secured to the inner ends of the shaft 18 and the lower shaft 13. These hangers 25 are of a length to admit of the shelves passing beneath the sprocket-wheels 21 when their upper ends are moving from front to rear, or vice versa.

Front and rear guides are provided and disposed to give the proper direction to the shelves in their vertical movements. These guides consist of inner bars 31 and outer bars 32, disposed in parallel relation and having a space between them of a width to admit of the lower ends of the hangers 25 moving freely therein. The inner bars 31 have their end portions curved and are considerably shorter than the outer bars 32, so as to admit of the hangers passing freely by them when the shelves move from one side of the cabinet to the other. The outer bars 32 have inwardly-curved extensions 33, formed on the arc of a circle corresponding with the sprocket-wheels 21 and 19, and these curved portions 33 are disposed with reference to the sprocket-wheels to be engaged by the pins 28, which latter ride thereon, so as to cause the hangers 25 to move in parallel planes when traveling forward or backward with reference to the cabinet.

The bars 30 are slightly longer than the diameter of the gear-wheels 14 and the sprocket-wheels 21 and 19, whereby their notched or forked ends 29 project a sufficient distance to engage with the pins 28 above and below horizontal planes passing through the axes of the shafts 18 and 13. The forked or notched ends of the bars 30 engage with and leave the pins 28 before the latter pass from between the guide-bars 31 and 32 and after they enter the said space, thereby preventing any lateral swinging of the shelves, which would be objectionable when articles such as bottles are placed thereon. The notches or forked ends flare outwardly at their extremities, so as to engage gradually with and disengage in a similar manner from the pins without imparting any jar to the shelves. The parts are proportioned and disposed so as to insure engagement being secured between the notched or forked ends of the bars 30 and the pins 28.

The train of connections herein described is operated by means of the treadles 12, which are pressed upon by the person sitting at the cabinet, thereby enabling any particular shelf to be brought within convenient reach to se-

cure any required article without requiring the person to leave the seat. When applying pressure to the treadles, the shaft 6 is set in motion, and a corresponding movement is imparted to the shaft 7 and from thence to the sprocket-chains passing around the sprocket-wheels 19. The shafts 13 and 18, carrying the bars 30, are rotated in the manner set forth, thereby bringing the notched ends of the bars 30 into and out of engagement with the pins 28 as the latter are brought successively into position at the ends of the front and rear guides. It is to be understood that within the spirit of the invention the shafts 13 and 18 may be turned in any desired manner, so as to attain the end set forth.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a traveling support, the combination with an endless carrier, and pivoted hangers applied thereto at intervals in its length, of rotatable bars arranged below the respective upper and lower supports of the said endless carrier to engage positively with the hangers and steady them when passing in a relative forward and backward direction, and means for connecting said rotatable bars and endless carrier to cause them to move in unison, substantially as and for the purpose specified.

2. In combination, endless chains, sprocket-wheels forming supports therefor, hangers having pivotal connection with transversely-alining links of the sprocket-chains and bearing shelves at their lower ends, and corresponding upper and lower bars having their ends constructed to engage with the lower ends of the hangers and steady them and the shelves when passing in a relative forward and backward direction, substantially as set forth.

3. In combination, endless chains, sprocket-wheels forming supports therefor, hangers having pivotal connection at their upper ends with transversely-alining links of the sprocket-chains and bearing shelves at their lower ends, and upper and lower bars located below the respective upper and lower sprocket-wheels and adapted to engage with corresponding hangers at their lower ends and steady them when moving relatively forward and backward, substantially as and for the purpose set forth.

4. In combination, endless chains, supporting-wheels therefor, vertical guides arranged close to the inner sides of the endless chains, shelves operating in the space formed between the vertical guides and comprising a bottom and end pieces, and hangers located in the spaces formed between the vertical guides and adjacent endless chains and having pivotal connection at their upper ends with transversely-alining links of the chains, and having their lower end portions projecting across the plane of the vertical guides and operating in the ways thereof and formed with hooks to engage over the end pieces of the

shelves and with inner extensions attached to the bottoms of the said shelves, substantially as set forth.

5. In combination, endless chains, sprocket-wheels forming supports therefor, hangers having pivotal connection at their upper ends with transversely-alining links of the sprocket-chains and bearing shelves at their lower ends, front and rear guides composed of separate parts, the outer parts projecting beyond the inner parts and having inner curved extensions, and bars adapted to act jointly with the curved extensions of the guides to give proper direction to the hangers and the shelves carried thereby when moving relatively forward or backward, substantially as set forth.

6. In combination, endless chains, supports therefor, hangers carrying shelves pivotally connected with the chains, a shaft provided with cranks set quartering, treadles having connection with the cranks of said shaft, means for imparting movement to the endless chain from the treadle-operated shaft, other shafts in gear with the endless chains so as to rotate therewith, bars applied to the last-mentioned shafts and having their end portions forked or notched to engage with extensions of the hangers and steady the latter in their relative forward and backward movement, and front and rear guides composed of

inner and outer members, the latter having inner curved extensions to cooperate with the aforesaid notched bars, substantially as described.

7. In combination, endless chains, supports therefor, hangers having pivotal connection at their upper ends with transversely-alined links of the chain and having outwardly-extending pins at their lower ends, shelves secured to the lower ends of the hangers, front and rear guides located between the sprocket-chains and the ends of the shelves and comprising inner and outer bars spaced apart and adapted to have the lower ends of the hangers travel in the spaces formed between them, the outer bars having inner curved extensions, shafts in gear with the sprocket-chains, and bars secured to said shafts and having their ends notched or forked to engage with the pins of the hangers to act jointly with the curved extensions of the guides to give proper direction to the shelves, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ARTHUR SYMES.

Witnesses:

F. J. BURHYTE,
J. B. FALLIS.