Sept. 4, 1928. 1,683,228

E. R. ARMSTRONG

ADJUSTABLE SHELF SUPPORT

Filed Dec. 10, 1926

Fig. 1

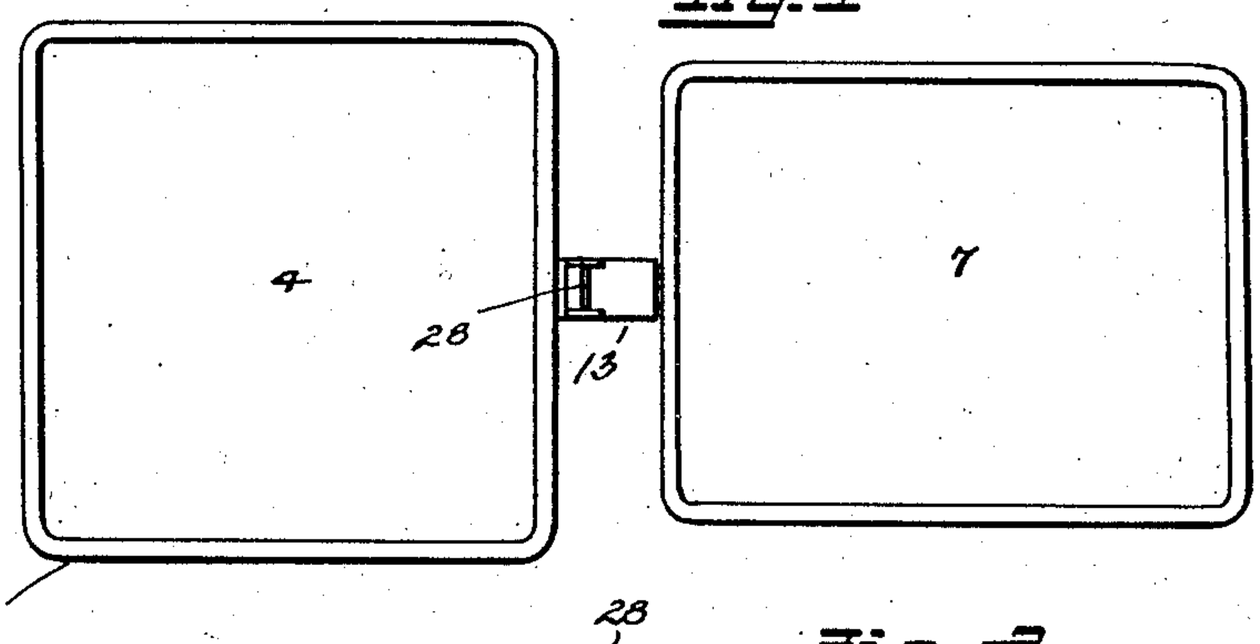

Fig. 2

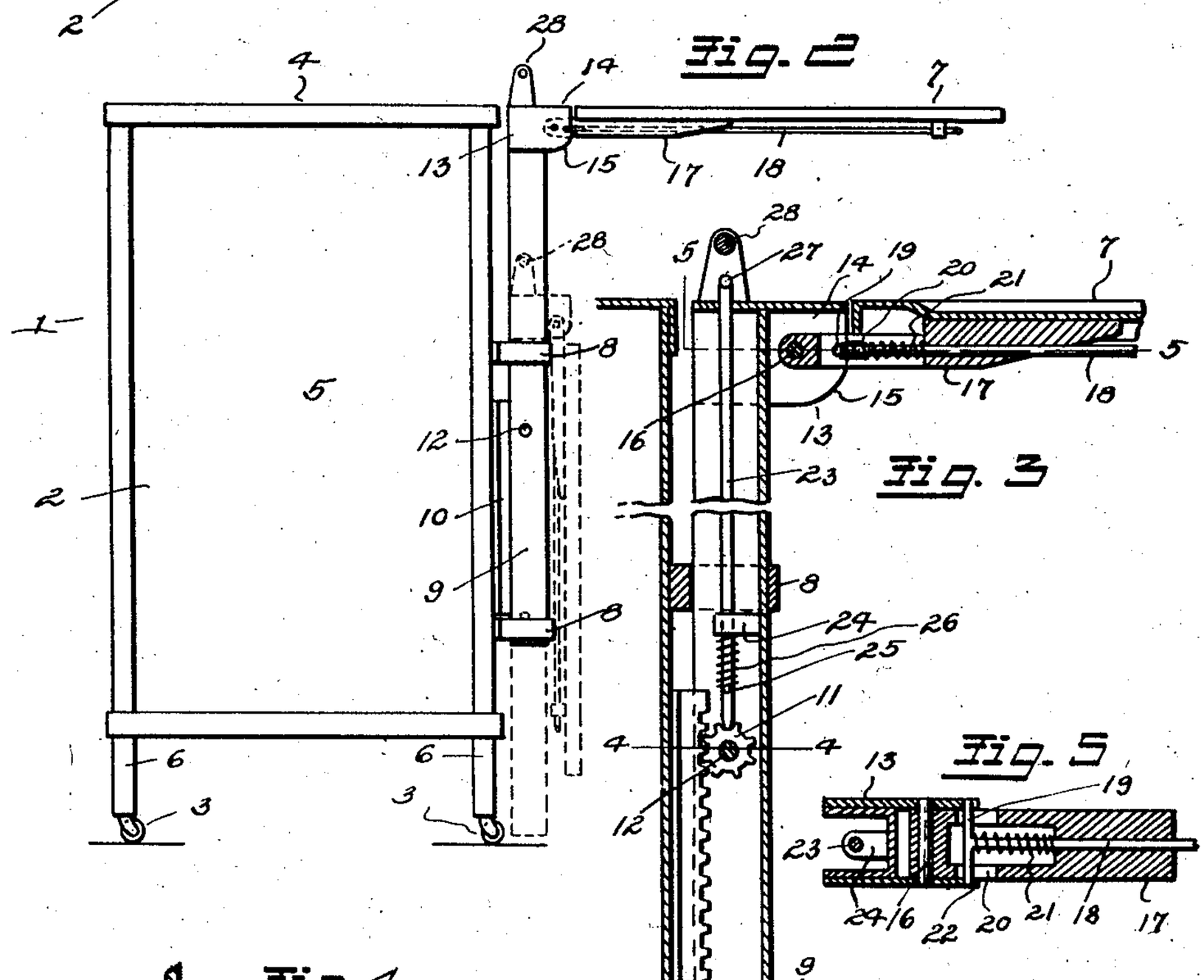

Fig. 3

Fig. 4

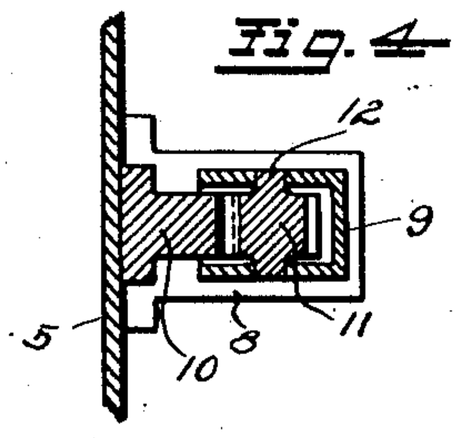

Fig. 5

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ADJUSTABLE SHELF SUPPORT.

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This invention relates to an improved adjustable shelf wherein is provided an improved mounting by which the shelf can be retained in connection with an associated supporting member for swinging movement about a substantially horizontal axis and also raised and lowered bodily for operation in various horizontal planes.

With regard to its more specific features the invention is directed to the provision of an improved adjustable shelf means formed for association with a cabinet or table of the type used particularly in hospitals or bed rooms, and by means of which the shelf means, when actively positioned, will be formed to occupy a substantially horizontal plane of sufficient height to extend over a bed or the like but independently of the latter, and whereby when the shelf is inactively positioned, the same will be capable of assuming a folded position lying contiguous to one of the side walls of the table or cabinet carrying the same in order to occupy but a minimum of space when not in use. Another object of the invention rests in the provision of an adjustable shelf of this character wherein is provided an improved means for facilitating the vertical adjustment of the shelf and for locking automatically the shelf in its various positions of vertical adjustment.

A further object of the invention resides in the provision of a structure which may be operated entirely by the hands of the attendant and without resort to the use of foot controls, or other involved mechanical locking and releasing means.

With these and other objects in view, as will appear as the description proceeds, the invention consists in the novel features of construction, combinations of elements and arrangements of parts hereinafter to be fully described and pointed out in the appended claims.

In the accompanying drawing:

Figure 1 is a plan view of a bed side table constructed in accordance with the present invention,

Figure 2 is a side elevation thereof, disclosing the adjustable shelf member in its active or extended position,

Figure 3 is a vertical transverse sectional view taken through the adjustable supporting means for the shelf member,

Figure 4 is a horizontal sectional view on the line 4—4 of Figure 3, and

Figure 5 is a similar view on the line 5—5 of Figure 3.

Referring more particularly to the drawing the numeral 1 designates the improved bed side table in its entirety. The table is preferably formed to include a sheet metal cabinet unit 2, portably mounted upon caster wheels 3, the cabinet being formed to include a substantially plane top 4 and similar side walls 5, there being depending legs 6 to the lower end of which the wheels 3 are fastened.

Connected with the cabinet unit of a table is an adjustable shelf 7 which is so mounted that when in active operation the same will occupy the horizontal plane disclosed in full lines in Figures 1 and 2, and when inactively positioned the same is adapted to be folded and lowered so as to occupy substantially the position disclosed in broken lines in Figure 2, in which the shelf will lie closely adjacent to the side wall of the cabinet and in a folded and out of the way position.

To effect the support of the shelf and to permit of its adjustment as indicated, one of the side walls 5 is provided with a pair of vertically spaced and aligned bearing yokes 8, in which is slidably mounted for vertical adjustment a channel member or support 9. Also secured to the wall 5 in prominent relation therewith, and situated between the yokes 8, is a rack bar 10, with which is engaged the teeth of a pinion 11 rotatably mounted on a horizontal shaft 12, carried by the support 9.

The upper end of the support 9 is provided with a head 13, which is permanently secured to said support and projects laterally to one side thereof as indicated at 14. This laterally projecting portion of the head is formed to include curved edges 15, in the axis of which is arranged a stationary pin 16. Pivotally mounted to swing about the axis of the pin 16 is a forwardly directed arm 17, which is attached in any suitable manner to the under side of the swinging

shelf 7, so as to effect the pivotal support of said shelf and to allow the same to move in arc of substantially 90 degrees and in a vertical plane.

Slidably mounted in the arm 17 is a latch rod 18, which has its inner end terminated to provide a transversely extending portion 19, which extends through slots 20, formed in the inner end of the arm 17, there being a spring 21 around the rod 18 which serves normally to maintain the portion 19 in engagement with or toward the inner end of the slots 20. The portion 19 of the rod extends laterally beyond each side of the arm 17 and is adapted to engage with the curved edges 15 of the head 13. It will be seen that when the shelf has been moved to assume a horizontal position, the portion 19 of the rods 18 will be forced by the action of the spring 21 into locking recesses 22 provided in the head 13, whereby the shelf is retained in its horizontal position and adapted to receive and support articles of any description. When it is desired to lower the shelf the outer end of the rod 18 is grasped and pulled longitudinally, which releases the portion 19 from engagement with the recesses 22 and allows the shelf to swing downwardly.

In addition to this adjustment and locking means, provision is also made for permitting of the vertical adjustment of the shelf. This is accomplished by providing the support 9 with the pinion 11, which is in engagement with the rack bar 10. Thus, in order to lock the pinion against rotation and to thereby retain the support and its associated shelf in a given position of adjustment, there is provided a vertically disposed lock rod 23, which is slidably mounted in bearings 24, provided in connection with the support 9. The rod 23 is provided with a lateral pin 25, between which and the lower of the bearings 24 there is arranged a coil spring 26, the normal tendency of the latter being to force the lower end of the rod 23 into engagement with and between the teeth of the pinion 11, in order to prevent rotation of said pinion and to thereby retain the adjustment of the shelf support. The pinion, however, can be released by elevating the rod 23, and this is accomplished by manually grasping the projecting handle end 27 of the rod which extends outwardly to the head 13.

In operation, assuming that the shelf is in its lowered and collapsed position, as indicated by dotted lines in Figure 2, it is necessary merely in order to extend the shelf, to grasp the upper end of the lock rod 23. Then, by exerting an upward pull the lower end of said rod is released from engagement with the pinion so as to allow the latter to rotate freely on the rock bar 10. This, then, permits the shelf support to be raised to any desired height within the working limits of the structure, and upon the release of the rod the latter responds to the influence of the spring 26 to lock the pinion and to thereby retain the support in its adjusted position. Then, by grasping the outer end of the shelf the latter may be swung about the axis of the pin 16 to assume a substantially horizontal position, and, of course, retained in such position by the engagement of the lateral portions 19 of the rod 18 with the recesses 22. Of course, in collapsing the table the procedure as above given is reversed. It will be understood, of course, that the head, 13 is provided with a stationary lifting handle 28, which is arranged adjacent to the upper end of the rod 23, so that the operator in raising or lowering the support may conveniently grasp the exposed end of the lock rod 23 so as to conveniently govern the rotation or locking of the pinion 11.

In view of the foregoing it will be seen that the present invention provides a table especially adapted for use in hospitals or for other bed side purposes and one wherein the construction is such as to permit an attendant with the use of one hand to raise or lower the adjustable shelf and adapt the same to the requirements of a patient reclining on an adjoining bed. The construction has the advantage of being of strong lightweight construction and capable of being conveniently adjusted and positively retained in adjusted positions. It will of course be understood that various changes may be made in the construction of the table as herein disclosed without departing from the scope and substance of the following claims.

What is claimed is:

1. In apparatus of the character set forth, a support, a standard mounted for vertical adjustment in connection with said support, a shelf carried by said standard, a rack bar, stationarily secured to said support adjacent to said standard, a pinion rotatably carried by said standard and engaging the teeth of said rack bar, and manually operated means for controlling the rotation of said pinion.

2. In apparatus of the character set forth, a support including a side wall, a vertically disposed standard, a shelf pivotally connected with said standard, means for retaining said shelf in a plane perpendicular to said standard, a rack carried by said side wall, a pinion rotatably mounted within said standard in engagement with said rack, and a manually operated latch engagable with said pinion to control the rotation of the latter.

3. In apparatus of the character set forth, a support including a vertical side wall, a standard slidably mounted in bearings car-

ried by said wall, a shelf carried by the upper end of said standard, a stationary rack bar carried by the side wall of said support, a pinion carried by the standard and mounted for engagement with said rack bar, a spring pressed latch engaging with said pinion and having an operating handle located above said standard, and a lifting handle secured to the upper end of said standard located above and adjacent to the operating handle of said spring pressed latch.

In testimony whereof I affix my signature.

EDWARD R. ARMSTRONG.