March 18, 1958 W. SIMPKINS 2,826,858

ADJUSTING MECHANISM FOR A BOOK STAND

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FIG. 1.

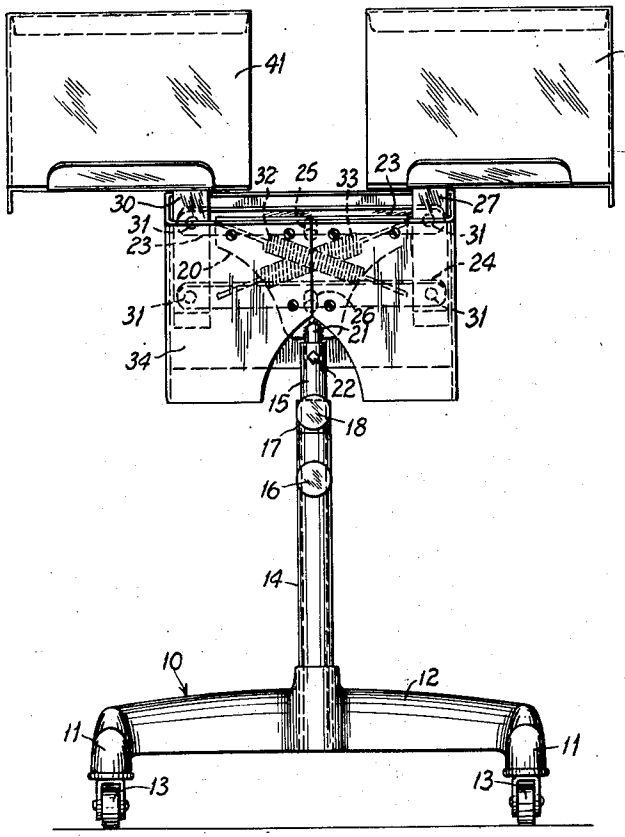



FIG. 2.

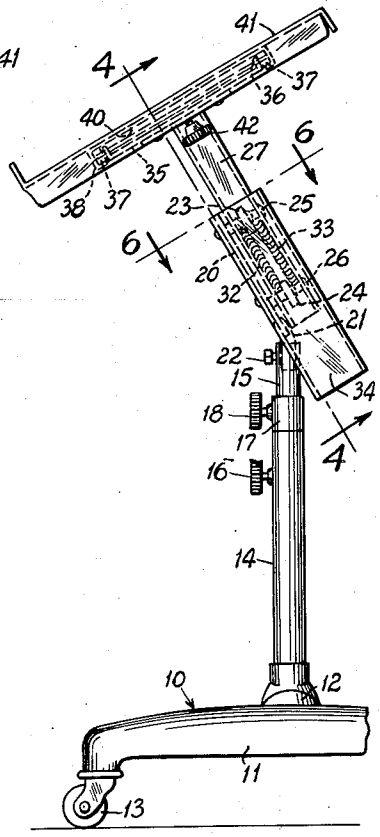
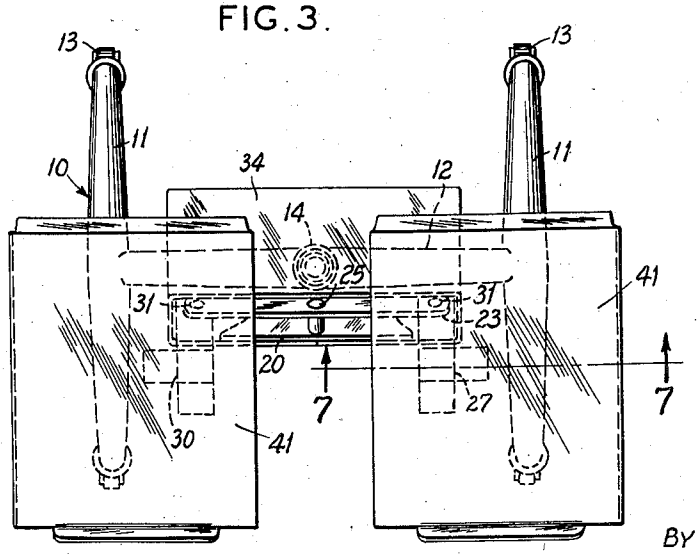



FIG. 3.




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FIG. 4.

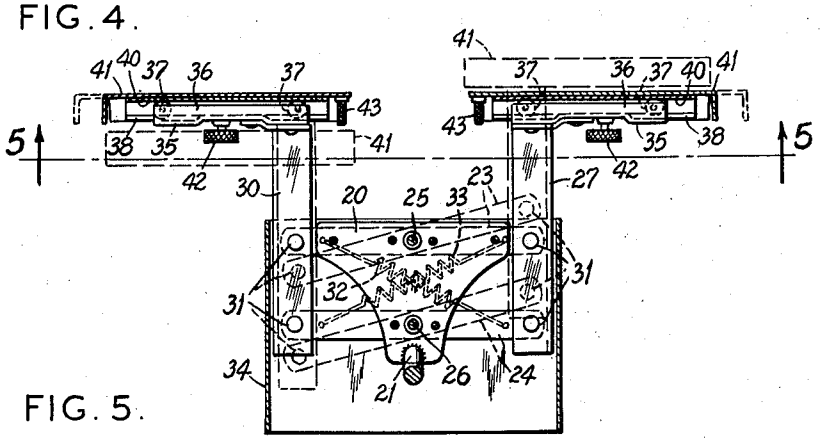



FIG. 5.

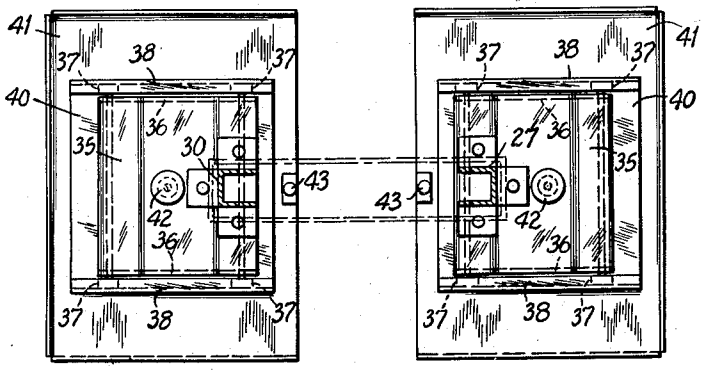



FIG. 6.

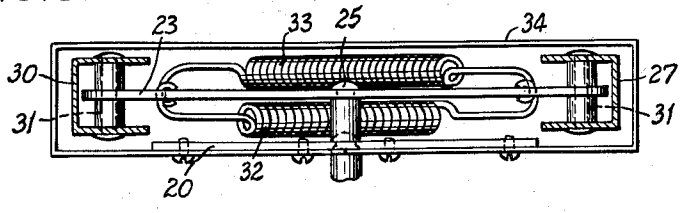



FIG. 7.

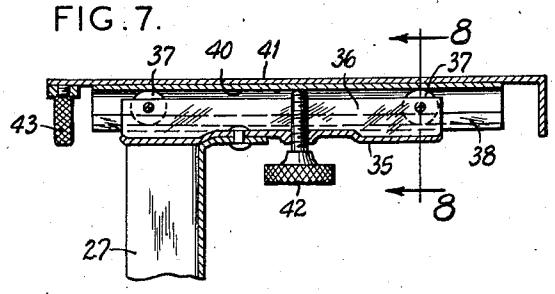
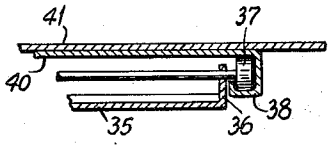



FIG. 8.




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# ADJUSTING MECHANISM FOR A BOOK STAND

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Application March 1, 1956, Serial No. 568,894

6 Claims. (Cl. 45—86)

This invention relates generally to improvements in an adjusting mechanism for a book stand, and more particularly to improved means in a device of this type adapted to support large, heavy and cumbersome books such as dictionaries, atlases, and other reference works in a manner which facilitates their use.

It is an important object of the present invention to realize a book stand having a plurality of tables that are adapted to support portions of a book, the tables being adjustable laterally to accommodate books of different widths and thicknesses.

Another important objective is realized by the provision of means in a book stand of this character which affords relative vertical adjustability of the tables such that the reading surfaces of portions of an opened book are maintained at the same level. This advantageous result is attained even though the book is not opened in the center, in which case one table supports the relatively thick portion at one level while the other table supports the thinner portion at another level.

Still another object is realized by means in connection with a stand of the character described which causes one table to move vertically in proportion to the movement of the other table when the weight of a portion or all of the volume is placed on such other table.

Another important object is realized by the provision of an improved mechanism for supporting the tables on the standard of the book stand, and the relative arrangement and connection of a resilient means with the component parts of the supporting mechanism, whereby the resilient means tends to maintain the tables at a predetermined position relative to one another. This resilient means and supporting mechanism interconnect the tables such that any portion of a book to be consulted will be supported and disposed in a substantially horizontal plane.

Yet another important object is achieved by realizing a book stand that is simple and durable in construction, economical to manufacture and automatic in operation. Still other important advantages are obtained in that the stand protects the cover, pages and binding of such books and minimizes wear, and hence is conducive to longer book life.

The foregoing and numerous other objects and advantages of the invention will more clearly appear from the following detailed description of a preferred embodiment, particularly when considered in connection with the accompanying drawings, in which:

Fig. 1 is a front elevational view of the book stand;

Fig. 2 is a fragmentary, side elevational view of the book stand shown in Fig. 1;

Fig. 3 is a top plan view of the book stand shown in Fig. 1;



Fig. 4 is a cross sectional view of the book stand as seen along line 4—4 of Fig. 2, the dotted lines showing an adjusted position of the component parts;

Fig. 5 is a view of the book stand, partly in cross section, as seen along line 5—5 of Fig. 4;

Fig. 6 is a view, partly in cross section, as seen along line 6—6 of Fig. 2;

Fig. 7 is an enlarged view, partly in cross section, as seen along line 7—7 of Fig. 3, and

Fig. 8 is a fragmentary view in cross section, as seen along line 8—8 of Fig. 7.

Referring now by characters of reference to the drawings, the book stand includes a base structure of H-shaped configuration, generally indicated at **10**, having laterally extending leg portions **11** and a bridging intermediate portion **12**. A swiveled roller assembly **13** is connected to and carried by each end of the leg portions **11**, the roller assemblies **13** being adapted to support the book stand on a subjacent surface such as a floor as is shown in Figs. 1 and 2.

Extending upwardly from the medial portion of intermediate base portion **12** is a tubular standard **14**. A second cooperating standard member **15** is telescopically received in the upper end of standard **14**, and is adapted to be fixed in adjusted extended position by a clamping member **16** carried by standard **14**. A collar **17** is disposed about standard member **15** and is normally seated on the top of standard **14**. A second clamping member **18** is carried by collar **17** and is utilized to fix collar **17** to standard member **15**.

The standard member **15** is adjusted telescopically with respect to standard **14** to raise or lower the book stand to the desired height, this procedure being accomplished with clamping means **16** and **18** in an unloosened condition. After the stand is adjusted to the desired height, the collar **17** is brought down to the top of standard **14** and clamping means **18** is secured to standard member **15**, thus fixing the stand at the desired height yet permitting a swiveling movement. Clamping means **16** may then be utilized to fix standard member **15** and the parts carried thereby in a desired swiveled position.

A frame member **20** including a lowermost neck portion **21** is carried by standard member **15**, the neck portion **21** being secured by bolt **22**. The frame member **20** is inclined at an angle from the vertical as is clearly shown in Fig. 2.

Secured by pivot means to frame member **20** is a pair of arms **23** and **24** arranged in spaced parallel relation. The arm **23** is connected to frame member **20** by pivot pin **25**, best shown in Fig. 4, while arm **24** is connected to frame member **20** by pivot pin **26**. The pivot pins **25** and **26** maintain arms **23** and **24** in spaced relation to frame member **20** for reasons which will later appear. Under normal conditions of usage when the stand is not being utilized to support a book, the arms **23** and **24** are maintained in a horizontal position as is shown in Figs. 1 and 2.

A U-shaped channel member constituting a post **27** is pivotally attached to one end of each arm **23** and **24**, and a similar post **30** is pivotally connected to the opposite end of each of arms **23** and **24**. As is more clearly shown in Fig. 6, the arms **23** and **24** are located within the U-shaped channel of posts **27** and **30**, and are attached by hinge pins **31**.

A tension spring **32** is located between arms **23** and **24** and frame member **20**, one end of spring **32** being fixed

to one end of arm 23 at the left of pivot pin 25 (Figs. 1 and 4), while the opposite end of spring 32 is attached to one end of arm 24 at the right hand side of pivot pin 26. A second tension spring 33 is located on the opposite side of arms 23 and 24, the spring 33 having one end attached to arm 23 at the right hand side of pivot pin 25 and the other end attached to arm 24 at the left hand side of pivot pin 26. Thus it is seen that springs 32 and 33 are located on opposite sides of arms 23 and 24 and are diagonally related.

A housing 34 is secured to frame member 20 and serves to enclose the supporting mechanism described above the housing being open at the top to permit movement of posts 27 and 30.

Each of posts 27 and 30 serve to support a table assembly. Because the table assemblies are identical in structure, a detailed description of one will suffice for the other.

For example, post 27 is riveted to plate member 35 (Figs. 7 and 8) which includes upstanding side flanges 36. Supported by flanges 36 are a plurality of rollers 37 which are disposed outwardly of plate member 35. The rollers 37 engage a track formed by inturned flanges 38 of a second plate member 40. A table 41 is fixed to the second plate member 40, and serves to support a book or a portion thereof.

From the above description of the table assemblies, it is seen that tables 41 may be moved toward and away from each other depending upon the size of the reference books supported on the tables. During the adjustment of tables 41, the track formed by second plate member 40 engages the rollers 37. After the tables 41 are moved to the desired position they may be fixed in such position by a clamping means which consists of a screw element 42 threadedly received by plate member 35. Upon tightening of screw element 42, the upper end of screw element 42 engages second plate member 40, and hence urges the rollers 37 tightly against the inturned flange portions 38.

A stop member 43 is dependingly carried by each of tables 41, the stop members 43 preventing accidental or unintentional removal of the tables from the table assemblies. The stop member 43 consists of a threaded knob that abuts the end of plate member 35 to realize this result. Of course, the threaded knob may be removed to permit removal of the table 41.

When the book stand is utilized for supporting a reference book, one portion of the book is placed on one table 41 and the other book portion on the other table 41. If one such book portion is thicker and hence heavier, the weight will move the table 41 and the post supporting such book portion downwardly. In such case, the other table is moved upwardly in like proportion, as is suggested by the dotted lines in Fig. 4. When the tables are disposed as described above and indicated in Fig. 4, the effective length of spring 32 will be shortened and hence the tensional force is lessened, while the effective length of spring 33 is lengthened and the tensional force is increased. The resultant force of springs 32—33 on arms 23—24 tends to restore the arms 23 and 24 to the horizontal position shown in full lines in Fig. 4, and hence tends to restore the tables 41 to the same plane. Because springs 32 and 33 are located on opposite sides of arms 23 and 24, there is not any physical interference as a result of the diagonal relation of such springs.

Although the invention has been described by making detailed reference to a single preferred embodiment, such detail is to be understood in an instructive, rather than in any restrictive sense, may variants being possible within the scope of the claims hereunto appended.

I claim as my invention:

1. A book stand comprising a base, a standard supported by said base, a frame member carried by said standard, a pair of arms arranged in spaced parallel relation, means pivotally connecting the arms to said frame member, a pair of tables for supporting a book, a pair of posts each connected to one of said tables, one of said posts being hingedly connected to each of said arms at one side of said pivot means, and the other post being hingedly connected to each of the arms at the other side of such pivot means, and resilient means connected to and between said arms tending to maintain said tables in a predetermined position relative to one another.

2. A book stand comprising a base, a standard supported by said base, a frame member carried by said standard, a pair of arms arranged in spaced, parallel relation, means pivotally connecting a medial portion of each arm to said frame member, a pair of tables for supporting a book, a pair of posts each connected to one of said tables, one of said posts being hingedly connected to each of said arms on one side of said pivot means, the other post being hingedly connected to each arm on the opposite side of said pivot means, and spring means diagonally inter-connecting said arms and arranged between said pivot means so as to tend to maintain said tables in a predetermined position relative to one another.

3. A book stand comprising a base, a standard supported by said base, a frame member carried by said standard, a pair of arms arranged in spaced, parallel relation, pivot pins connecting a medial portion of said arms to said frame members, said pins maintaining said arms in spaced relation to said frame member, a pair of tables for supporting a book, a pair of posts each connected to one of said tables, one of said posts being hingedly connected to each of said arms at one side of said pivot pins, and the other post being hingedly connected to each of the arms at the other side of such pins, a first tension spring located between said arms and frame member, said first spring being attached to one arm at one side of its pivot pin and attached to the other arm at the other side of its pivot pin, and a second tension spring located on the opposite side of said arms, said second spring being attached to the respective arms at opposite sides of their pivot pins from the first said spring, said springs diagonally interconnecting said arms, and arranged in crossed diagonal relation and tending to maintain said tables in a predetermined position relative to one another.

4. A book stand comprising a base, a standard supported by said base, a pair of post elements, means mounting said post elements on said standard and permitting relative vertical adjustment of said post elements, a pair of table elements each supported by one of said post elements, a track means carried by one of said elements and a track following means carried by the other said element, said track and track-following means permitting relative movement of said table elements toward and away from each other, and fastening means selectively retaining said table element in adjusted positions.

5. A book stand comprising a base, a standard supported by said base, a pair of post elements, means mounting said post elements on said standard and permitting relative vertical adjustment, a plate element fastened to each post, a pair of tables each supported by one of said plate elements, a track means carried by one of said elements, a track following means carried by the other said element and adapted to engage said track means, the track and track-following means permitting relative movement of said table elements toward and away from each other, and fastening means between said plate elements and said table elements for selectively retaining said table elements in adjusted positions.

6. A book stand comprising a base, a standard supported by said base, a pair of posts, means mounting said posts on said standard and permitting relative vertical adjustment, a plate element fastened to each post, the pair of tables each supported by one of said plate elements, depending track members carried by each table, said track members having inturned portions, rollers carried by

each plate element and adapted to be located operatively in said track members and located over said inturned portions, the track elements and cooperating rollers permitting relative movement of said tables toward and away from each other, and a screw element carried by each of said plate elements, said screw elements selectively and operatively engaging the table so as to force said rollers against said inturned track portions, the screw elements constituting fastening means between said plate elements and said tables for selectively retaining said tables in adjusted positions.



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