May 21, 1957 W. L. DROMMER 2,792,944

BOOKKEEPING STAND

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FIG. 1

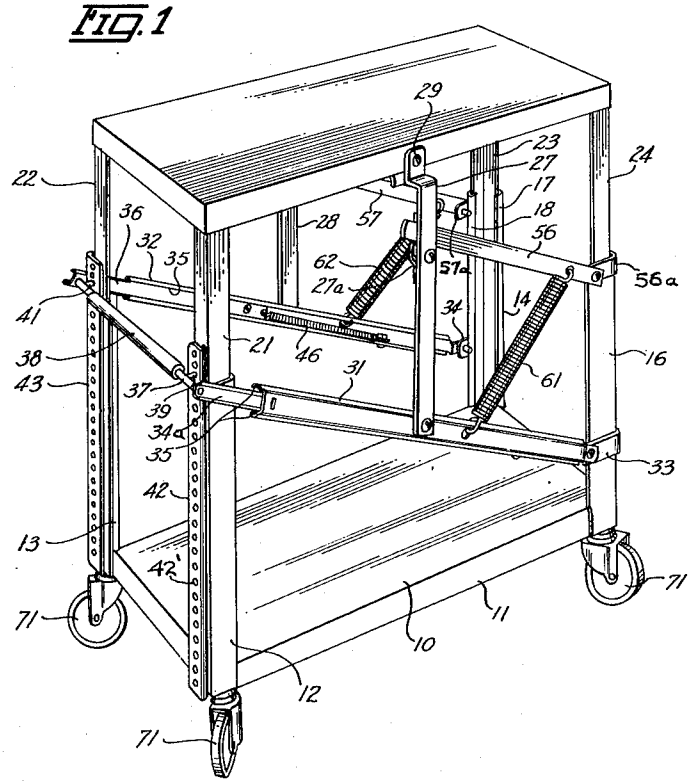
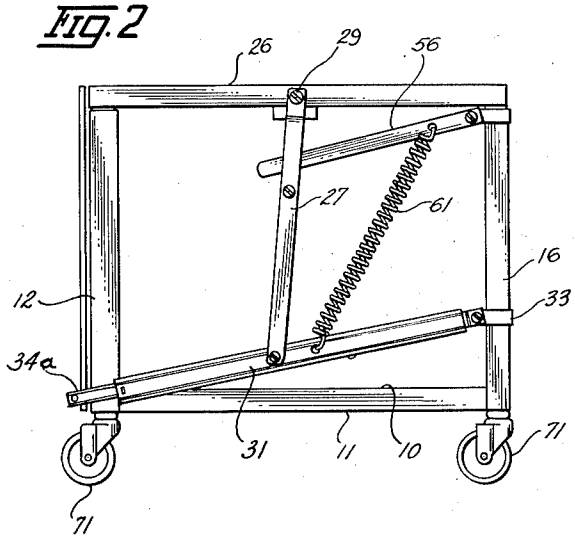


FIG. 2



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FIG. 3

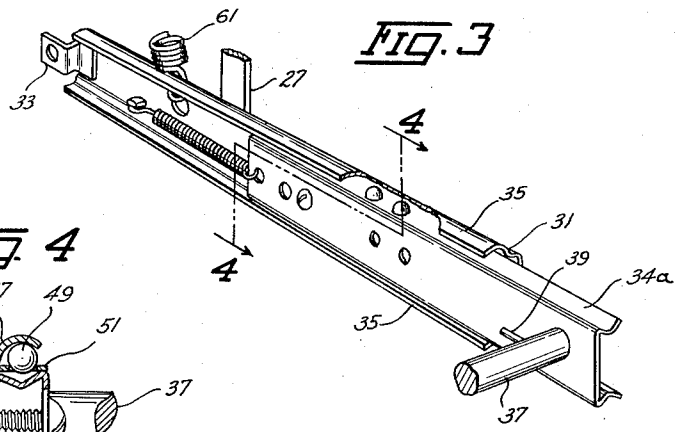


FIG. 4

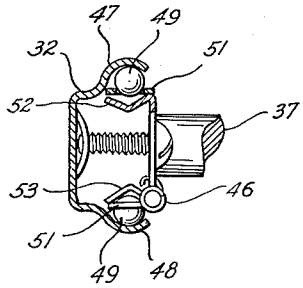


FIG. 6

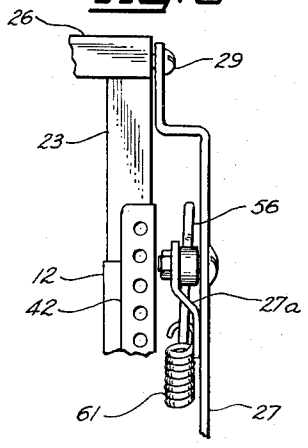
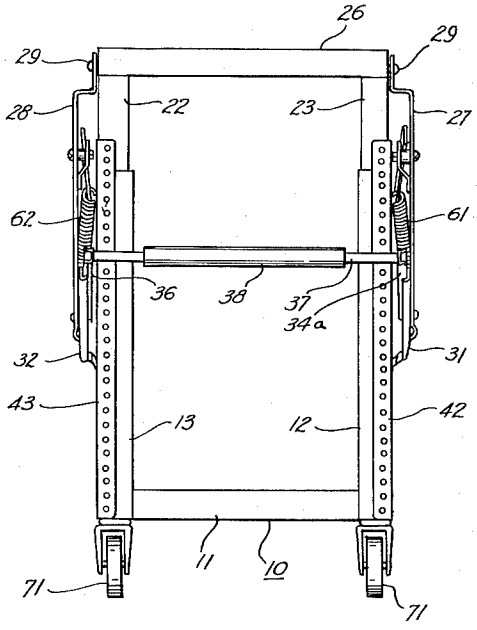


FIG. 5



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BOOKKEEPING STAND

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Application April 7, 1954, Serial No. 421,619

1 Claim. (Cl. 211—136)

This invention relates to bookkeeping stands and has particular relation to a stand for trays, ledgers and the like which may be raised and lowered to any desired height for most convenient use. There have been several stands of this type proposed in the past, but some marked disadvantages have become apparent in the use of such devices.

Some of the stands have been so constructed that when they are in the lowered or depressed position, the locking mechanism projects forwardly from the stand and snags the operator's stockings and scuffs their shoes. Another disadvantage is that only end travel locking positions were provided so that the table of the stand could be locked only in the extreme upper or lower positions.

Still another disadvantage of the devices of the prior art was the multiplicity of linkages, levers and supports necessary for effecting raising and lowering of the table of the stand.

It is among the objects of my invention to provide an adjustable stand which may be raised and lowered by only a simple, vertical movement of the operating means and in which locking of the operating means is effected merely by a longitudinal, in or out movement of the handle which actuates the mechanism.

Another object of my invention is to provide a linkage raising and lowering structure that permits a spring biasing action to be effected smoothly and uniformly over the entire range of movement of the table top.

Still another object of my invention is to provide a very simple and efficient locking means for stands which has a minimum of working parts and in which the actuating and control parts do not project unduly from the front of the stand.

Still another object of the invention is to provide an improved and simplified table raising and lowering structure.

Other and further features and objects of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawings and following specifications, wherein is disclosed a single exemplary embodiment of the invention, with the understanding, however, that such changes may be made therein as fall within the scope of the appended claim, without departing from the spirit of the invention.

In said drawings:

Figure 1 is a view in perspective of a stand constructed according to a preferred embodiment of my invention,

Figure 2 is a view in side elevation of the stand in the lowered position, illustrating how very little of the actuating mechanism is at the front of the stand,

Figure 3 is a view in perspective of the operative portion of the actuating mechanism, illustrating the means by which the actuating mechanism may be moved in and out and how it is locked in position.

Figure 4 is a view in cross section of the guide and slide illustrated on line 4—4 in Figure 3.

Figure 5 is a front elevational view of the stand, and

Figure 6 is a fragmentary view illustrating the roller joint whereby the vertical link and the spring biased horizontal link are operatingly connected to prevent binding.

Referring then to the drawings:

A preferred embodiment of my invention includes a lower shelf **10**, having depending flanges **11** on four sides thereof to which vertical angle corner members **12**, **13**, **14** and **16** are fixed as by welding and the like. The angles **12**, **13**, **14** and **16** are provided with in-turned flanges such as illustrated at **17** and **18** so that four other post-like angle members **21**, **22**, **23** and **24** may be slidably received for vertical movement in the inner sides of corner posts **12**, **13**, **14** and **16**.

The upper angles **21**, **22**, **23** and **24** are welded or otherwise secured to the upper shelf **26** and the upper shelf may be raised and lowered by pushing up or down at the center of the shelf by means of the links **27** and **28**, which are pivotally secured to the shelf by pivot pins such as **29**.

A pair of operating levers **31** and **32** are pivotally engaged by means of brackets **33** and **34** to the lower portions of the rear legs **14** and **16**. These operating levers **31** and **32** likewise have in-turned flanges such as illustrated at **35**, to receive strap-like slides **34***a* and **36** and the outer ends of the strap-like slides are joined by means of a cross shaft **37**, which cross shaft is provided with a handle such as the rubber hose **38**. The cross shaft is provided with a pair of inwardly projecting pins such as illustrated at **39** and **41** and these pins are so positioned that they may engage any of the holes in the vertical straps **42** and **43**.

It will be noted that the vertical straps are provided with a large plurality of closely spaced holes to secure a large range of locking positions.

Springs **44** and **46**, in the opposed lever members **31** and **32**, are connected from the inner ends of the slides **34** and **36** and to the rear ends of the guides **31** and **32** so as to normally hold the pins **39** and **41** in the engaged position.

The guides **31** and **32** are provided with cupped flanges such as illustrated at **47** and **48** to receive anti-friction ball bearings **49** and these anti-friction ball bearings are held in place by races **51** and are received on inwardly cupped portions **52** and **53** on the inwardly projecting flanges of the slides.

The oppositely disposed links **56** and **57** are pivotally engaged to ends of the members **16** and **14** by means of brackets **56***a* and **57***a*. It will be noted that these link members extend inwardly to engage the vertical links **27** and **28** at a point close to their upper ends. To permit the longitudinal, slideable movement of these link members **56** and **57** in relation to the links **27** and **28**, I have provided a roller assembly such as shown at **27A** comprising a roller **27***b*, axle bolt **27***c* and axle plate **27***d* mounted on the links **27** as shown in Figure 6.

The operation of the foregoing linkage may be better understood by referring to Figures 1 and 2. It will be noted that the leg **16**, operating lever **31**, link **27** and link **56** form a rectangle, the spring **61** being positioned between two opposite corners thereof. As the table top is lowered, this rectangle assumes a diamond shape, extending the spring **61** to its full length. The spring continually exerts a counterbalancing force to return the various elements to their original position, thus raising the table top.

The amount of the counterbalancing force to be applied may be controlled by using various size springs graded according to the load which might be placed on the table top in various types of usage.

It will be further noted that the roller type joint between the links **27** and **56** prevents any binding action which might otherwise be caused as a result of the fixed position of the link **56** in relation to the table top and

the leg 16. The roller joint also provides smooth, uniform action of the table top throughout the full range of its movement.

The stand is preferably mounted on castered wheels such as illustrated at 71 so that it may be readily moved about. It is apparent that the shelf 26 may be easily raised and lowered by raising and lowering the handle 38 and, of course, engagement and disengagement for locking and unlocking the actuating mechanism is afforded by merely pulling out or releasing the handle 38. The weight of books, ledgers, trays and the like is at least partially counterbalanced so as to minimize the force necessary to raise and lower the table.

Although I have described a specific embodiment of my invention, it is apparent that modifications thereof may be made by those skilled in the art. Such modifications may be made without departing from the spirit and scope of my invention as set forth in the appended claim.

I claim as my invention:

In a bookkeeping stand of the type described, a base member comprising a shelf having an upwardly extending member at each corner thereof, a second shelf positioned above said first mentioned shelf and having downwardly extending members adapted to slidably engage the upwardly extending members on the first mentioned shelf, a pair of vertically downwardly extending linking means pivotally attached to said upper shelf, said downwardly extending linking means having rollers thereon, lever means pivotally mounted on the upwardly extending members of the lower shelf and adapted to slidably engage said rollers, a pair of channel-like lever arms pivotally connected to the upwardly extending members of said lower shelf at a point below the pivotal connection of said first mentioned lever arms, said linking means being pivotally connected to said second lever arms, spring means disposed between said first mentioned and said second mentioned lever arms, slide means mounted in said channel-like lever arms and having bearings therein to prevent binding in relation thereto, spring means adapted to bias said slide members inwardly, a cross bar connecting said slide means relative to each other, locking means on said cross bar, and a plurality of openings on said upwardly extending shelf members adapted to engage said locking means.

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