

[54] **DESK MOVING DEVICE**

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214/392; 280/414 R, 482; 254/2 R, 2 C

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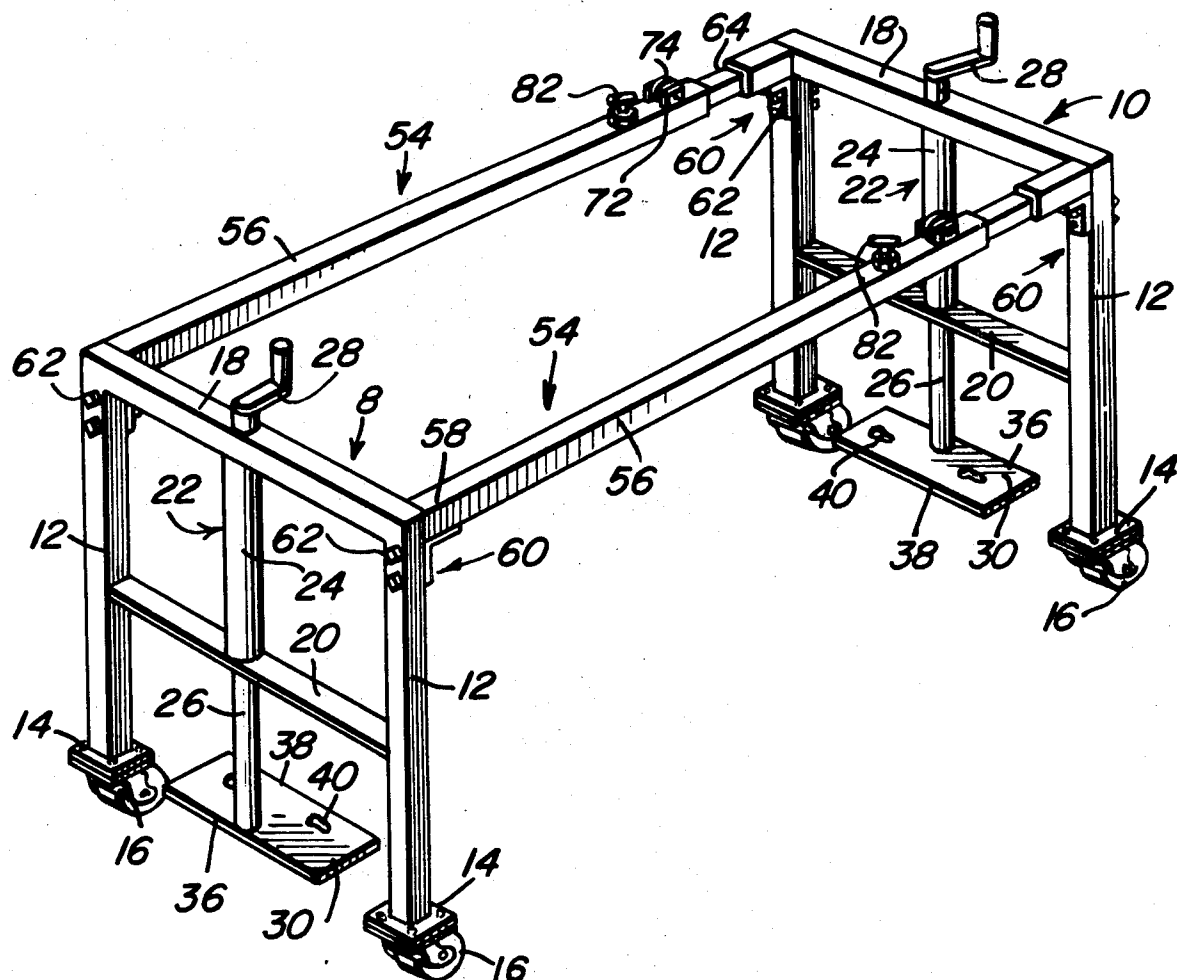
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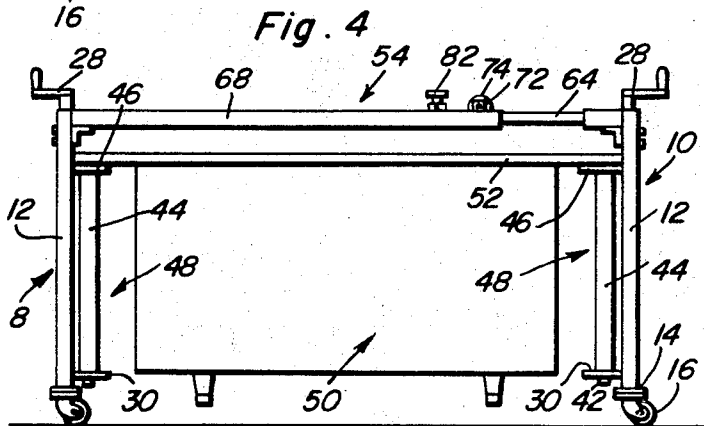
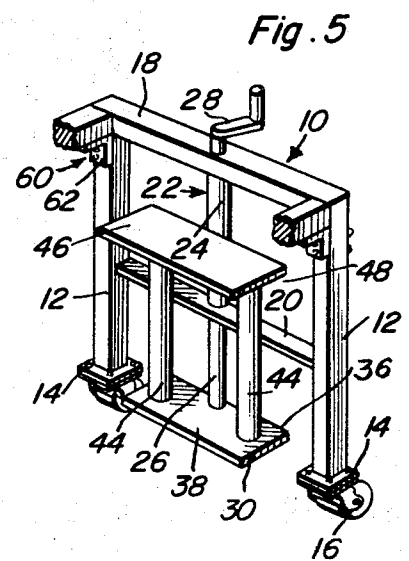
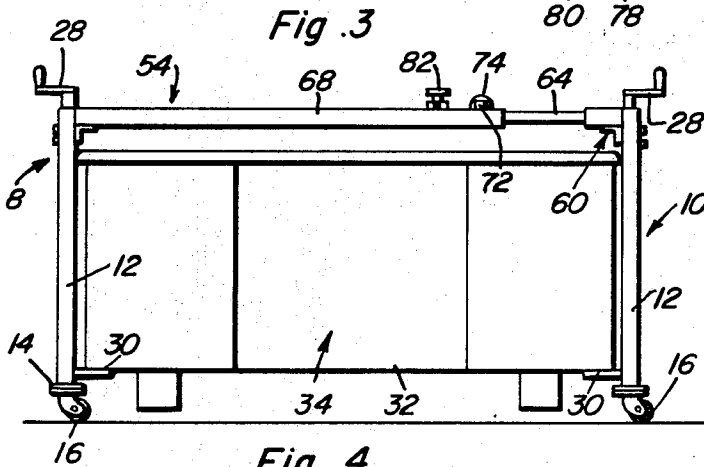
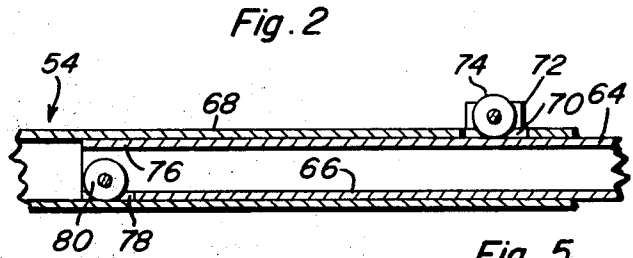
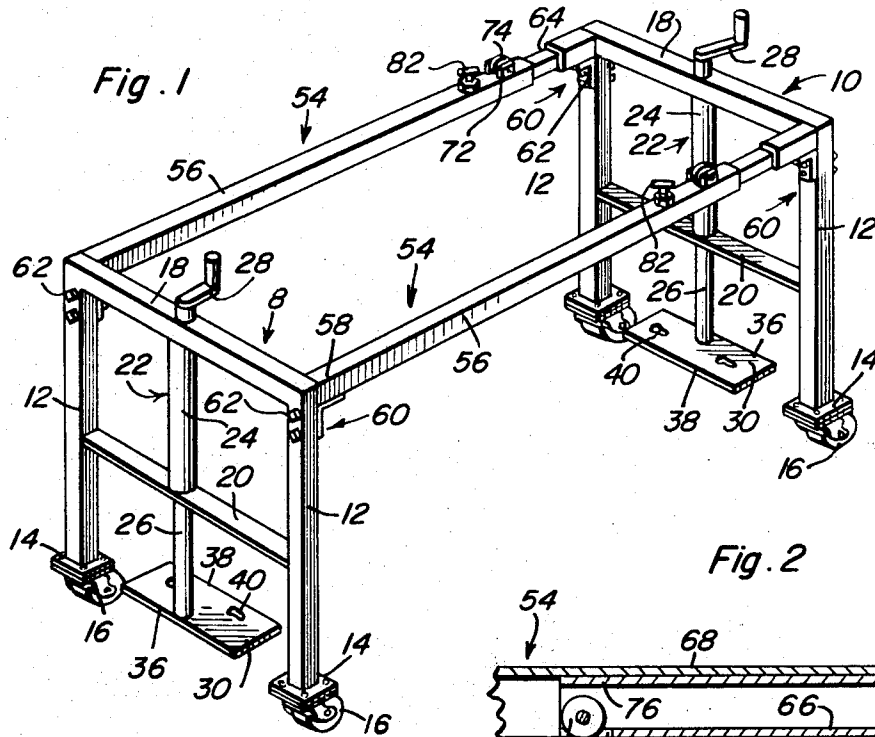
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[57] **ABSTRACT**

A load straddling, lifting, handling and transporting device which enables a single user to clampingly harness a heavy office desk, or the like, and move same from a room to facilitate cleaning. It comprises a frame structure having a pair of vertical leg frames whose upper ends are joined by extensible and retractable connecting rails. The lower ends of the legs are provided with casters whereby the respective leg frames serve as rollable trucks. Each leg frame is provided with manually controllable desk engaging lifting and lowering means which serves to accommodate commonly used desks. This device is ideal for classroom use. It enables one man to handle and move the desks while other persons attend to the room cleaning needs.

4 Claims, 5 Drawing Figures





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DESK MOVING DEVICE

This invention relates to load accommodating, handling and transporting devices such as facilitate handling and moving heavy and unwieldy furniture and pertains, more particularly, to a device which will enable a school janitor to clampingly hoist a heavy classroom desk and move it from place to place and in so doing, to enable him or his assistants to expeditiously clean the classroom.

There has long existed a need for an easy-to-use device which will save time and labor when one is called upon to handle and move heavy furniture, for example, portable but unwieldy desks. The problem of desk handling and moving is repeatedly encountered by school janitors and assistants where, generally stated, several or more persons are called upon to struggle with and move desks from place to place for classroom cleaning requirements. It is common and prevailing practice during each school break to have to move virtually all of the equipment out of the offices and classrooms and to thus prepare, scrub and wax the floors. Handling and moving heavy desks is indeed a laborious and often dangerous chore. It follows that the object of the present invention is to provide a simple and practical desk-straddling, harnessing and handling, as well as transporting, device through the medium of which a single person can lift and move a heavy desk out of the room by way of the doorway and return it in due time after the scrubbing, cleaning and waxing service has been completed. Whereas, under prevailing conditions, anywhere from two to four men are required for desk handling and moving, a single man can do the job, leaving the other men free to take care of cleaning requirements and preserve the floor surfaces.

Persons conversant with the field of invention under consideration are aware that many and varied types of trucks, frame structures and the like have been devised to facilitate lifting and handling heavy loads. For example, and for background purposes and wherein straddle-type hoisting devices have been offered for use, attention is directed to a lifting device for plumbing fixtures disclosed in U.S. Pat. No. 3,262,590, issued to William E. Lynn, cited here because it shows rollable end frames, connecting means and jack means associated with the leg frames. The reader may also desire to refer to the mobile self-loading straddle truck covered in U.S. Pat. No. 3,315,829, issued to Plinio L. Cellini.

Briefly, the straddling, lifting and moving device herein disclosed is characterized by a furniture, a desk for example, straddling, harnessing, handling and transporting frame structure, more particularly, an adaptation which comprises a pair of aligned vertically disposed inverted U-shaped frames herein designated as leg frames or end frames and adapted to assume upstanding positions adjacent and parallel to the exterior surfaces of the oriented vertical ends of the desk which is to be handled and moved. Each leg frame is provided at the lower ends of the legs with suitable floor engaging casters, whereby the caster equipped frames constitute simple manually maneuverable load handling trucks. These two leg frames are provided with desk engaging, lifting and lowering means. In addition, means is provided to operatively link and connect the upper portions of the two leg frames together. This means is adapted when in use to span the top of the desk lengthwise in a plane above the plane of the top and is longi-

tudinally adjustable to cooperate with and accommodate desks of varying lengthwise dimensions. With the rollable leg frames clamped or attached to the desk-ends, either top or bottom, the desk with the device attached can be rolled through a doorway and thus moved out of the room while the floor and other surfaces are being waxed and cleaned, as the case may be.

More specifically, novelty is predicated not only on the simple truck-like leg frames but the extensible and retractable rails which are utilized to connect the upper ends of the leg frames together. Then too, novelty is predicated on providing each end frame with a screw-type lifting jack, the lower portion of which is provided with a ledge-like desk engaging and lifting plate. This plate in turn serves to accommodate an attachable and detachable adapter having an upper plate which comes into use when the top of the desk has a marginal edge portion projecting beyond and overhanging the vertical exterior desk surfaces.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a view in perspective of a desk handling and moving device constructed in accordance with the principles of the present invention and showing all of the component parts readied for use;

FIG. 2 is a fragmentary detail sectional view showing component portions of an extensible and retractable connecting rail and the detailing of the anti-friction rollers which are employed to assist in adjusting the telescoping adjustable parts;

FIG. 3 is a view on a smaller scale, which shows the device of FIG. 1 and how it is applied (minus the adapters) to engage the underneath side of the desk and to lift and handle the same;

FIG. 4 is a view similar to FIG. 3 and which shows a slightly different type of a desk having the projecting and overhanging marginal top portion and wherein the adapters are brought into play to facilitate handling this type of desk; and

FIG. 5 is a fragmentary perspective view showing one end frame or leg frame and, more particularly, showing how the ledge-like lower plate serves to accommodate the attaching standards of the adapter and complementary upper plate.

With reference in particular to FIGS. 1 to 3, inclusive, it will be noted that the frame structure is such that when it is in use, as illustrated in FIG. 3, it can be said to straddle and embrace the desk for lifting, moving and transporting purposes. The vertical leg frames or end frames are identical in construction, the one at the left being denoted by the numeral 8 and the one at the right by the numeral 10, and a description of one end frame will suffice for both. The end frame is of inverted one-piece U-shaped form and comprises hollow or equivalent depending coplanar legs 12 whose lower flanged ends are provided with swivelly attached casters 16. The upper end portions of the legs are joined by a horizontal bight portion 18. The numeral 20 designates a horizontal brace which is mounted between the median portions of the respective legs 12.

The central portions of the bight portions 18 and 20 are apertured to accommodate a suitably constructed

and applicable load-lifting jack 22. This jack comprises an internally screw-threaded cylinder (not detailed) denoted at 24 and which is positioned between the apertured portions of the component parts 18 and 20 and is suitably secured in place to accommodate the cooperating screw-type lifting and lowering shaft 26. The upper end portion of the shaft is provided with a conveniently accessible hand-crank 28. The lower end of the shaft is provided with a right angularly disposed fixedly mounted lower plate 30 which functions as a ledge and when in use is positioned beneath the bottom surface 32 of a conventional desk 34, illustrated in FIG. 3. The shaft 26 is integrally joined to a median part of the outer marginal edge portion 36. The inner edge portion 38 projects sufficiently far beyond the shaft that it can engage beneath the bottom surface 32 for lifting purposes, as evident in FIG. 3. The plate 30 is provided (FIG. 1) with key-hole keeper slots 40. It may be pointed out in this connection that the keeper slots serve to accommodate headed studs or connectors 42 (FIG. 4) which are carried (not detailed) on the lower ends of depending leg-like members, referred to for convenience as standards 44 and whose upper ends support an upper plate 46. These two standards and the plate 46 constitute a feasibly usable adapter unit 48. Normally, the plates 30 are engaged beneath the type of desk shown at 34 in FIG. 3. When, however, the type of desk is that illustrated in FIG. 4 at 50, it will be evident that the marginal portions of the top of the desk project outwardly and overhang the body of the desk as at 52. Under the circumstances, the lower plates 30 would not function properly. It follows that it is then necessary to bring into use the adapters 48 and to attach the same as shown in FIG. 5 and use them in the manner shown in FIG. 4.

The respective trucks, leg frames 8 and 10, are assembled and operatively linked and joined together by a pair of coplanar spaced parallel longitudinally extensible and retractable members, which are here referred to as connecting rails 54. Each rail comprises a main tubular member 56 having an outer end 58 which is joined by an angle bracket 60 to the associated leg 12. To accomplish this, the cleats or brackets 60 are welded on the end portions 58 and are secured to the leg by way of accessible bolts 62. It follows that the end frames can be unbolted and dismantled for compactness and convenience in shipping and storing. Continuing with the rail, it will be seen that the complementary rail member is denoted at 64 and has an end portion 66 telescoping into connecting end portion 68 of the rail member 56. The rail member 56 is provided with an aperture 70 and upstanding ears 72 supporting a free-turning anti-friction roller 74. This roller is so arranged that the periphery thereof has rolling contact with the telescoping rail member 64. Then, too, the free end portion 76 of the rail member 64 is provided with a notch 78 to accommodate the marginal portion of a free-turning suitably mounted additional anti-friction roller 80. These anti-friction rollers obviously function to telescopically and slidably interconnect the members 56 and 64 of each connecting rail. In actual practice, it is desirable to provide a setscrew 82 which is carried by each member 56 and which is releasably engageable with the telescoping member 64 in a manner to retain the rail members in a given or set position.

By rigidly but adjustably joining the roller equipped leg frames, it will be evident that these leg frames can

be adjusted toward and from each other to accommodate desks of varying length dimensions.

The frame structure is adequately shown and presented in FIG. 1 and is used in the manner illustrated in FIG. 3 when the type of desk is that which is illustrated at 34. The jack means 22 can be raised and lowered to hoist the desk sufficiently for floor clearing and moving purposes. When the desk is of the type as shown in FIG. 4 at 50, the same frame structure (FIGS. 1 and 3) is used. On the other hand, the adapters 48 are brought into play so as to provide the elevated plates 46 for desk hoisting purposes, as illustrated in FIG. 4.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

I claim:

1. For use when called upon to handle a relatively heavy load, a portable office desk for example, a desk straddling, harnessing, handling and transporting device comprising a pair of aligned vertically disposed leg frames adapted to assume positions adjacent and parallel to exterior surfaces of oriented vertical ends of the desk, each leg frame constituting a manually maneuverable truck, each leg frame being provided with desk engaging, lifting and lowering means, and means operatively linking and connecting upper portions of said leg frames together, said means being adapted when in use to span the top of the desk lengthwise in a plane above the plane of said top and being longitudinally adjustable to cooperate with and accommodate desks of varying lengthwise dimensions, each leg frame being of inverted U-shaped form and embodying a pair of like coplanar vertical legs having upper ends integrally joined by a horizontal bight portion and lower ends each provided with a surface contacting caster, the means linking and connecting the upper portions of said leg frames being longitudinally extensible and retractable and permitting said leg frames to be adjusted toward and from each other while, at the same time, retaining spaced parallel relationship, said desk engaging, lifting and lowering means comprising a jack having complementary plate means releasably and selectively engageable with predetermined portions of the desk, said plate means comprising (1) a lower plate which constitutes a ledge-like foot plate and (2) a complementary alternatively usable upper plate aligned with and disposed in a plane directly above said lower plate and adapted to engage an underneath side of an outstanding overhanging flange marginally encompassing the top of said desk, said upper plate being detachable from said lower plate and, when bodily removed, rendering said lower plate unobstructedly functional.

2. The device defined in claim 1, and wherein said upper plate is an integral component part of an attachable and detachable adapter and is provided with a pair of depending standards having headed stud means at their lower ends detachably connectible with keeper slots provided therefor in the cooperable lower plate.

3. The device defined in claim 1, and wherein said plates are rectangular in plan, have upper flat faces, are alike in size, said upper plate having a bottom side provided with a pair of depending coplanar standards

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which, in conjunction with said upper plate, constitute an alternatively usable adapter, said standards having lower ends equipped with complemental means which is attachably and detachably connectible with said lower plate when being used.

4. A heavy furniture handling device capable of effectual use by a single workman and expressly designed and adapted to straddle, harness, lift and transport a heavy unwieldy desk, said device comprising a pair of like complemental inverted U-shaped leg frames, each frame comprising a pair of like coplanar vertical legs having upper ends joined by a horizontal bight portion and lower ends each provided with a surface contacting 10
caster and thus providing a pair of manually maneuverable load handling trucks, each leg frame provided with a vertically disposed centrally located load lifting and lowering jack, said jack having a lower end provided with a lower horizontal ledge-like foot plate and at an upper end with an accessible jack operating hand- 15
crank, a pair of spaced parallel horizontal coplanar leg frame assembling and connecting rails in a plane with and connected at outer ends to upper corner portions of said leg frames, each rail being adjustably extensible 20

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and retractable and comprising a first elongated tubular member which has an outer end fixed to a cooperating leg frame, and a second elongated member which also has an outer end fixed to a cooperating leg frame, the inner end of said second member telescoping slid- 5
ingly into the hollow portion of said first tubular member, said first and second members being provided with associatively cooperable interior and exterior anti-friction means which functions to assist in adjusting said members relative to each other, one of said mem- 10
bers being equipped with a setscrew which is releasably engageable with the other member in a manner to retain the members against relative sliding movement, and complemental alternatively usable upper plate 15
aligned with and disposed in a plane directly above and coordinating with said lower plate and adapted to engage an underneath side of an outstanding overhanging flange encompassing the top of said desk, said upper 20
plate being detachable from said lower plate and, when bodily removed, rendering said lower plate unobstructedly functional.

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