Jan. 10, 1961 M. M. VINSON 2,967,627

DOOR DOLLY AND JACK

Filed June 23, 1958

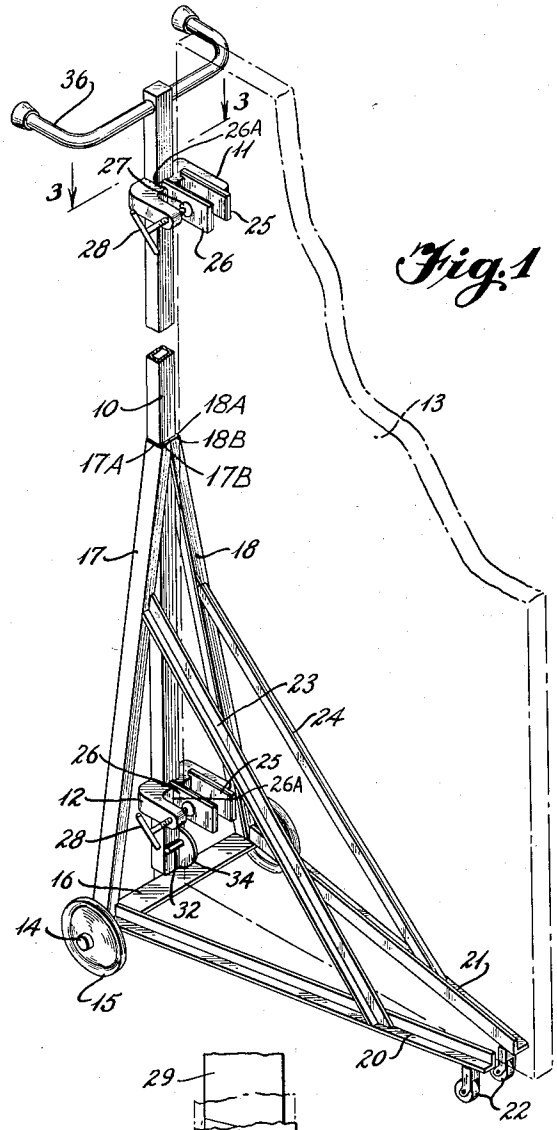


Fig. 1

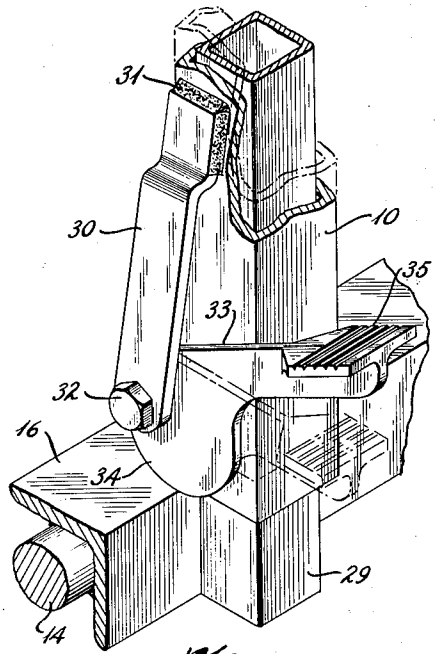


Fig. 2

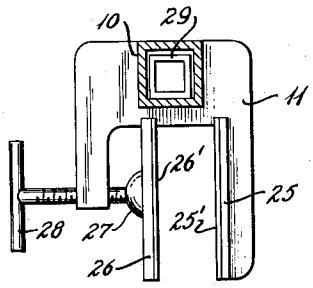


Fig. 3

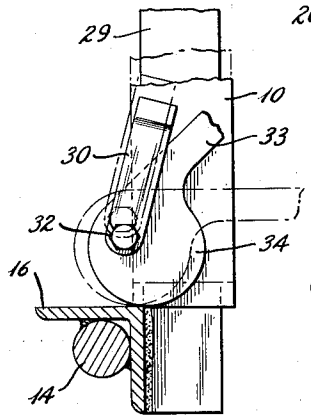


Fig. 4

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DOOR DOLLY AND JACK

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3 Claims. (Cl. 214—1)

This invention relates to man made structures of various kinds including habitable buildings and to the tools and equipment employed in the fabrication, care, maintenance and repair thereof.

The invention is concerned particularly with devices or tools for special purposes including for handling relatively large massive objects which may be attached to other objects such as doors or other movable portions of buildings or the like.

In structures such as large buildings used for offices where considerable work is required on office doors including due to sweating because of moisture from air conditioners, considerable time, effort and expense has been involved and the handling of such heavy doors has been difficult.

It is an object of the invention to provide a combination door dolly and jack by which doors or wall sections may be simply, easily and safely elevated, moved and transported, and which can be worked upon and replaced in a minimum of time and with a minimum of effort.

Another object of the invention is to provide a door dolly and jack by which a door may be held in upright position or on its side during removal, transportation while work is done upon such door, and during replacement as well as a device of this character which can be operated with little effort by one person or individual.

A further object of the invention is to provide a door dolly or jack including means for clamping and holding the door or wall portion without injury to the surface thereof and with a foot operated cam by which the door can be raised or lowered in the removal and replacement of the same.

Other objects and advantages of the invention will become apparent from the following description taken in conjunction with the accompanying drawing wherein:

Fig. 1 is a perspective illustrating one application of the invention in use;

Fig. 2, an enlarged fragmentary detailed perspective of the foot operated cam mechanism;

Fig. 3, a section on the line 3—3 of Fig. 1; and

Fig. 4, a side elevation of a portion of the structure of Fig. 1.

Briefly stated, the invention comprises a supporting frame including wheels, an axle, a pair of horizontal converging braces, a similar pair of upwardly extending converging braces, an angle member connecting the braces at each side and a post slidably supported between the upright supporting braces and the axle with means for moving said post a limited amount upwardly and for lowering the post with such post carrying clamps for attachment to a door. A cam and link arrangement between the post and the axle or lower frame member is provided so that when the cam lever is operated it will force the post upwardly.

With continued reference to the drawing, the combination door dolly and jack of the present invention comprises an upright post unit **10** having spaced U-shaped

clamps **11** and **12** for clamping engagement with a door wall panel or the like **13**, the post **10** being mounted for vertical adjustment on a suitable vehicle or chassis unit including an axle **14** supported by wheels **15**. On the axle **14** is mounted a parallel angle member **16** having attached to its ends the lower extremities of upwardly extending angular braces **17** and **18** which substantially converge at their upper ends where they are joined to form a channel in which the post is slidably received.

To each end of the angular member **16** on the axle **14** are attached a pair of horizontally disposed substantially converging angle members **20** and **21** beneath the free outer ends of which are supported casters **22**. Braces **23** and **24** connect the angle members **20** and **21** near their outer ends to the angle members **17** and **18** near the top thereof and provide a relatively rigid structure for supporting the door.

Against the inner side of one of the legs of the U-shaped clamp **11** is attached a jaw-forming plate **25** for cooperation with an opposed plate **26** having a swivel connection **27** with an adjusting screw **28** by means of which the space between the plates **25** and **26** can be varied to engage and clamp opposite sides of the door. One end of the plate **26** is provided with a cut out portion **26A** in which the clamp is slidably received to prevent such plate from rotating when the adjusting screw **28** is turned. The lower U-clamp **12** is similarly fitted. The plates **25** and **26** are provided with padding **25'** and **26'** respectively to prevent marring the door.

Attached to the angle member **16** is an upright rod or shaft **29** which extends upwardly and is received in the hollow post **10**.

Means is provided for raising the post with regard to such rod by movement along the length of the post **10** and the short shaft of rod **29** including a lever arm **30** (Fig. 2) having its upper end secured by a weld **31** or other means of attachment to the post **10** and having through its lower end a bolt **32** which secures such end to a lever **33** having a cam surface **34** engaging and resting upon the upper surface of the angle member **16**, such cam having a grooved foot engaging portion **35** to which downward pressure may be applied to force the arm **30** and the post **10** with the clamps **11** and **12** upwardly. Upon removal of the pressure on the operating portion **35** the post **10** with the clamps **11** and **12** will descend by gravity. The upper end of the post is provided with handle bars **36** attached to or extending through the post **10** and by which handle bars the dolly may be pulled or pushed for conveying a door or other object.

The ends of the handle bar elements **36** also provide feet which may be placed on the supporting surface while the wheels **15** support the other end of the dolly. With the door in this position the door will be supported by the dolly, providing for ease of planing the edge of the door away from the clamps **25**. It will be also apparent that the post **10** is slidably received in a channel formed by the upper end portions of the upwardly converging angle members **17** and **18**. The upper end **17A** of the outer flange of angle member **17** and the upper end **18A** of the outer flange of angle member **18** and the connected upper ends **17B** and **18B** of the abutting flanges of angle members **17** and **18** adjacent the converging ends of the angle members **20** and **21** cooperate to provide a channel which is open at the back whereby the post **10** is guided by the shaft or rod **29** at its bottom end and the channel formed by the upper ends of the angle members **17** and **18** to guide the post **10** in accurate upright relation. The weight of a door supported in the clamps **25** urges the post **10** more tightly into the channel while permitting the vertical movement of the post and the door. The clamps engaging the door and the edge of the door limit any

backward movement of the post and therefore there is no danger of separation of the post from the rest of the dolly structure during actual use of the device. However,, the post **10** can be removed by a lifting action in excess of the motion provided by the lifting lever **33** to separate the post **10** from shaft **29** to simplify the storage and transportation of the dolly from one location to another.

It will be apparent from the foregoing that with the present invention, a door, a wall panel, or other structure of a generally similar nature to both sides of which access may be had may be engaged and supported by the device of the present invention. In doing this, the device of the present invention is rolled into position so that the rollers **22** and bars **20** and **21** are disposed on opposite sides of the door and the edge of the latter is within the U clamps **11** and **12** whereupon the screws **28** may be tightened to secure the door or the like in place in such clamps on the post **10**. Thereafter the door may be elevated slightly by elevating the post **10** by which it is carried to relieve the stress on the hinge bolts or pintles. This is accomplished by the application of pressure on the foot pedal **35** so that the cam fulcrums on the underlying angle member forcing the post upwardly with the brackets **11** and **12** which carry the door. The handle bars **36** may be gripped by a workman unassisted and the door swung downwardly to cause the same to rest on its side instead of its end and the door may be carted to another location or it may be held in upright or horizontal position while work is performed thereon.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is illustrated in the drawing and described in the specification, but only as indicated in the accompanying claims.

What is claimed is:

1. A door dolly and jack comprising a cross member, wheels mounted on the ends of said cross member to provide for wheeled support thereof, a pair of converging members mounted with their divergent ends fixed to the ends of said cross member and having their converging ends spaced apart a distance at least equal to the thickness of a door, a polygonal stub shaft mounted on said cross member and extending upwardly from the plane defined by said cross member and said converging members, a polygonal post slidably mounted on said stub shaft, a pair of strut members extending upwardly from said cross member in converging relation with their divergent ends fixed to said cross member and their upper converging ends connected together providing a post receiving channel closed on the sides thereof adjacent the ends of said cross member and the ends of said first converging members and snugly receiving said polygonal post whereby said post may be raised or lowered in telescoping relation to said shaft, brace means for securing said first and second pairs of converging members in fixed position, clamp means mounted on said post both above and below said channel formed by the converging ends of said second pair of converging members with said clamps having door receiving portions in registry with the open spaces between the converging ends of said first pair of converging members whereby a door may be snugly received in said clamping members in any position including having the door in contact with the supporting surface or with said door in a raised position, said post being provided with handlebar shaped projections spaced from said cross members whereby said wheels and the ends of said handlebar shaped members may serve to support the door with one edge substantially parallel to a supporting surface.

2. The invention according to claim 1 in which means are provided for raising said post a limited extent relative to said cross member for accurately positioning the door carried by said dolly to provide for easy insertion of a door in its opening and in operative relation to the supporting hinges.

3. A door dolly and jack comprising a cross member, roller support means at each end of said cross member to provide for roller support thereof for movement over a supporting plane surface; at least one forwardly projecting member extending substantially transversely of said cross member and fixed to said cross member at one end and having its other end free; support means on the free end of said forwardly projecting member to provide for movement thereof over a supporting surface; said support means at each end of the cross member and at the free end of said forwardly projecting member providing a base support; said cross member, forwardly projecting member, and support means providing a chassis unit; a vertically slidable post unit extending substantially perpendicularly to a plane defined by the points of contact of each support means with the supporting surface and mounted on said chassis adjacent said cross member for vertical adjustment of the post unit in said substantially perpendicular relation; said adjusting means including a stub shaft mounted on one of said units and a cooperating sleeve mounted on the other of said units to effectively maintain said post in said perpendicular relation during vertical adjustment of said post unit; bracing means extending from said chassis unit to said post unit for bracing the post unit; guide means at the upper end of the bracing means for guiding the post unit in vertical movement; C-type clamp means mounted on said substantially perpendicularly extending post in spaced relation along the height thereof and adjacent to and offset from a vertical plane including said transverse member, said C-type clamp means facing in the direction of said transverse member for reception of the edge portion of a door positioned in upstanding relation adjacent to said transverse member; the operative portions of said clamp means being clampingly engageable with the faces of the adjacent edge portion of the door to be suppported whereby said dolly may be moved adjacent to an upstanding door supported by its hinges or supported on the supporting surface with said forwardly projecting transverse member located alongside of one surface of the upstanding door and the said clamp means receiving the edge portion of the upstanding door; means to operate said clamp means to retain the door on the dolly; means to positively raise said post unit with the clamps thereon vertically to position the door at a desired elevation, the structure being such that the center of gravity of the dolly will lie within the base defined by said contact points of said support means.

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