March 10, 1953 J. V. SICK 2,631,006

PRESSROOM DOLLY

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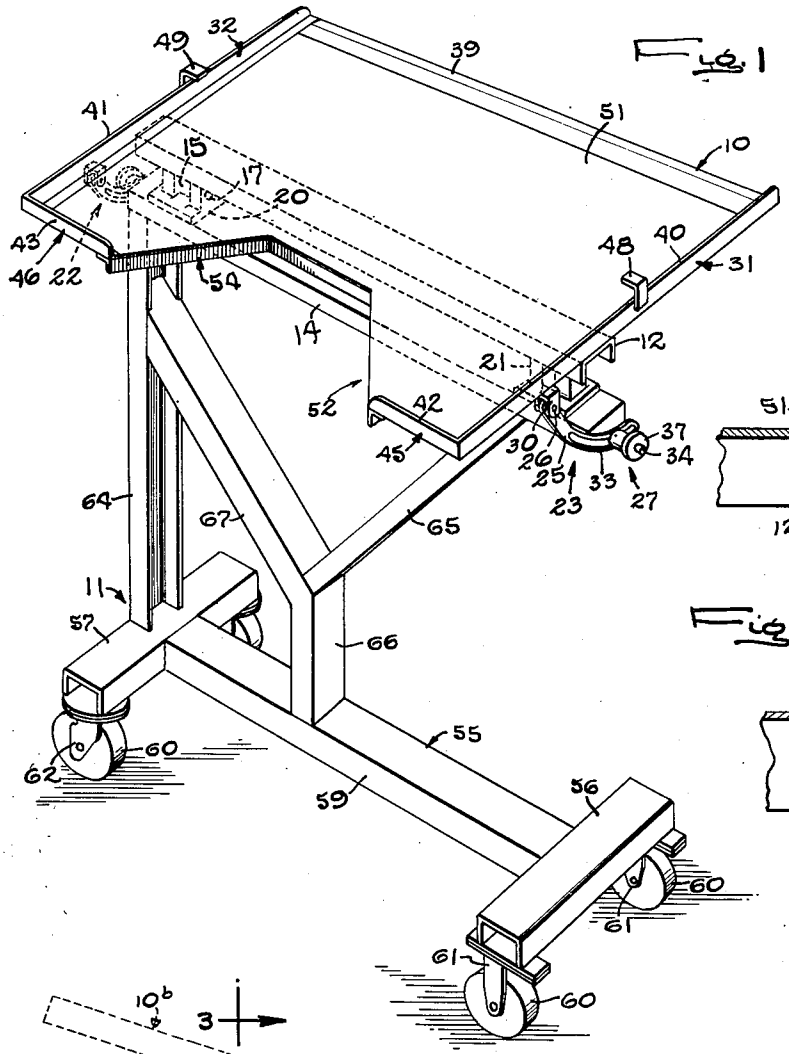


Fig. 1

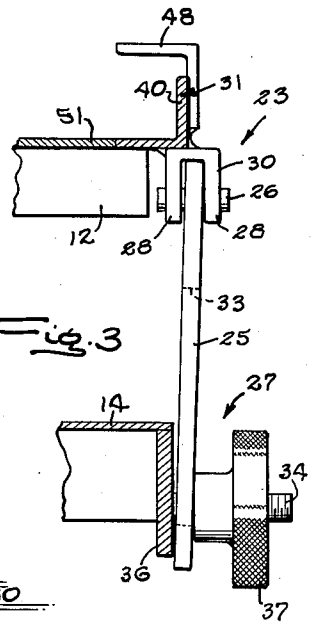


Fig. 3

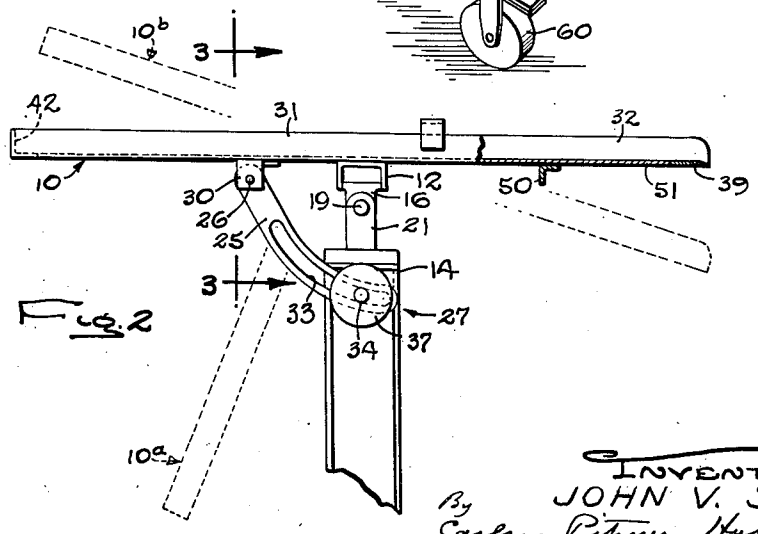


Fig. 2

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PRESSROOM DOLLY

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1

The present invention relates to improvements in wheeled dollies and more particularly to a novel press room dolly adapted for safe and efficient transportation of printing forms.

One object of the invention is to provide a dolly of the foregoing character having its form carrying table constructed and mounted for adjustment between loading and transport positions, whereby loading of the forms onto the dolly and unloading them therefrom onto the press is greatly facilitated and whereby the space requirements for transportation are reduced to a minimum so as to permit safe and convenient use of the dolly in narrow aisles.

Another object is to provide novel means for controlling movement of the dolly table from loading to transport position and for preventing accidental shifting of the dolly table between these positions.

Another object is to provide a dolly constructed and arranged to provide easy access for loading and unloading operations.

A further object resides in the provision of a novel support carriage for a dolly adapted for movement around obstructions in a press room.

In connection with the preceding objects, an additional object is to provide a press room dolly of durable and economical construction.

The objects of the invention thus generally set forth, together with other and ancillary advantages are attained by the construction and arrangement shown by way of illustration in the accompanying drawing in which:

Figure 1 is a perspective view of a dolly embodying the features of the invention.

Fig. 2 is a fragmentary end view illustrating various loading and transporting positions of the dolly table and showing an end view of the stabilizing means for the table.

Fig. 3 is a fragmentary sectional view taken along line 3—3 of Fig. 2 and showing a side view of the stabilizing means.

While the invention is susceptible of various modifications and alternative constructions, there is shown in the drawing and will herein be described in detail the preferred embodiment, but it is to be understood that it is not thereby intended to limit the invention to the form disclosed, but it is intended to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

Referring more particularly to the drawings, the present invention is embodied in a press room dolly having a form carrying part 10 herein

2

shown as a generally rectangular table supported upon a wheeled carriage 11 constructed to move through narrow aisles and around obstacles normally found in press rooms as will be more fully described in subsequent paragraphs. In the present instance, the table 10 is adapted to support assembled flat printing forms or the like and is preferably constructed in a generally rectangular shape for this purpose, additional means being provided for holding the forms on the dolly table as will be described later.

When the dolly is to be loaded, it is moved alongside a stand on which printing forms or the like are resting, the table is secured in a generally horizontal position, and one or more forms are transferred to the table usually by sliding them from the stand onto the table. To lessen the amount of space occupied by the loaded dolly and to reduce the width of the dolly to enable it to be wheeled through narrow aisles, the table 10 is pivotally mounted upon the carriage 11 in a manner to permit the table to be shifted into an inclined or approximately vertical transport position. The pivotal mount also permits the table to be inclined from the horizontal plane to facilitate unloading and loading operations where the height of the dolly is not the same as the stand to or from which the load is transferred.

In the particular construction illustrated, table 10 is supported along its longitudinal mid-section by a rigid sill 12 extending along the bottom of the table and pivotally supported on a horizontal support beam 14 of carriage 11. The specific construction of the pivotal connection between the sill and the beam may be of any desired character but for the purpose of illustration the connection is made through two depending hinge lugs 15 and 16 placed along the sill 12 and suitably secured thereto as by welding, each of the lugs being pivotally supported on horizontal pins 17 and 19 extending between coacting pairs of upstanding ears 20 and 21 affixed to the beam 14, as shown.

The location of the pivotal support for the table along the central axis of the table load carrying area substantially balances the table about its support when in the horizontal position. For maintaining the table fixed in the horizontal position and in various inclined positions as desired, interconnecting stabilizers 22 and 23 are provided between the dolly table and carriage, which stabilizers are duplicated, as shown, at opposite ends of the table to better distribute the forces applied to the table. Since the two sta-

bilizers used are mirror images of each other, only one of the two will be described in detail.

In the exemplary form shown, each stabilizer comprises a link 25 connected to a fixed pivot pin 26 on table 10 and slidably received in a gripper 27 on the carriage 11, the pivot and the gripper being respectively disposed on the table and carriage at positions out of alignment with the pivotal axis of the table on the carriage. The gripper is made adjustable to clamp the link 25 against longitudinal movement through the gripper and is therefore effective to lock the table 10 in position since inherent operation of the stabilizer is such that the table cannot pivot about it support unless the link is free to slide through the gripper.

More specifically, the upper end of link 25 is pivotally mounted on the central bearing portion of a pin 26 extending between two parallel jaws 28 projecting downwardly from a bracket 30 affixed to end runner 31 forming a part of the table frame as will be more fully described in later paragraphs. As shown, the opposite and lower end of link 25, which extends through the gripper, defines a longitudinal medial slot 33 adapted to slidably receive a gripper stud 34 projecting outwardly from a plate 35 affixed to the end of support beam 14. The length of the slot 33 is designed to permit the table to be pivoted in one direction to a very steep transport angle 10*a* (Fig. 2) and in the opposite direction to a smaller angle 10*b* for loading purposes, the respective ends of the slot 33 limiting the degree of pivotal movement in opposite directions. The plate 36 forms an anvil against which the link 25 may be pressed by a third gripper element to clamp the link against longitudinal movement through the gripper. The gripper element preferably comprises a knurled gripper nut 37 assembled on the free end of the stud 34 after the link 25, the gripper nut and stud having cooperating threads of a pitch designed to press the nut against the link with considerable force upon rotation of the nut by finger pressure. In operation, the gripper nut is loosened sufficiently to free the link 25 and permit the dolly table to be pivoted to the desired angle where it is secured in position by tightening the gripper nut to again clamp link 25. As shown, the link 25 is in the form of a flat slotted bar, the lower end of the bar being curved into an arcuate shape to reduce the downward projection of the link upon pivotal movement of the table, but it will be understood that the specific shape of the link may be varied without departing from the scope of the invention.

It is anticipated that in some instances the user may neglect to tighten the gripper nut sufficiently to clamp link 25 and fix the table securely in position against any tendency it may have to shift under influence of its own weight to a more inclined position. Accidental pivotal movement in the clockwise direction (Fig. 2) will, of course, be limited to a small angle by engagement of the link web at the end of slot 33 with the stud 34. In accordance with one aspect of the invention, the stabilizer is constructed and arranged to automatically limit to a small angle any accidental pivotal movement of the table toward the transport position which may result from insufficient tightening of the gripper nut 37, thereby eliminating hazards which might otherwise result from an unexpected shifting of the table from loading to transport position. It has been discovered that by displacing the respective interconnections between link 25 and the table 10 and between link 25 and the carriage 11 along the axis of the pivotal mount for table 10, swinging movement of the table toward the transport position due to insufficient tightening of the gripper nut will be checked by a wedging action of link 25 between the gripper nut and the anvil plate of the gripper. This relative axial displacement of the interconnecting points for link 25, which is incorporated in the illustrated form of the invention by locating the pivotal connection to the table to the right of the sliding connection to the carriage (Fig. 3), gives the link an angular displacement relative to a plane perpendicular to the pivotal axis of the table on the carriage. Since the degree of angular displacement of link 25 is dependent upon the amount of displacement of the interconnecting points, which is substantially constant, and the distance between the points, which becomes less as the table pivots toward the transport position, the degree of angular displacement will increase as the table pivots toward a more inclined position.

The effect of this change in angular displacement on link 25 may be visualized from an inspection of the structural embodiment of the invention as best shown in Fig. 3, which illustrates an approximation of the angular displacement of the link 25 in a clockwise direction from a plane perpendicular to the support axis of the table. When the table is in its horizontal position, as shown, the interconnecting points are disposed at substantially their maximum distance apart with the link 25 angularly displaced to a relatively small angle (Fig. 3). Upon pivotal movement of the table toward transport position, the angular displacement of link 25 increases, producing, in effect, a clockwise swinging movement of the link about the gripper 27 (Fig. 3), which movement engages opposite sides of the link with the anvil plate 36 and the gripper nut 37, resulting in a binding or wedging action with the gripper, which stops the pivotal movement. For looseness of the gripper nut due to insufficient tightening, the amount of pivotal movement of the table necessary to produce binding action sufficient to stop further pivotal movement is small and unobjectionable.

Under most conditions of loading, the table has a tendency to continue to move toward the vertical position once it has been displaced from the horizontal position. Where this condition exists, the invention lends itself to controlling the pivotal movement of the table toward the transport position by manipulation of gripper nut 37. After the table has pivoted to cause binding between link 25 and the gripper, the nut 37 is backed off from link 25 producing looseness which results in further pivotal movement of the table, the extent of which is controlled by the extent to which the nut is backed off by the user.

In the preferred form, links 25 are constructed of flat curved strips of metal, the curved construction serving to reduce the downward projection of the links upon pivoting of the table 10 toward transport position. It will be understood, however, that the shape of the links may be varied without departing from the scope of the invention.

Referring more particularly to the construction of the dolly table, the previously mentioned end runners 31 and corresponding runner 32 at the opposite end of the table together with sill 12

form the basic frame for supporting the weight of the printing forms to be carried. The ends of the runners on one side of the table are interconnected by a tapered lead plate 39 which forms a stiffening brace for the table and facilitates loading operations by guiding the forms onto the runners. Suitable means are provided for maintaining the printing forms in positions on the table, which, in the embodiment shown, include vertical end flanges 40 and 41 on the end runners 31 and 32, vertical abutment flanges 42 and 43 of angle irons 45 and 46 respectively, joining the ends of the runners opposite the lead plate, and safety clips 48 and 49 fixed to the sides of the runners 31 and 32 in overhanging relation to the table. The positioning means thus formed comprises, in effect, a pocket on the table top for the printing forms which will support the forms when the table is in the transport position. Further details of the table illustrated include a longitudinal stiffening and load support brace 50 interconnecting the runners 31 and 32 and a sheet metal filler plate 51 fitted into the space between the runners 31 and 32 and lead plate 39 to prevent the user's fingers from being caught between the load and the support members.

In accordance with another aspect of the invention, dolly loading and unloading operations are facilitated by constructing the table in a fashion to permit the user to move in near the center of the table into convenient position for sliding printing forms on or off the table with ease. For this purpose, the side of the table opposite the lead plate 39 is formed with a recess 52 extending from the table edge approximately half-way to the center of the table, the recess being of a width substantially equal to that of the body of the user. The boundaries of the recess are bordered by angle irons 54 or the like suitably attached to the under side of the table to give the table more rigidity and to serve as guard rails to protect the user from sharp corners and edges of the table.

In accordance with a further aspect of the invention, the dolly carriage 11 is constructed in a novel manner to permit movement of the dolly around printing machinery and other obstacles commonly found in press rooms. More specifically, the carriage comprises an elongated chassis 55 upon which a vertical frame including support beam 14 is mounted, the construction of the frame being adapted to form a large open space at one end of the carriage to eliminate interference with projecting elements in printing machinery when the dolly is being maneuvered into position for loading and unloading.

The specific chassis illustrated comprises parallel channels 56 and 57 at opposite ends of the chassis, interconnected by a central cross beam 59 welded or otherwise fixed to the mid-section of each channel to form a horizontal H-frame which is made portable by four wheels or rollers 60 mounted under each end of each end channel. To permit easy steering of the dolly, the two rollers under end channel 56 have mountings 61 fixed to the channel and the rollers under the opposite end channel 57 have freely pivoted mountings 62, but it will be appreciated that the type of mountings for the rollers may be varied as desired.

The vertical frame of the carriage comprises previously mentioned support beam 14 having a vertical post support 64 at one end extending to the corresponding end of the chassis 55 and an inclined leg support 65 at the other end interconnected to an intermediate section of the chassis by a vertical standard 66 extending up from the cross beam 59. To give more strength and rigidity to the frame, an inclined brace 67 is interconnected between the upper portion of the post 64 and the joint between standard 66 and inclined leg 65. The brace, standard, and leg form a Y-frame which rigidly supports the projecting end of beam 14 and leaves a large open space over one end of the chassis between the chassis and leg 65 and beam 14. The carriage thus formed is of stable, strong, and rigid construction and may be positioned around a projecting element of press machinery with one end of the chassis 55 extending under the element and the table top 10 extending over the element.

It will be observed that the vertical carriage frame and the dolly table are centrally disposed over the chassis 55 locating the center of gravity of the dolly at or near the longitudinal axis of the chassis. This symmetrical distribution of weight plus the central location of the pivotal axis of the table gives the dolly a high degree of lateral stability for both loading and transport positions of the table even when the dolly is made very narrow with short chassis channels 56 for movement through narrow aisles.

I claim as my invention:

1. A press room dolly comprising, in combination, a carriage, a table pivotally supported on said carriage, and stabilizing means interconnecting said table and said carriage for maintaining said table in adjusted position, said means including a gripper on said carriage having two elements spaced apart, a link having a pivotal connection to said table and slidably mounted between said spaced elements, means for moving said elements into engagement with said link under pressure to clamp said link and hold said table in position, the pivotal connection between said link and said table being displaced to one side of a plane extending centrally through the space between said elements and disposed perpendicularly to the pivotal support axis of said table, said link and gripper being operable to automatically limit to a small angle accidental pivotal movement of said table due to inadequate pressure engagement of said elements with said link.

2. A dolly comprising in combination, a carriage, a table pivotally supported on said carriage for movement from a generally horizontal or loading position to an inclined or transport position, and stabilizing means interconnecting said carriage and said table for maintaining said table in fixed position, said means comprising a gripper on said carriage including an anvil plate disposed in generally perpendicular relation to the pivotal support axis of said table, a stud projecting outwardly from said plate in substantially parallel relation to said table support axis, and a nut threaded to the free end of said stud in spaced relation to said plate, a link having a pivotal connection to said table, said link defining a slot in which said stud is received and being slidably mounted in said gripper between said plate and said nut in position to be clamped against movement through tightening of said nut to press said link against said plate, the pivotal connection between said link and said table being displaced to one side of a plane extending centrally between said plate and the clamping position of said nut and perpendicularly to said pivotal support axis of said

table, said link and said gripper being operable to limit to a small angle accidental pivotal movement of the table due to inadequate tightening of said nut.

3. A press room dolly comprising, in combination, a carriage having a chassis, a support post extending upwardly from one end of said chassis, a Y-frame extending upwardly from an intermediate section of said chassis and serving as a brace for said post, a support beam supported at one end of said post and at the opposite end on said Y-frame, a table pivotally supported on said beam for movement from a substantially horizontal loading position to an inclined transport position, stabilizing means interconnecting said table and said carriage for maintaining said table in various adjusted positions, said means including a gripper on said carriage having two elements spaced apart, a link having a pivotal connection to said table and slidably mounted between said spaced elements, means for moving said elements into engagement with said link under pressure to clamp said link and hold said table in position, the pivotal connection between said link and said table being displaced to one side of a plane extending centrally through the space between said elements and perpendicularly to the pivotal support axis of said table, said link and gripper being operable to limit to a small angle accidental pivotal movement of said table due to inadequate pressure engagement of said elements with said link, and means defining a recess on one side of said table to give access to the center of said table for loading and unloading purposes.

4. A press room dolly comprising, in combination, a carriage having a chassis, a support post extending upwardly from one end of said chassis, a Y-frame extending upwardly from an intermediate section of said chassis and serving as a brace for said post, a support beam supported at one end on said post and at the opposite end on said Y-frame, a table pivotally supported on said beam for movement from a substantially horizontal loading position to an inclined transport position, stabilizing means interconnecting said table and said carriage for maintaining said table in various adjusted positions, said means including a gripper on said carriage and a link having a pivotal connection to said table and slidably mounted in said gripper, said pivotal connection between said link and table being displaced relative to said gripper along the axis of said connection thereby enabling said link and gripper to limit to a small angle accidental pivotal movement of said table due to inadequate pressure engagement of said gripper with said link, and means defining a recess on one side of said table to give access to the center of said table for loading and unloading purposes.

5. A press room dolly comprising, in combination, first means including a carriage, second means including a table pivotally supported on said carriage, and a stabilizer interconnecting said table and said carriage for maintaining said table in various adjusted pivotal positions, said stabilizer comprising a gripper on one of said means and including two spaced gripper elements, and a link having a pivotal connection to the other of said means and slidably mounted between said spaced elements, means for moving said elements into engagement with said link under pressure to clamp said link and hold said table in a fixed pivotal position, said pivotal connection between said link and said other means being displaced to one side of a plane extending centrally through the space between said elements in perpendicular relation to the pivotal support axis of said table, said link and gripper being operable to limit to a small angle accidental pivotal movement of said table due to inadequate pressure engagement of said elements with said link.

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