Sept. 15, 1953

R. GOEDKEN

LINOLEUM LIFTER

2,652,207

Filed April 21, 1952

2 Sheets-Sheet 1

Fig. 1.

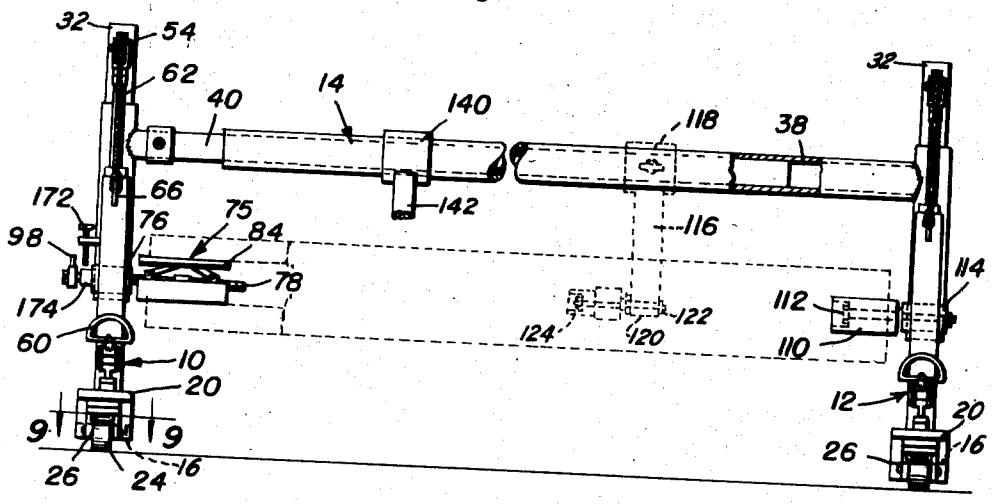


Fig. 2.

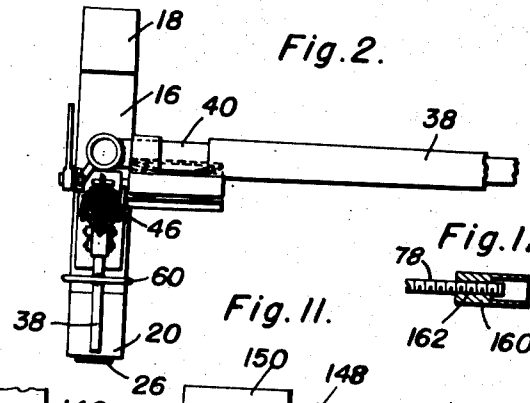


Fig. 10.

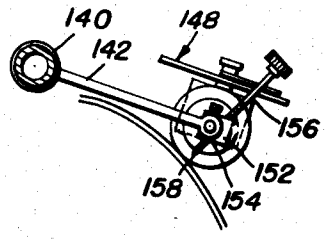


Fig. 12.

Fig. 11.

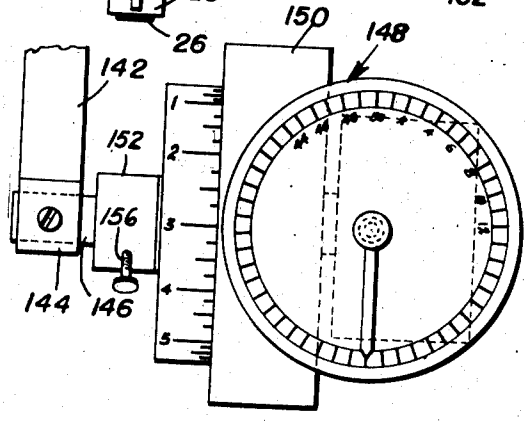
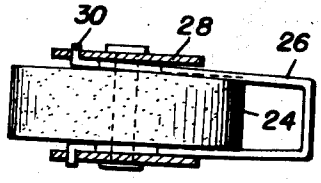


Fig. 9.



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Fig. 3.

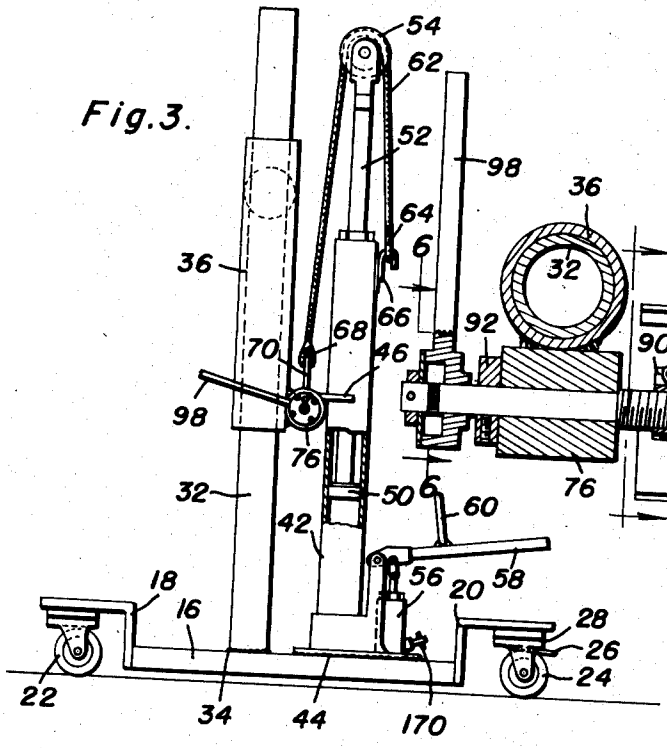


Fig. 4.

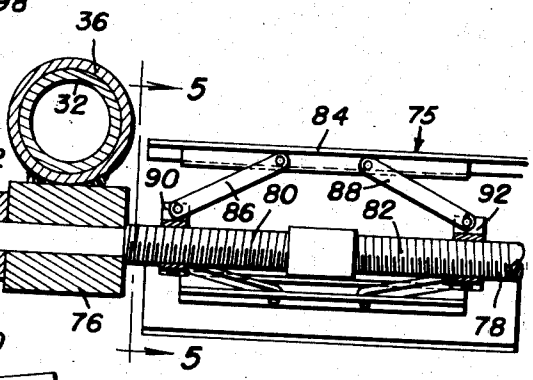


Fig. 5.

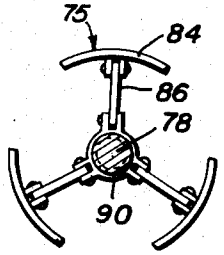
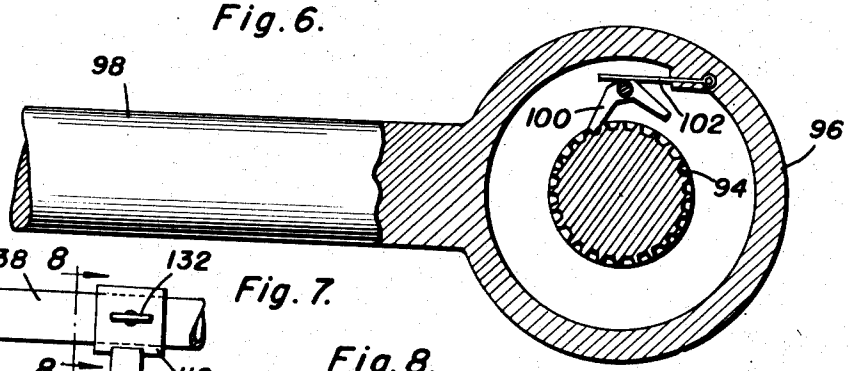


Fig. 6.



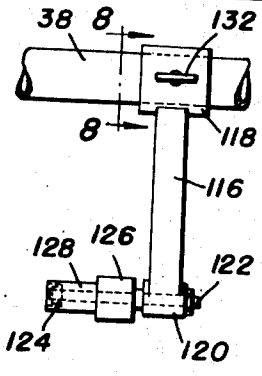
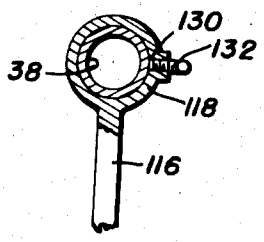


Fig. 7.

Fig. 8.



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LINOLEUM LIFTER

Ray Goedken, Dyersville, Iowa

Application April 21, 1952, Serial No. 283,474

11 Claims. (Cl. 242—58)

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This invention relates to a hydraulic linoleum lifter and particularly to a crane-type device for lifting, conveying, displaying and dispensing linoleum.

In storing, handling and displaying of linoleum, it is necessary to have a considerable number of men available to lift the heavy rolls of material around. Also, it is desirable to have a large floor space so that the linoleum may be carried and spread out to be examined and the pattern critized or otherwise discussed. Not only is it necessary to have a large amount of manpower available, but it frequently results in the injury to the linoleum because of breakage, chipping or other serious injury thereto.

The present invention provides a system having a lifting stand which will lift and move linoleum about so that one man may perform this service usually performed by several and may with great convenience show and display the linoleum to the best advantage. Also the device is provided with a metering means for acurately measuring the amount of linoleum dispensed and marking or scribing means so that it may be easily cut at the desired point. The linoleum lift according to the invention comprises a pair of end stands separated by a telescoping reach member with each of the end stands being provided with a hydraulic jack or lifting device and means for connecting and disconnecting the stands from the ends of the roll of linoleum and also having rollers so that the entire device may be moved about at will.

It is an object of this invention to provide a linoleum lifting device.

It is another object of the invention to provide a linoleum lifter having hydraulic jacks for providing the lifting power.

It is a further object of this invention to provide a linoleum lifter which will lift various sizes or lengths of linoleum rolls.

It is a further object of this invention to provide a linoleum lifter having an expanding mandrel for one end of the roll.

It is still further object of this invention to provide a linoleum lifter which may be moved then anchored in place.

Other objects and many of the attendant advantages of this invention will be apparent from the following detailed description taken in conjunction with the accompanying drawing, in which:

Figure 1 is a front elevation of the hydraulic linoleum lifter and dispenser;

Figure 2 is a top plan view of one end of the lift;

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Figure 3 is an end elevation of the lift with parts broken away and in section;

Figure 4 is an enlarged longitudinal section through the expanding mandrel taken substantially on the plane indicated by the line 4—4 of Figure 3;

Figure 5 is an enlarged cross section through the mandrel taken substantially on the plane indicated by the line 5—5 of Figure 4;

Figure 6 is an enlarged cross section through the mandrel and taken substantially on the plane indicated by the line 6—6 of Figure 4;

Figure 7 is an enlarged detail of the auxiliary arm and mandrel for handling short rolls;

Figure 8 is a cross section showing the locking screw for the auxiliary arm and taken substantially on the plane indicated by the line 8—8 of Figure 7;

Figure 9 is an enlarged cross section through the castor showing the locking bail and taken substantially on the plane indicated by the line 9—9 of Figure 1;

Figure 10 is a side elevation of the scriber and meter together with the support therefor;

Figure 11 is an enlarged plan view of the meter; and,

Figure 12 is a sectional elevation of the auxiliary mandrel for lifting rolls with a small core.

In the exemplary embodiment according to the invention, a pair of stands 10 and 12 are connected together by means of a reach bar 14. Each of the stands 10 and 12 comprises a narrow elongated base or platform 16 having end brackets 18 and 20 connected thereto. Castor wheels 22 and 24 are swivelly mounted on the brackets 18 and 20, respectively, so that the platforms or end stands may be moved about as desired.

In order to lock the end stands in position a braking bail 26 is mounted on the swivel bracket 28 on an axle 30 offset from the axle of the wheel 28 so that the bail 26 may be pressed into tight engagement with the wheel 24.

Each of the end stands 10 and 12 is provided with an upstanding standard 32 which is preferably cylindrical in formation and is rigidly attached to the base 16 by any suitable means such as welding 34. A sleeve 36 is slidably mounted on the standard 32 for longitudinal motion therealong. The sleeves 36 of the standards 10 and 12 are joined together by the reach member 14 which comprises an external tubular member 38 and an internal member 40. The external member 38 is of such length that when it is completely telescoped over the internal member 40 the end stands 10 and 12 will just clear

the ends of the sort of standard size of linoleum or when they are expanded to full length, they will extend over and grasp the longer rolls of linoleum.

The stands 10 and 12 also each further include a hydraulic jack having a standard or housing 42 secured to the base 16 by any suitable means such as welding 44. The housing 42 extends in parallel relationship to the standard 32 and the sleeve 36 is provided with a guide 46 which embraces the housing 42 so that the sleeve 36 is non-rotatably mounted on the standard 32. In this manner, the platforms 16 are maintained at transverse relation to the reach bar 14 so that the standards 10 and 12 may pass closely adjacent to the ends of rolls of linoleum or other material lying on the floor.

Each of the hydraulic jacks 42 comprises in addition to the housing 42 a piston 50 driving a piston rod 52 which has a sheave 54 mounted at the top thereof. The piston 50 is operated by means of a pump 56 operated by a handle 58 on which is placed a foot bail 60 so that the handle 58 may be conveniently operated by the foot of the operator.

The force of the jack 42 is transmitted to the sleeve 36 by means of a cable 62 having an eye 64 connected to a hook 66 rigidly mounted on the side of the housing 42 and having an eye 68 connected to a hook or eye 70 rigidly connected to the sleeve 36. Because of the entrainment effect of the cable 62 over the sheave 54, the stroke of the piston rod 52 is doubled so that the stroke of the sleeve 36 is twice the stroke of the piston rod 52.

One of the standards, such as the standard 10 is provided with an expansible mandrel 75 mounted in a bracket 76 rigidly secured to the sleeve 36 and having a threaded core 78 provided with reversely directed core threads 80 and 82. Floater bars 84 are provided with pivoted arms 86 and 88 which are respectively connected to nuts 90 and 92. The screw rod 78 is maintained in the bearing block 76 by means of a locking collar 93. The screw rod 78 is provided with a ratchet 94 which is driven by a ratchet wheel 96 having a driving arm 98. The wheel 96 is provided with a pawl 100 crossed by a spring 102 which may be reversed so that the arm 98 may be operated in a single direction to rotate the screw 78 in either of its directions. The floater bars 84 are prevented from rotation, operation of the handle will cause the nuts 90 and 92 to approach or recede from each other depending upon the setting of the pawl 100.

The opposite end of the stand 12 is provided with a fixed mandrel 110 which is preferably a wooden roller journaled on an axle 112. The axle 112 is preferably fixedly mounted in a bracket 114 corresponding to the bracket 26.

In order to accommodate rolls of less length than the normal standard short length, an auxiliary arm 116 provided with a sleeve 118 is slidably mounted on the telescoping member 38 and has provided at the lower end thereof with a bracket 120 in which is mounted an axle 122 on which is mounted an auxiliary mandrel 124 having an outer enlarged portion 126 and an inner reduced portion 128. The sleeve 118 is provided with an aperture 130 in which is adjusted a set-screw 132.

A meter carrier is provided with a sleeve 140 carrying an arm 142 having an end bracket 144 in which is secured an axle 146. A standard linear measure meter 148 has the operating roll 150 thereof journaled on the shaft 146. The arm 142 also carries the block 152 which has an aperture 154 in which is mounted a screw threaded rod 156 having a scriber point 158.

In order to make the lift adjustable to rolls having exceedingly small inner or internal diameter, an auxiliary mandrel 160 (Figure 12) is provided with an internally screw threaded aperture 162 adapted to screw onto the end of the screw rod 78 so that a mandrel of small diameter will be available for attaching to rolls of small internal diameter.

The operation of the linoleum lifter is as follows: Move the lifter directly over the roll from which yardage is to be cut, having the jacks 32 face in the direction the linoleum is to be pulled out. Insert the floater bars 84 of the expanding mandrel, into the core of the linoleum leaving the floater bars 84 exposed approximately two inches. With the fingers of one hand on one of the floater bars 84, apply the hand lever 88 in a clockwise direction until the mandrel has expanded firmly against the core of the linoleum. With the hydraulic relief valve 170 at the base of the cylinder 56 closed, raise the linoleum to a desired height. Now, insert the mandrel 110 on the opposite end of the lift into the core of the linoleum, leaving approximately two inches exposed. Close the relief valve 170 and raise the linoleum to a level height. The lifter may then be moved forward to transport the roll or to move it to a place where it is to be displayed. After so doing step the foot brakes 26 firmly against the castors 24.

Slide the measure meter 148 on the spacer bar 38 preferably about three feet from the edge of the roll on the side of the expanding mandrel. Set the meter at zero. Turn the scriber block 152 so that the scriber point 158 is approximately at right angle to the linoleum. Make certain the scriber point 158 is up far enough so that it cannot scratch the surface of the linoleum. Revolve the roll so that the edge of the web will be directly under the scriber point. Then push the linoleum over and down until the web comes from the bottom side up. You may then stretch the web about or preferably roll it up as it is being dispensed. In either case dispense approximately two feet more than what is required. Then with the ratchet hand lever 98, wind the roll back until the meter registers exactly, never beyond the number of feet and inches required. It is important to wind the roll back approximately two feet to avoid loose laps from the roll in order to obtain an accurate scribe. Now apply the screw brake on the shaft collar 174. Turn down the scriber point 156 so that it completely suspends the measure meter 148. Pull the meter assembly across the linoleum to scribe the surface with a cut. With a felt base hook knife cut the linoleum on the scribe line. Make certain that the knife has smooth edges on the outer surface so that it will not mark the underneath web. After the cut has been made, put the lift into position, release the relief valve and slowly drop the roll into position.

When moving the roll over the top of other rolls already in position on the display floor, suspend the roll on the lifter so that it hangs on each mandrel approximately two inches. This provides added side clearance so that the members 12 and 10 may readily pass the end of rolls already on the floor.

It will thus be seen that the present invention provides a convenient means for lifting,

transporting and displaying linoleum as well as for making a clean even cut of the desired amount.

For purposes of exemplification a particular embodiment of the invention has been shown, and described according to the best present understanding thereof. It will be apparent that many changes and modifications can be made therein without departing from the true spirit of the invention.

Having described the invention, what is claimed as new is:

1. A linoleum lifter comprising a pair of end stands, each end stand including a narrow elongated base, a castor wheel at each end of the base, an upstanding substantially cylindrical standard on each base, a sleeve slidably mounted on the standard, a hydraulic jack mounted on the base in spaced relation to said standard, a driving connection between the jack and the sleeve, a guide member fixed on the sleeve and engaging the jack, a reach bar connected between said sleeves, said reach bar being arranged transverse to said bases, an inwardly extending mandrel on each sleeve.

2. A linoleum lifter comprising a pair of end stands, each end stand including a narrow elongated base, a castor wheel at each end of the base, an upstanding substantially cylindrical standard on each base, a sleeve slidably mounted on the standard, a hydraulic jack mounted on the base in spaced relation to said standard, a driving connection between the jack and the sleeve, a guide member fixed on the sleeve and engaging the jack, a reach bar connected between said sleeves, said reach bar being arranged transverse to said bases, an inwardly extending mandrel on each sleeve, one of said mandrels being an expanding mandrel.

3. A linoleum lifter comprising a pair of end stands, each end stand including a narrow elongated base, a castor wheel at each end of the base, an upstanding substantially cylindrical standard on each base, a sleeve slidably mounted on the standard, a hydraulic jack mounted on the base in spaced relation to said standard, a driving connection between the jack and the sleeve, a guide member fixed on the sleeve and engaging the jack, a reach bar connected between said sleeves, said reach bar being arranged transverse to said bases, an inwardly extending mandrel on each sleeve, one of said mandrels being an expanding mandrel, said expanding mandrel including a bi-directional screw and a ratchet for selectively operating said screw in either direction.

4. A linoleum lifter comprising a pair of end stands, each end stand including a narrow elongated base, a castor wheel at each end of the base, an upstanding substantially cylindrical standard on each base, a sleeve slidably mounted on the standard, a hydraulic jack mounted on the base in spaced relation to said standard, a driving connection between the jack and the sleeve, a guide member fixed on the sleeve and engaging the jack, a reach bar connected between said sleeves, said reach bar being arranged transverse to said bases, an inwardly extending mandrel on each sleeve, one of said mandrels being an expanding mandrel, said expanding mandrel including a bi-directional screw and a ratchet for selectively operating said screw in either direction, an auxiliary mandrel having a threaded bore engageable with said screw.

5. A linoleum lifter comprising a pair of end stands, each of said end stands including a base, a pair of castor wheels supporting said base, an upstanding standard rigidly mounted on said base, a sleeve slidably mounted on said standard, a telescoping reach bar connecting said sleeves, a hydraulic jack mounted on each base, each jack including a cylindrical housing, a piston rod extending upwardly from said housing, a driving connection between said piston rod and said sleeve.

6. A linoleum lifter comprising a pair of end stands, each of said end stands including a base, a pair of castor wheels supporting said base, an upstanding standard rigidly mounted on said base, a sleeve slidably mounted on said standard, a telescoping reach bar connecting said sleeves, a hydraulic jack mounted on each base, each jack including a cylindrical housing, a piston rod extending upwardly from said housing, a driving connection between said piston rod and said sleeve, a guide rigidly mounted on said sleeve and engaging said housing to maintain said bases in fixed relation to said reach bar.

7. A linoleum lifter comprising a pair of end stands, each of said end stands including a base, a pair of castor wheels supporting said base, an upstanding standard rigidly mounted on said base, a sleeve slidably mounted on said standard, a telescoping reach bar connecting said sleeves, a hydraulic jack mounted on each base, and each jack including a cylindrical housing, a piston rod extending upwardly from said housing, a driving connection between said piston rod and said sleeve, an expanding mandrel on one of said sleeves, a fixed mandrel journaled on the other sleeve.

8. A linoleum lifter comprising a pair of end stands, each of said end stands including a base, a pair of castor wheels supporting said base, an upstanding standard rigidly mounted on said base, a sleeve slidably mounted on said standard, a telescoping reach bar connecting said sleeves, a hydraulic jack mounted on each base, and each jack including a cylindrical housing, a piston rod extending upwardly from said housing, a driving connection between said piston rod and said sleeve, an expanding mandrel on one of said sleeves, a fixed mandrel journaled on the other sleeve, an arm slidably mounted on said reach bar, an auxiliary mandrel journaled on said arm, a locking screw mounted in said arm and engaging said reach bar.

9. A linoleum lifter comprising a pair of end stands, each of said end stands including a base, a pair of castor wheels supporting said base, an upstanding standard rigidly mounted on said base, a sleeve slidably mounted on said standard, a telescoping reach bar connecting said sleeves, a hydraulic jack mounted on each base, and each jack including a cylindrical housing, a piston rod extending upwardly from said housing, a driving connection between said piston rod and said sleeve, an expanding mandrel on one of said sleeves, a fixed mandrel journaled on the other sleeve, a sleeve slidable on said reach bar, a meter mount fixed on said sleeve, said mount having a transverse threaded opening therein, an externally threaded scriber mounted in said opening.

10. A linoleum lifter comprising a pair of end stands, each of said end stands including a base, a pair of castor wheels supporting said base, an upstanding standard rigidly mounted on said base, a sleeve slidably mounted on said standard, a telescoping reach bar connecting said sleeves, a hydraulic jack mounted on each base, each

jack including a cylindrical housing, a piston rod extending upwardly from said housing, a driving connection between said piston rod and said sleeve, a hydraulic pump for each of said jacks, an oscillating handle for said pump, a foot engaging bail on said handle.

11. A linoleum lifter comprising a pair of end stands, each of said end stands including a base, a pair of castor wheels supporting said base, an upstanding standard rigidly mounted on said base, a sleeve slidably mounted on said standard, a telescoping reach bar connecting said sleeves, a hydraulic jack mounted on each base, each jack including a cylindrical housing, a piston rod extending upwardly from said housing, a driving connection between said piston rod and said sleeve, said driving connection including a sheave mounted on said piston rod, a cable secured to said housing and to said sleeve, said cable being entrained over said sheave.

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