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S. D. SIGSBEE

1,714,401

DRUM LEVER

Filed Feb. 14, 1927

FIG. 1.

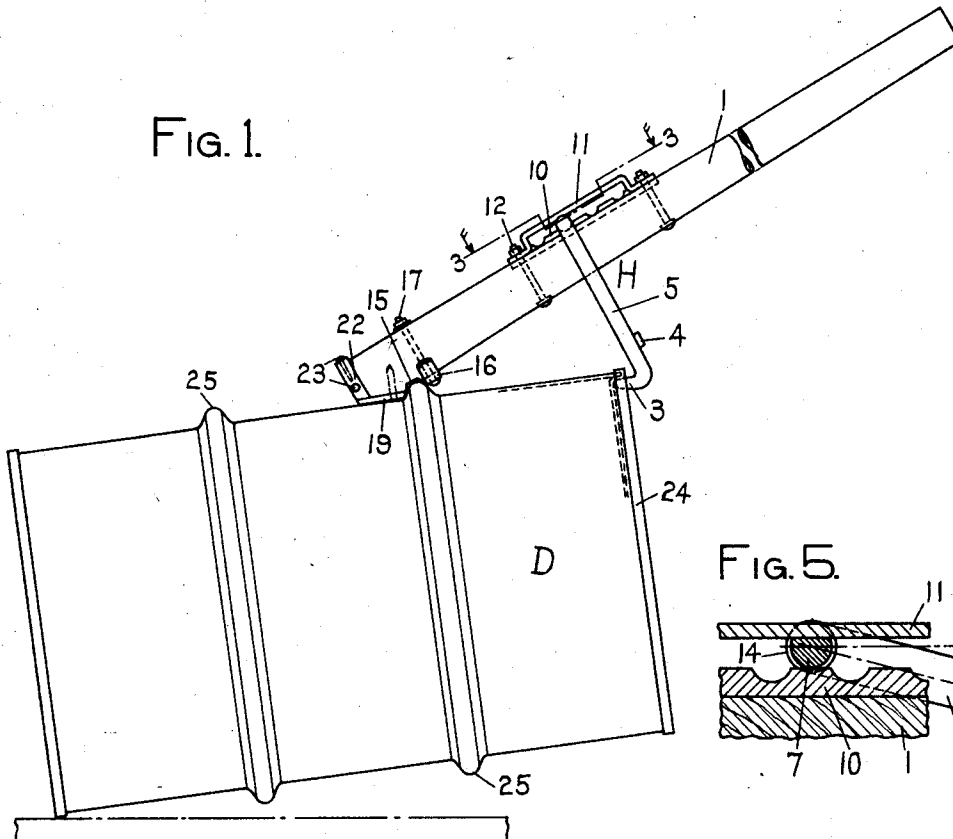


FIG. 5.

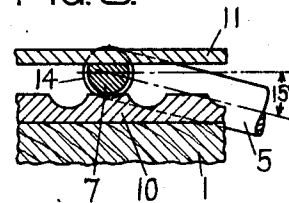


FIG. 2.

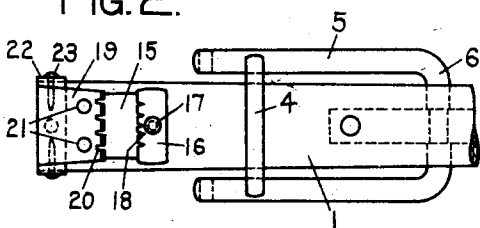


FIG. 4.

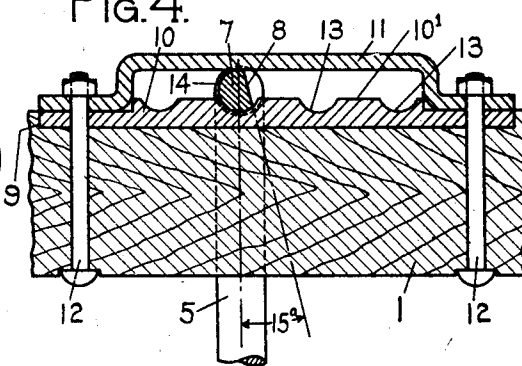
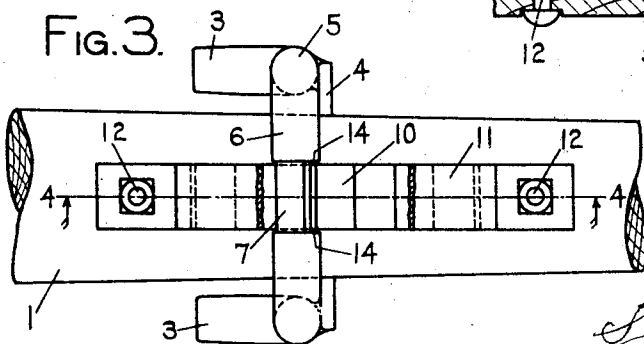


FIG. 3.



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DRUM LEVER.

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This invention relates in general, to levers for handling merchandise, and has more particular reference to a lever especially designed for handling steel shipping drums.

It is becoming more and more the case that liquid and semi-liquid materials are being shipped in steel drums rather than in the wooden barrels. These drums are cylindrical in shape, with an annular, outwardly projecting, flange positioned inwardly of each end a distance equal to one-third of the height of the drum, for facilitating rolling the drums when they are on their sides. At the ends, a reinforced flange projects about one inch beyond the heads, on which the drums stand, when stored or in transit.

These drums can be more easily moved when on their sides, but occupy less room when on end, and hence in shipping, handling, and storing the same, it is frequently necessary to change them from end to side, and vice versa. When it is considered that such drums, when filled with petroleum products, semi-liquid furnace lining, etc., weigh from 400 to 850 pounds, it can be seen that such handling is a two-man job, particularly if any great number of drums is to be handled, and that this is time consuming and expensive.

With the above and other considerations in mind, it is proposed in accordance with this invention, to provide a lever for raising such drums to, and lowering them from, the standing position, which enables one man to do the work of two, and to do it in less than the usual time and with less effort.

More specifically, the invention comprises a shaft with a hand end, and an adjustable hook near the other end, for catching under the projecting rim at the head of a drum, and a heel for engaging one of the annular flanges is on the side of the drum.

Further objects, purposes, and characteristic features of the invention will appear as the description progresses, reference being had to the accompanying drawings, showing, solely by way of example, one form of the invention.

In the drawings:—

Fig. 1 is a side elevation of the lever in operative position;

Fig. 2 is a bottom plan view of a portion of the lever;

Fig. 3 is a top plan view of a portion of the lever, with parts broken away;

Fig. 4 is a sectional view on line 4—4 of Fig. 3, with parts left in elevation; and

Fig. 5 is a sectional fragmentary view illustrating the adjustable feature of the device.

Referring to the drawing, the lever comprises a shaft 1 made of suitable material, such as hickory, of a length of perhaps five feet, and tapering slightly from the butt end to the hand end.

Adjustably mounted on the shaft 1 is a grip hook H made of cold rolled steel, for example. This hook is U-shaped, with in-turned pointed ends 3, and a strap 4 welded or otherwise fastened across the legs 5 of the hook. The part 6 connecting legs 5, is reduced slightly in diameter as at 7, and has a flat portion 8 positioned at about a 15 degree angle to the legs 5.

Mounted longitudinally of the shaft, in a depression 9, is a lock bed 10, furnished with a shackle bar 11, the bed and bar being connected together, and to the shaft, by through bolts 12.

Formed in the lock bed 10, is a series of spaced arcuate grooves 13, formed on the same diameter as the reduced part 7 of the hood for rotatably receiving the hook, the reduced part 7 just fitting between the bed and the shackle as shown in Fig. 4, a shoulder 14 at each side of the bed 10 preventing longitudinally sliding of the hook.

While the distance from the inner surface of the shackle 11 to the lowest part of a groove 13, is just equal to the diameter of the reduced part 7, the distance to the top flat part 10' of the bed 10, is just equal to the thickness of the hook bar taken at the flat part 8. Thus, as shown in Figs. 4 and 5, the hook H can not be adjusted from one position to another on the bed 10, when it is positioned at right angles to the shaft 1, but can be thus adjusted, only when rotated toward the handle end of the shaft until the flat part 8 is parallel to the shaft axis, i. e. until the hook legs 5 make an angle of approximately 15 degrees with the axis of the shaft. Rotation of the hook in the opposite direction, to the other side of the shaft, is prevented by the strap 4, to thus prevent rotation of the hook toward the butt end of the shaft from positioning the flat part 8 so as to permit adjustment of the position on the hook on the shaft.

On the opposite side of the shaft, and near the end of same, is a heel portion comprising a transversely cut notch 15 slightly tapering

inwardly, and of a depth to accommodate a drum flange. The upper edge of the notch 15 is protected by a steel plate 16 held in place by a through bolt 17 and having a serrated edge 18 for gripping onto a drum.

The lower edge of the notch 15 is protected by a soft steel plate 19 with a serrated edge 20, held to the shaft by wood screws 21 with countersunk heads, and riveted or welded to, or formed integrally with, a steel ring 22 encircling the butt end of the shaft and held in place by screws 23.

As shown in Fig. 1, the butt end of the shaft 1 is tapered on one side, from the lower edge of the notch 15 to the end of the shaft and covered and protected by the soft steel plate 19 and ring 22.

The lever described above is used in the manner shown in Fig. 1, where a drum D is being raised from its side to one end. The grip hook H is adjusted in position, so as to be substantially 90 degrees to the shaft, when it engages the end flange 24 of the drum, and the heel of the lever engages a side flange 25 as shown. The soft steel plate 19 contacts with the drum surface to give a large bearing area, but can not injure the side of the drum. By raising or lowering on the shaft 1, the drum D is correspondingly moved.

On rotating Fig. 1 90° to the left, this figure illustrates the drum being lowered from its end to its side, and this operation is as important, as that of raising the drum from its side to its end.

While but four adjustment positions for the hook H have been shown, more could be provided if need be. The four positions shown, however, place the hook for operating on the various sizes of drums commonly encountered in practice, namely 27", 30", 36" and 40-42".

It will be seen that with the lever described, the hook H can not slip out of adjustment by accident, but must first be rocked upwardly, as in Fig. 5; that such hook can be adjusted for operation on drums of various sizes, that the heel is arranged and constructed to give a good grip and bearing surface without injuring the drum, and that the various constituent parts are simple, rugged and effective.

Merely by way of example, it is to be noted that the inventor, with the sole aid of a lever as described above, unloaded and stored away, a carload of Hytempite, the carload consisting of 50 drums, each weighing 848 lbs. gross, each drum being taken from end to side position, and again restored to end position for storing. This was accomplished in one-third less time, and with less effort, than two men including himself, had ever before done the same job, and in the very same storehouse.

The above rather specific description of one form of this invention has been given solely by way of example, and is not intended, in

any manner whatsoever, in a limiting sense. Obviously, the invention can assume many different physical forms, and is susceptible of numerous modifications, and all such forms and modifications are intended to be included by this invention, as come within the scope of the appended claims.

Having described my invention, I now claim:—

1. In a drum lever, a shaft, a grip heel on the shaft, a hook adjustably held on the shaft, and means permitting adjustment of the position of the hook longitudinally along the shaft only when the hook is placed in a single predetermined position relative to the shaft.

2. In a drum lever, a shaft, a grip heel on the shaft, a hook adjustably held on the shaft, and means including a grooved bed plate and shackle bar spaced from but fixed to the plate permitting adjustment of the position of the hook longitudinally along the shaft only when the hook is rotated to a single predetermined position relative to the shaft.

3. In a drum lever, a shaft having a hand end, a grip heel on the other end of the shaft, a hook adjustably held on the shaft and rockable about an axis, and means including a grooved bed plate and a portion of the hook receivable in a groove of said bed plate and non-symmetrically formed about said axis, permitting adjustment of the position of the hook on the shaft only when the hook is rotated to make an acute angle with the hand end of the shaft.

4. In a drum lever for handling steel drums, a shaft, a bed plate fixed to the shaft, a shackle bar fixed to the shaft and spaced from the bed plate, a hook having a portion held between the plate and bar, and spaced grooves in the plate receiving the hook portion, said hook portion being reduced in size along one diameter only to just fit between the ungrooved part of said plate and said bar.

5. In a drum lever for handling steel drums, a shaft, a bed plate fixed to the shaft, a shackle bar fixed to the shaft and spaced from the bed plate, a hook having a portion held between the plate and bar, and spaced grooves in the plate receiving the hook portion, said hook portion being dimensioned along one diameter to just fit between the bottom of the groove in the plate and the bar, and along a second diameter at an angle to said one diameter to just fit between the bar and the portions of the plate between the said grooves.

6. In a drum lever for handling steel drums having end flanges and side flanges, a shaft, a bed plate fixed to the shaft, a shackle bar fixed to the shaft and spaced from the bed plate, a hook for engaging an end flange of a drum and having a portion held between the plate and bar, spaced grooves in the plate receiving the hook portion, a heel for engag-

ing a side flange on a drum, positioned on the shaft opposite the said plate comprising a transverse groove portion and reinforcing serrated edged plates positioned at the edges of the groove.

7. In a drum lever, a shaft, a grooved bed plate on the shaft, a shackle bar spaced from the plate and fixed to the shaft, a grip hook having depending legs and a connecting cross bar normally received in a bed plate groove and held between the plate and bar, said cross bar being non-symmetrically reduced in section to have two different transverse dimensions whereby to lock the hook in a particular groove until the hook is rotated to a single predetermined position relative to the shaft.

8. In a drum lever, a shaft, a grooved bed plate on the shaft, a shackle bar spaced from the plate and fixed to the shaft, a grip hook having depending legs, and a connecting cross bar normally received in a bed plate groove and held between the plate and bar, said cross bar being non-symmetrically reduced in section to have different transverse dimensions as measured in different directions to thereby lock the hook in a particular groove until the hook is rotated to a single predetermined position relative to the shaft, and a cross strap connecting the legs of the hook to prevent rotating the hook from one side to the opposite of the shaft.

9. In a drum lever, a substantially straight shaft, a grooved bed plate on the shaft, a shackle bar spaced from the plate and fixed to the shaft, a grip hook for engaging a drum end rib and having depending legs carrying a connecting cross bar normally received in a bed plate groove and held between the plate and bar, said cross bar being non-symmetrically reduced in section thus to lock the hook in a particular groove until the hook is rotated to a single predetermined position relative to the shaft, and a heel portion including a groove in the shaft for engaging a drum side rib.

10. In a drum lever, a shaft, an end rib grip hook adjustably connected to the shaft, and a depressed heel on the shaft for receiving one of the annular side ribs on a usual steel drum.

11. In a drum lever, a substantially straight shaft, a transverse groove at one end of the shaft, reinforcing serrated edged plates protecting the edges of the groove, a

bed plate on the shaft, a shackle bar fixed above the bed plate, spaced grooves in the bed plate, a grip hook received in one of the grooves and held between the plate and bar, the portion of the hook thus held being reduced in dimension in one plane to permit movement of the hook from one groove to another, only when the hook is swung to one of two given positions relative to the shaft.

12. In a drum lever, a shaft, a transverse groove at one end thereof, reinforcing serrated edged plates protecting the edges of the groove, a bed plate on the shaft, a shackle bar fixed above the bed plate, spaced grooves in the bed plate, a grip hook having a reduced portion defining shoulders, received in one of the grooves and held longitudinally by such shoulders between the plate and bar, the reduced portion of the hook thus held being still further reduced along one diameter to permit movement of the hook from one groove to another only when the hook is swung to one of two given positions relative to the shaft.

13. In a drum lever, a shaft, a transverse groove at one end thereof, reinforcing serrated edged plates protecting the edges of the groove, a bed plate on the shaft, a shackle bar fixed above the bed plate, spaced grooves in the bed plate, a grip hook having a reduced portion defining shoulders received in one of the grooves and held longitudinally by such shoulders between the plate and bar, the reduced portion of the hook thus held being still further reduced along one diameter to permit movement of the hook from one groove to another only when the hook is swung to one of two given positions relative to the shaft, and means preventing swinging the hook to one of said positions.

14. In a drum lever, a shaft having a hand end, a grip heel on the other end of the shaft, a hook adjustably held on the shaft, and means including a grooved bed plate and a portion of the hook receivable in a groove of said bed plate and rockable therein about an axis and having a cross section non-symmetrical relative to said axis, for permitting adjustment of the position of the hook on the shaft only when the hook is rotated to make an angle of substantially fifteen degrees with the hand end of the shaft.

In testimony whereof I affix my signature.

SETH D. SIGSBEE.