June 26, 1923. 1,460,023

G. LEAKE

TRANSOM LIFT

Filed May 8, 1922

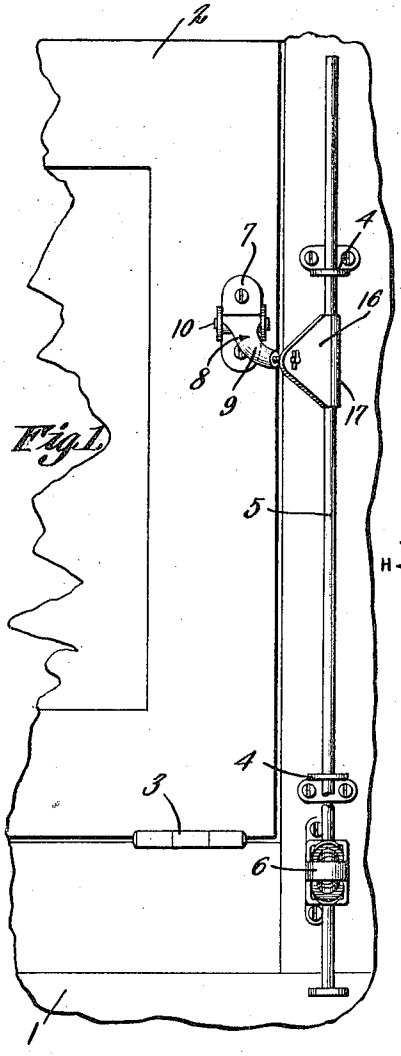


Fig. 1.

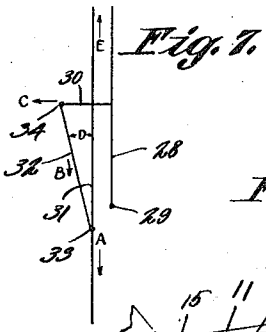


Fig. 7.

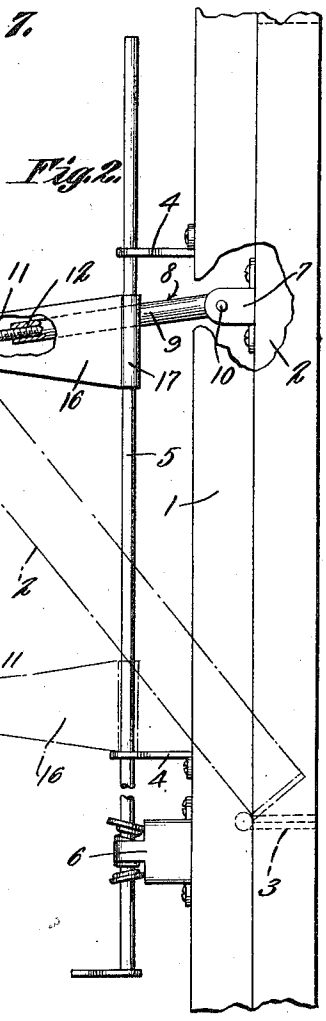


Fig. 2.

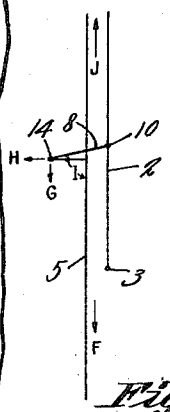


Fig. 8.

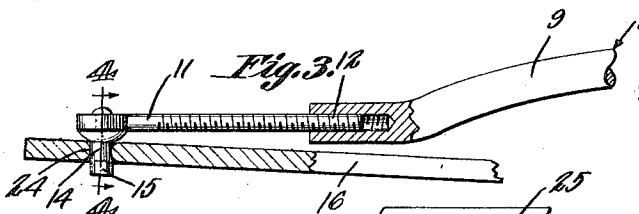


Fig. 3.

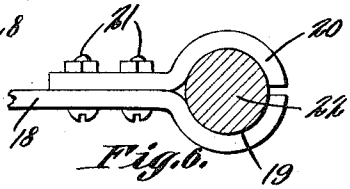


Fig. 6.

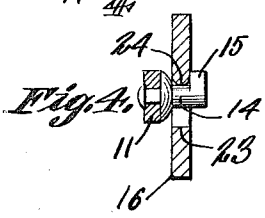


Fig. 4.

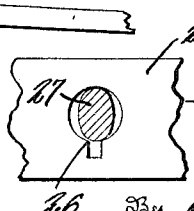


Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE LEAKE, OF MASON CITY, IOWA.

TRANSOM LIFT.

Application filed May 8, 1922. Serial No. 559,325.

To all whom it may concern:

Be it known that I, GEORGE LEAKE, a citizen of the United States, residing at Mason City, in the county of Cerro Gordo and State of Iowa, have invented a new and useful Transom Lift, of which the following is a specification.

This invention aims to provide a simple means whereby a transom may be moved to and from a closed position with less effort than has been required heretofore for the manipulation of devices adapted for a like end—a general statement the correctness of which will be made manifest as the description proceeds.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the drawings:—

Figure 1 shows in elevation, a device constructed in accordance with the invention; Figure 2 is a side elevation of the device; Figure 3 is a plan of the link and attendant parts, portions being in section; Figure 4 is a section on the line 4—4 of Figure 3; Figure 5 is an elevation showing a slight modification; Figure 6 is a section showing another minor modification; Figure 7 is a diagram showing a standard and known form of transom lift; Figure 8 is a diagram showing the transom lift forming the subject matter of this application.

The numeral 1 marks a frame whereunto a transom 2 is hinged at 3, the transom being hinged at its lower edge, although the device forming the subject matter of this application is applicable equally to a transom hinged at its upper edge. An operating member 5, in the form of a rigid rod, is mounted for right line sliding movement in guides 4 on the frame 1 and in a releasable grip 6, of any desired sort, mounted on the frame.

A bracket 7 is secured to the transom 2. The numeral 8 marks a link including a main member 9 which is laterally inclined, the main member having pivot elements 10 mounted in the bracket 7 and affording a means whereby the link 8 may swing vertically on the transom. The link 8 projects to the right in Figure 1, and is located adjacent to the right hand edge of the transom 2, but should it be desired to place the rod 5 at the left of the transom, the bracket 7 may be inverted and placed on the transom adjacent to the left edge thereof, the link 8 then projecting to the left. The link 8 comprises an extension 11 threaded at 12 into the main member 9 of the link, the link, therefore, being longitudinally adjustable. A stud 14 projects laterally from the part 11 of the link 8 and has a transversely projecting finger 15.

An arm 16 is provided, and has a socket 17 whereby the arm is mounted on the rod 5. If desired, as shown in Figure 6, the arm, denoted by the numeral 18 may be provided with a socket 19 comprising a clamp 20 held on the arm by securing elements 21, the device then being adapted to be used in connection with a rod 22 which is already mounted on the frame 1. The arm 16 has a key hole slot 23, the stud 14 of the link 8 being received in the body portion of the key hole slot, it being possible to insert the finger 15 through the extension of the key hole slot, and then dispose the finger out of registration with the extension of the key hole slot, as shown in Figure 1, a secure but releasable pivotal connection between the link and the arm being afforded. It may be expedient to convex the edge of the body of the key hole slot, as shown at 24, to facilitate the movement of the stud 14 in the slot and as shown in Figure 5 the stud 27 may be of elliptical cross section, with a like end in view, the arm being marked by the numeral 25, and the key hole slot appearing at 26.

It is to be observed that the arm 16 which is carried by the operating member or rod 5 projects away from the transom 2, as shown in Figure 2, the link 8 extending across the operating member when the transom is closed, the parts 10 and 7 constituting means for effecting a pivotal connection between the link and the transom at a point closely adjacent to the transom, and on one side of the operating member 5 when the transom is closed, the link being pivoted to the arm 16, on the opposite side of the operating

member, the pivot means, represented by the elements 10 and 14, being located nearly in horizontal alinement when the transom 2 is closed. This arrangement of parts is advantageous, for reasons which will be pointed out hereinafter, and, in this connection, let reference be had to the diagrammatic figures which are numbered 7 and 8.

Figure 7 shows diagrammatically, a standard form of transom lift, the transom 28 being hinged at 29 and carrying a rigid outstanding arm 30, the operating rod being designated by the numeral 31, and a link being marked by the numeral 32, the lower end of the link being pivoted at 33 to the rod 31, and the upper end of the link being pivoted at 34 to the arm 30 on the transom 28. Suppose that the rod 31 is slid downwardly, in the direction of the arrow A motion being transmitted to the transom 28 by way of the link 32 and the arm 30. If the transom 28 is to be swung to an open position, a force acting in the direction of the arrow C must be resolved out of the pull of the link 32, the pull of the link being in the direction of the arrow B. The value of the component C depends upon the size of the angle D between the link 32 and the rod 31, and since the angle D is small, the component in the direction of the arrow C will be correspondingly small, and it will be correspondingly difficult to start the transom to an open position, notably if the transom sticks in the frame. When the transom is closed, the rod 31 moves in the direction of the arrow E, and the angle D decreases, until, when the transom is closed, the angle D is at a minimum, and the component in the direction of the arrow C has a minimum value.

Passing to Figure 8, which shows, diagrammatically, the device forming the subject matter of this application, it will be observed that a downward pull on the rod 5, in the direction of the arrow F, will result in a downward movement at the outer end of the arm 16 on the rod, in the general direction of the arrow G, and out of this force in the general direction of the arrow G, must be resolved a force in the general direction of the arrow H, tending to open the transom 2. The value of the component in the direction of the arrow H will depend on the size of the angle I which exists between the rod 5 and the link 8, and since the angle I is large, the component in the direction of the arrow H will be large also, a comparison of the angle I in Figure 8, and the angle D in Figure 7, being profitable at this point. As the rod 5 moves upwardly in the direction of the arrow J, to close the transom 2, the angle I increases in size, and approaches a maximum as the transom 2 arrives at a closed position, the value of the component in the direction of the arrow H increasing accordingly, when a pull on the rod 5 in the direction of the arrow F is exerted. The advantages in favor of the form shown in Figure 8, over the form shown in Figure 7 as well as the structural differences between the two forms, will be readily appreciated. As a matter of practical test, it has been found that if two devices, constructed as in Figures 7 and 8, and of like dimensions are weighted to the extent of five and one-half pounds, a pull of two pounds will open the transom in the form shown in Figure 8, whereas a pull of twelve pounds is necessary to open the transom when the same is mounted as shown in Figure 7.

The problems arising out the opening of the transom, only, have been discussed, but the advantages in favor of the device forming the subject matter of this application are equally cogent when the problems arising out of the closing of the transom are considered.

I claim:—

1. The combination with a frame and a transom hinged to the frame, of an operating member mounted for right-line sliding movement on the frame; an arm carried by the operating member and projecting away from the transom; a link extended across the operating member when the transom is closed; means for effecting a pivotal connection between the link and the transom at a point closely adjacent to the transom and on one side of the operating member when the transom is closed; and means for pivoting the link to the arm, on the opposite side of the operating member, the two pivoting means being located nearly in horizontal alinement when the transom is closed.

2. A transom lift constructed as set forth in claim 1, and further characterized by the fact that the link is longitudinally adjustable.

3. A transom lift constructed as set forth in claim 1, and further characterized by the fact that the means for pivoting the link to the arm is in the form of a detachable stud-and-key-hole-slot connection.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE LEAKE.

Witnesses:
R. P. PALMER,
THEODORA RONAYNE.