Aug. 6, 1935. F. C. JONES 2,010,490

REFRIGERATOR TRUCK

Filed July 7, 1933 2 Sheets-Sheet 1

Fig. 1.

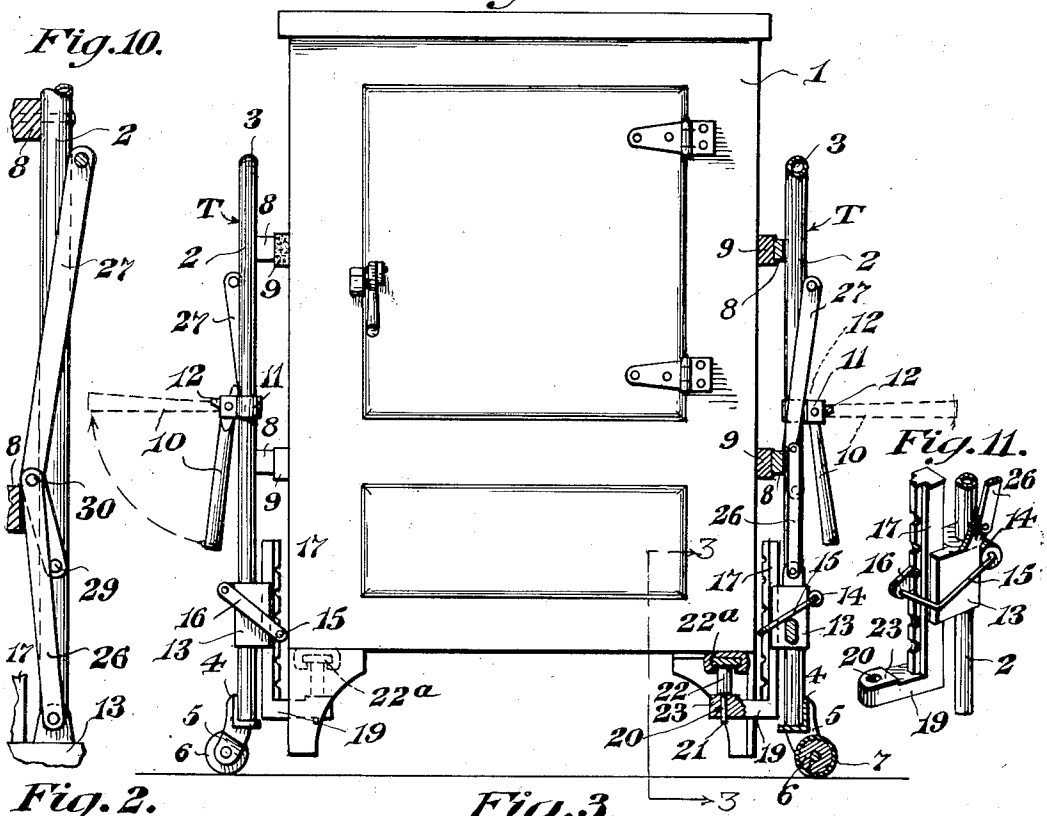


Fig. 10.

Fig. 11.

Fig. 2.

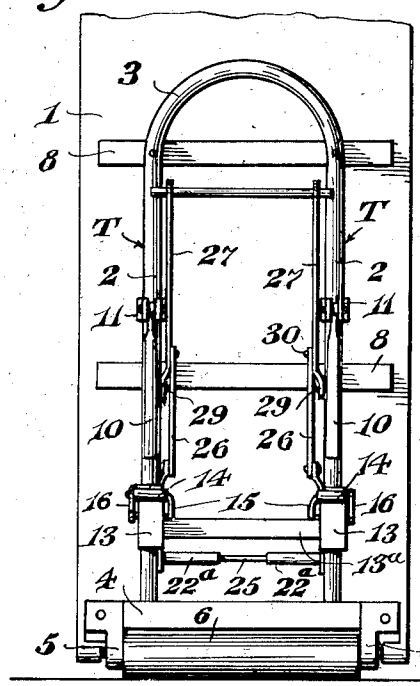


Fig. 3.

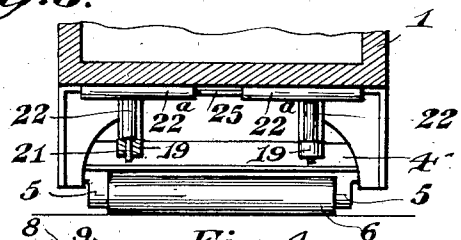
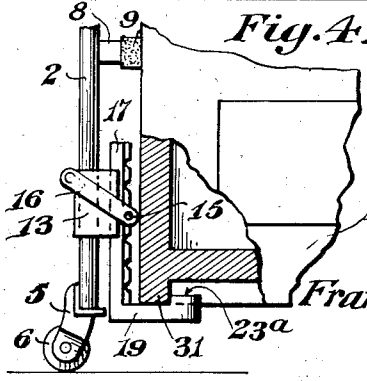


Fig. 4.



Inventor
Frank C. Jones,

By Irving A. McCathran
Attorney

Aug. 6, 1935. F. C. JONES 2,010,490

REFRIGERATOR TRUCK

Filed July 7, 1933 2 Sheets-Sheet 2

Fig. 5.

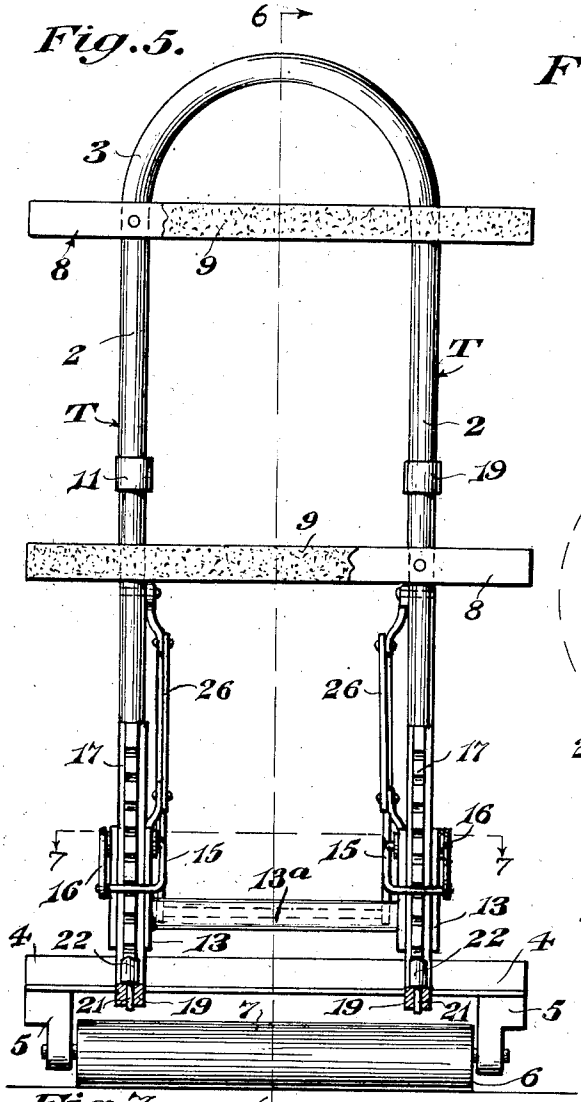


Fig. 6.

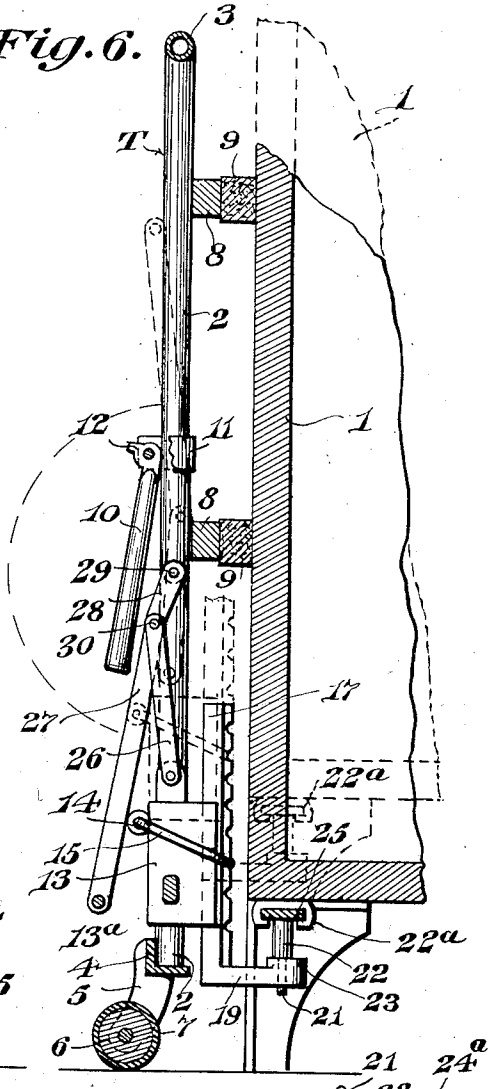


Fig. 7.

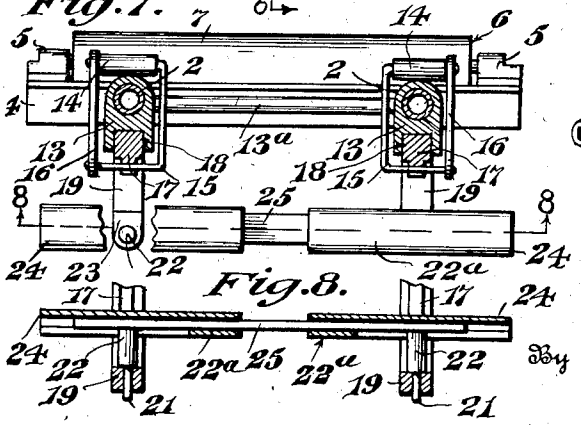
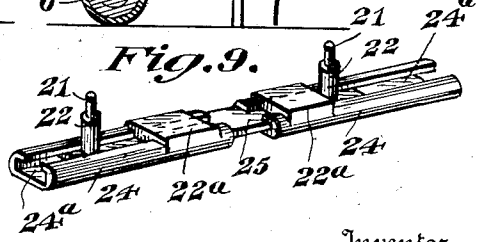


Fig. 8.

Fig. 9.



Inventor

Frank C. Jones,

By Irving L. McCathran

Attorney

Patented Aug. 6, 1935 2,010,490

UNITED STATES PATENT OFFICE

2,010,490

REFRIGERATOR TRUCK

Frank C. Jones, Toledo, Iowa

Application July 7, 1933, Serial No. 679,428

7 Claims. (Cl. 254—8)

This invention relates to refrigerator trucks and has for its object the production of a simple and efficient means for facilitating the lifting and moving of refrigerators or other heavy articles.

Another object of this invention is the production of a simple and efficient truck in the nature of a jack which may be moved under the refrigerator, or other article, to be lifted and which may then be adjusted for lifting the article whereby the article may be easily and conveniently moved from place to place.

A further object of this invention is the production of a simple and efficient truck having an efficient lifting mechanism whereby the object to be lifted may be elevated above the floor in order to permit the truck to freely move the object to a desired position.

With these and other objects in view, this invention consists in certain novel constructions, combinations and arrangements of parts as will be hereinafter more fully described and claimed.

In the drawings:—

Figure 1 is a front elevation of a refrigerator showing the manner in which the same may be lifted prior to moving by the use of a pair of trucks;

Figure 2 is an end elevation of a refrigerator showing one of the trucks in a lifting position;

Figure 3 is a section taken on line 3—3 of Figure 1;

Figure 4 is an edge elevation of the lower portion of the truck with the lifting shoe removed showing the manner in which the truck may be used for lifting articles which are not provided with supporting legs, such for instance as cases, boxes, and the like;

Figure 5 is an enlarged front elevation of the truck, the lifting arms being shown in vertical section;

Figure 6 is a section taken on the line 6—6 of Figure 5;

Figure 7 is a section taken on the line 7—7 of Figure 5;

Figure 8 is a section taken on line 8—8 of Figure 7;

Figure 9 is an inverted perspective view of the lifting shoe;

Figure 10 is a vertical sectional view through a portion of the truck showing the manner in which the lifting handle may be thrown off center to hold the lifting arms in a set lifting position.

Figure 11 is a detail perspective view of a portion of one of the vertical rails of the truck, showing one of the lifting arms mounted thereon.

By referring to the drawings, it will be seen that 1 designates the refrigerator or other object to be lifted, and in carrying out the present invention, I preferably employ two trucks T which are adapted to fit one upon each side of the refrigerator or other article to be lifted to facilitate the moving or shifting of the position of the article to a desired location.

The truck T preferably comprises a pair of parallel vertically extending rails 2 which are connected at their upper ends by means of an arched handle 3. The lower ends of the rails 2 are supported upon a base 4 which is preferably of an angle iron structure having depending roller supporting arms 5 located at the respective ends thereof for supporting a transversely extending roller 6, which roller 6 is preferably provided with a resilient or other suitable covering 7 to constitute a tire. The arms 5 are extended slightly outwardly to project laterally of the central longitudinal axis of the rails 2 in order to facilitate the holding of the rails in a proper vertical position when weight is placed upon the article supporting shoe hereinafter described. The longitudinally extending substantially parallel rails 2 carry transversely extending bracing bars 8, which bracing bars are provided with cushions 9 upon their inner faces to abut against the sides of the refrigerator or other object to prevent the marring of the sides of the refrigerator when the trucks are in use. Pivoted handles 10 are secured to bands 11, which bands are carried by the rails 2 and these handles 10 may be swung to the position shown in dotted lines in Figure 1, to facilitate the moving of the trucks when in place and when released are adapted to normally drop to a lowered position. Each handle 10 is provided with a laterally extending foot 12 which is adapted to abut against its supporting rail 2 to limit the upward swing of the handle 10 beyond its horizontal position when moved upwardly. The supporting bands 11 may be secured in any suitable or desired manner to prevent the same from moving longitudinally of the rails 2.

Each rail 2, which is preferably circular in cross-section, and formed of a pipe-like structure, carries a longitudinally sliding sleeve 13 to permit the sleeve to be adjusted longitudinally of its supporting rail 2. As shown in Figure 7, each of the rails 2 carries a sliding sleeve 13, and the sleeves 13 are connected transversely by a bracing bar 13a. Each sleeve 13 is provided upon its rear face with a journal portion 14, in which journal portion 14 is journaled the adjusting link 15, the adjusting link 15

constituting a substantially U-shaped member the ends of which are connected by means of a plate 16 to provide an elongated loop. This link 15 is adapted to adjustably engage the notched lifting arm 17, which lifting arm 17 is slidably mounted within the longitudinally extending notch or channel 18 formed in the sleeve 13. In this way, the notched lifting arm 17 may be adjustably held in a set position with respect to the sleeve to permit the arm 17 to be properly adjusted to a lifting position. Each arm 17 is provided with a projecting end portion 19, and each end portion 19 is provided with a vertically extending aperture 20. These apertures 20 in the end portions 19 receive the reduced depending extensions 21 of the shoe supporting rods 22, these rods 22 being removable from engagement with the end portions 19 so as to permit the lifting shoe 22a to be removed from these end portions 19 when so desired. Each end portion 19 is provided with an enlarged boss 23 upon its upper face, as shown in Figure 4 in detail, and also in Figure 11, to constitute an abutment for the outer end of the end portion 19. As is shown in the drawings, and as previously described, each rail 2 carries a sleeve 13, and each sleeve 13 carries an arm 17, and these arms 17 support the lifting shoe 22a. These lifting shoes 22a preferably comprise a pair of sections 24 which are connected together by means of a connecting bar 25 which connecting bar 25 is slidably mounted in the end portions 24 and the connecting bar 25 carries at its outer ends the shoe supporting rods 22. The sections 24 are provided with suitable channels 24a in which this connecting bar 25 is slidably mounted thereby permitting a proper adjustment to allow the shoe 22a to be collapsed to be accommodated in a minimum amount of space for storage, and also to permit a proper adjustment to be made to allow the reduced extensions 21 to be fitted into the apertures 20.

Each sleeve 13 is connected to a suspending link 26 and these links 26 are in turn pivotally connected to a lifting handle 27, the lifting handle 27 having offset ends 28 pivotally connected, as at 29, to the rails 2, the links 26 being connected to the handle 27, as at 30. The pivotal connection 30 is offset with respect to the pivotal connection 29 so as to permit the pivotal connection 30 to be swung off center to the pivotal connection 29 when the handle 27 is raised to a vertical position, such as is shown in Figure 10.

As is shown in Figure 4, the end portions of the arms 17 may be used with or without the shoe 22a and in lifting boxes, or other containers which are not provided with legs, the projecting end portions 19 may extend under the bottom of the container A, and the boss 23 will rest against the shoulder portion 31 thereby firmly holding the end portions 19 of the arms 17 against slipping.

From the foregoing it will be seen that the present truck is adapted for use in moving and lifting boxes, cases, refrigerators, or other articles or objects, particularly those of considerable weight. It is therefore not desired to limit the present invention to that of a refrigerator lifting truck, although the same has been particularly designed for this purpose.

The operation of the device is as follows:—

The article or object may be tilted, if desired, particularly where no supporting legs are provided, to a desired position to permit the extensions or projecting ends 19 to be extended under the container at a desired position, whereupon the truck may be moved to the position shown in Figure 4 for the purpose of supporting the container.

When it is desired to move or support a refrigerator having legs such as is illustrated in Figure 1, the truck is rolled under one side end of the refrigerator by pushing the roller 6 under the refrigerator whereupon the arms 17 are adjusted to the desired position and the rails 2 are swung to a vertical position, such as is shown in Figure 1. The handle 27 may then be swung to a position shown in Figure 6, to the position shown in Figures 1 and 10 for the purpose of lifting the refrigerator from the floor or other support, this swinging movement of the handle 27 causing the shoe 22a to engage the bottom of the refrigerator and lift the bottom of the legs from engagement with the floor or other support. As is shown in Figure 1, and as has been previously described, two of these supporting trucks are preferably used, one upon either side of the refrigerator or other object to be moved, thereby facilitating the lifting as well as the moving of the object to a desired position. The refrigerator may, after it has been moved to the desired position, be lowered merely by swinging the handle 27 downwardly to the position shown in Figure 6, at which time the truck may be readily removed from engagement with the refrigerator or other object.

It should be understood that certain detail changes in mechanical construction may be employed without departing from the spirit of the invention so long as these changes fall within the scope of the appended claims.

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

1. A truck of the class described comprising a frame, said frame comprising a pair of parallel rails, sleeves slidably mounted upon said rails, links pivotally connected to said sleeves, a handle pivotally connected to said frame and said links being pivotally connected to said handle off center to cause said sleeves to be automatically held in a vertically adjusted position when said handle is swung to a vertical position.

2. A truck of the class described comprising a frame, a sleeve slidably mounted upon said frame, a lifting arm slidably and adjustably mounted upon said sleeve, means for holding said lifting arm in an adjusted position upon said sleeve, said arm having article engaging means, and means for adjusting said sleeve upon said frame.

3. A truck of the class described comprising a frame, a sleeve slidably mounted upon said frame, a lifting arm slidably and adjustably mounted upon said sleeve, means for holding said lifting arm in an adjusted position upon said sleeve, said arm having article engaging means, means for adjusting said sleeve upon said frame, said arm having a projecting end, and a shoe supported upon said arm.

4. A truck of the class described comprising a frame having a pair of parallel rails, a sleeve slidably mounted upon each rail, each sleeve having a longitudinally extending channel, a lifting arm slidably mounted in each channel, said lifting arm having a plurality of adjusting notches, an adjusting link pivotally secured to said sleeve and engaging said notches for holding said lifting arm in an adjusted position, means for moving said sleeves upon said frame, and a lifting shoe carried by said arms.

5. A truck of the class described comprising a frame having a pair of parallel rails, a sleeve slidably mounted upon each rail, each sleeve having a longitudinally extending channel, a lifting arm slidably mounted in each channel, said lifting arm having a plurality of adjusting notches, an adjusting link pivotally secured to said sleeve and engaging said notches for holding said lifting arm in an adjusted position, means for moving said sleeves upon said frame, each arm provided with a projecting portion, a lifting shoe supported by said projecting portions, and supporting rods removably engaging said projecting portions.

6. A truck of the class described comprising a frame having a pair of parallel rails, a sleeve slidably mounted upon each rail, each sleeve having a longitudinally extending channel, a lifting arm slidably mounted in each channel, said lifting arm having a plurality of adjusting notches, an adjusting link pivotally secured to said sleeve and engaging said notches for holding said lifting arm in an adjusted position, means for moving said sleeves upon said frame, each arm provided with a projecting portion, a lifting shoe supported by said projecting portions, supporting rods removably engaging said projecting portions, said shoe comprising a pair of adjustable sections, and a bar slidably mounted in said sections for holding said sections in assembled relation.

7. A truck of the class described comprising a frame, article lifting means carried by said frame and movable longitudinally thereof, said article lifting means comprising supporting members having sockets formed therein, supporting rods removably fitted within said sockets, slidable adjustable supporting shoes carried by said rods and spanning the distance between the rods to provide a broad article lifting face.

FRANK C. JONES.