Sept. 6, 1932. G. W. BUTTS 1,875,702

CONTAINER FOR TRANSPORTING STACKED ARTICLES

Filed July 30, 1931 2 Sheets-Sheet 1

FIG. II.

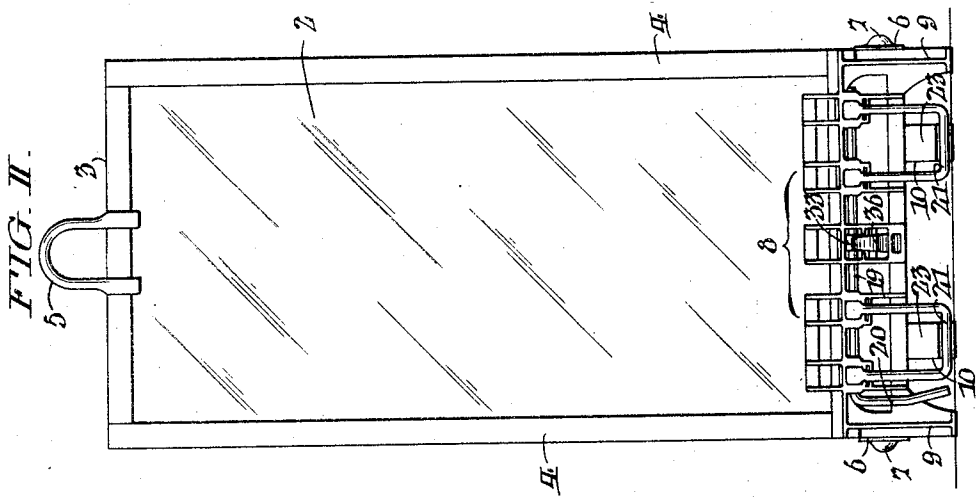


FIG. I.

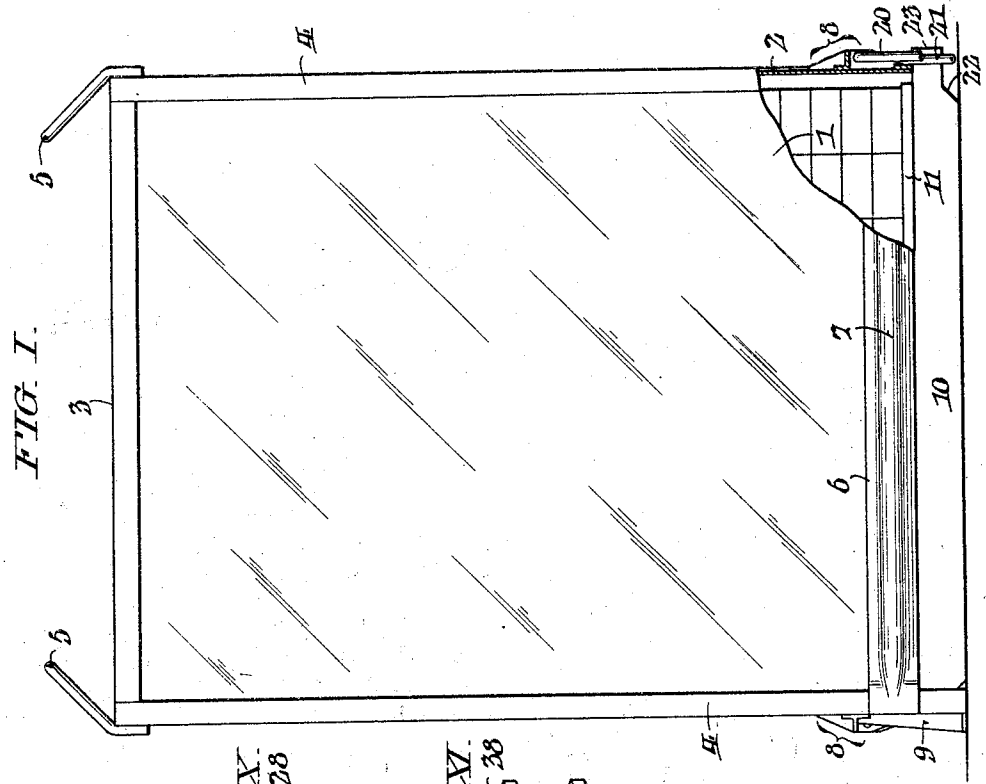


FIG. X.

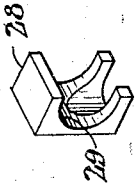
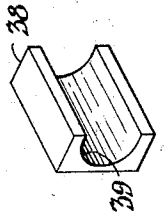


FIG. XI.



WITNESSES

John A. Weidler

Woodward Stevenson

INVENTOR:

George W. Butts

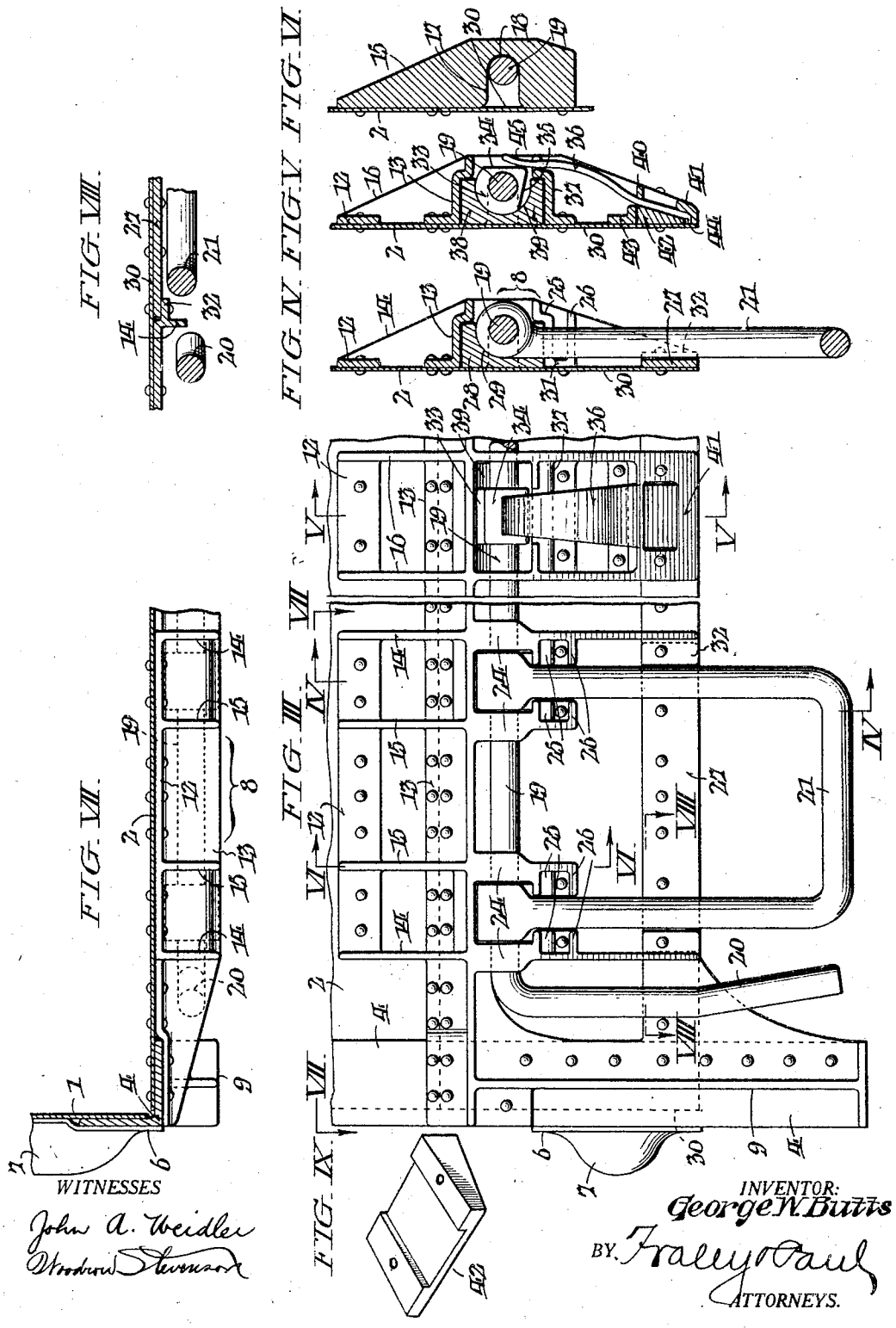
BY Fraser & Paul

ATTORNEYS.

Sept. 6, 1932. G. W. BUTTS 1,875,702

CONTAINER FOR TRANSPORTING STACKED ARTICLES

Filed July 30, 1931 2 Sheets-Sheet 2



Patented Sept. 6, 1932 1,875,702

UNITED STATES PATENT OFFICE

GEORGE W. BUTTS, OF WYNNEWOOD, PENNSYLVANIA

CONTAINER FOR TRANSPORTING STACKED ARTICLES

Application filed July 30, 1931. Serial No. 553,961.

This invention relates to containers for transporting stacked articles, such as face bricks or the like. More particularly, the invention relates to shipping containers of the type used on railroad cars, motor trucks, or trailers. Containers of this type are commonly made of such dimensions that a multiple of them arranged side by side may be conveniently accommodated on the floor of a freight car.

The occasion for the present invention arises from the fact that in transporting bricks or the like, it has been common practice to employ containers with drop doors and to dump the lading at destination by opening the doors and allowing the contents to fall out indiscriminately. This manner of dumping the container contents involves considerable breakage and is particularly undesirable in connection with the transportation of high grade bricks, such as face bricks.

The object of the invention is to provide a container having side and end walls, a top, and no bottom, and further characterized by means which are attached to opposite walls of the container and are adapted to engage and release load-carrying members extending across the bottom of the container. The invention is generally similar to that shown in my pending application for U. S. Letters Patent, Serial No. 529,532, filed April 11, 1931, but is characterized, and distinguished therefrom, by the provision of reinforcements at opposite sides of the container frame having special formations adapted to support pivoted links, which are used as the means for engaging and releasing the load-carrying members, and is further characterized by the provision of a spring which yieldingly maintains the pivoted links in either engaged or released position.

Other objects and advantages characteristic of the present invention will become more fully apparent from the description of one embodiment or example of the invention which follows hereinafter, having reference to the accompanying drawings, whereof:

Fig. I represents a side elevation of a container embodying features of my invention with a portion of a side wall broken away for clearness of illustration.

Fig. II represents an end elevation of the same.

Fig. III represents an enlarged end view of one bottom corner of the container.

Fig. IV represents a cross section of the same taken as indicated by the lines IV—IV of Fig. III.

Fig. V represents a cross section of the same taken as indicated by the lines V—V of Fig. III.

Fig. VI represents a cross section of the same taken as indicated by the lines VI—VI of Fig. III.

Fig. VII represents a cross section of the same taken as indicated by the lines VII—VII of Fig. III.

Fig. VIII represents a cross section of the same taken as indicated by the lines VIII—VIII of Fig. III.

Fig. IX represents an enlarged perspective view of a wedge block; and

Figs. X and XI represent perspective views of bearing blocks for the operating shaft which controls the discharge of the container contents.

The container shown in the drawings and selected as an example of this invention, is a railroad container having such dimensions that when arranged side by side with other similar containers on the floor of a freight car, the lot of containers substantially occupies the complete floor space of the car. The container frame is shaped in the form of a box and comprises, generally, side walls 1, ends walls 2, a top 3, and corner angles 4, by which the side and end walls are joined together. At the top of the container a pair of oppositely disposed loops 5 are provided, there being one such loop at the center of each end wall 2. The loops 5 serve as means by which the container may be engaged and elevated by suitable hoisting apparatus.

Across the bottom of each side wall 1 there is a stiffening member 6, having an outwardly extending protuberance 7 which serves as a fender guarding the side wall 1 of the container against injury in the event of impact between the container and some other object

in the course of its handling. At the bottom of the end walls 2 reinforcements are provided in the form of castings 8 which extend from one side of the container to the other, and which have formed integrally therewith depending legs 9 extending an appreciable distance beneath the bottom edges of the side and end walls. The container has no bottom, and within the space between the legs 9, load-carrying members in the form of wooden beams 10 are disposed across the bottom of the container frame, these members serving to support the contents of the container. As shown in Fig. I, the load-carrying members 10 support a lading platform 11 upon which the articles to be transported are stacked. This invention is not concerned with the method by which articles are assembled and stacked within the container, but an example of a preferred method of arranging bricks upon lading platforms may be found in my pending application for U. S. Letters Patent above referred to.

The reinforcing castings 8 include flanges 12 and parts 13 of angular section at which the castings are adapted to be riveted to the end walls 2 of the container. Joining the flanges 12 and angle members 13 there are a series of vertical ribs 14, 15 and 16 which extend outwardly to a considerable distance beyond the end walls 2. The ribs 14, 15 and 16 are provided with slots 17, as shown in Fig. VI, terminating in semi-circular surfaces 18 within which the link operating shafts 19 are mounted, there being one such shaft 19 for each end of the container. Each link operating shaft 19 is formed with a bent end 20 located near a corner leg 9 of the container, the bent end serving as a handle by which the shaft may be rotated.

Upon each shaft 19 there is welded a pair of U-shaped links 21 which constitute the means for suspending the load-carrying beams 10 at the bottom of the container. The ends of the beams 10 are preferably cut away at 22 to accommodate the bottom of the links 21, and the container attachments and beams 10 are so proportioned as to vertical dimensions that when the container rests upon level ground the beam ends 23 will clear the bottom of the links 21, as shown in Figs. I and II, so that the weight of the package is not transferred to the container until the container has been lifted a short distance above the ground. Accordingly, there is no difficulty in swinging the links 21 into and out of engagement with the beam ends 23.

The vertical ribs 15 and 16 of each casting 8 are thickened at 24 where the shaft 19 is pivotally mounted thereon, and beneath the thickened portions 24 transversely extending lugs 25 and 26 are provided. Whereas the ribs 15 terminate at the lugs 26, the ribs 14, as shown in Figs. III and VIII, extend downward and connect with a flat bar 27 which extends from one leg 9 to the other.

Within the space between the angle members 13 and the lugs 25 bearing blocks 28, shown separately in Fig. X, are inserted, these blocks having semi-circular surfaces 29 which together with the semi-circular surfaces 18 of the ribs 14 and 15 form the complete bearing within which the shaft 19 is rotatably mounted. After the shaft 19 with its pair of links 21 has been inserted from the rear towards the front in its proper position within the casting 8, the bearing blocks 28 and additional bearing blocks 38 hereinafter described are fitted in place, as shown in Figs. IV and V, and then a flat plate 30, which forms an extension of the end wall 2, is attached to the rear face of the casting to hold the bearing blocks 28 and 38 in proper position. Each plate 30 is attached to the reinforcing casting 8 by rivets at the vertical legs of the angle members 13, and at flanges 31 adjacent to the lugs 25 and 26. The flat bar 27 is also riveted to the plate 30 and is joined to the casting 8 by rivets at flanges 32 on the lower ends of the ribs 14.

At the corners of the container the angle members 4 are interposed between the end walls 2, together with the end wall extension plates 30, and the reinforcing castings 8, as shown in Fig. VII.

At the center of each shaft 19 a shoulder 33 is formed thereon having angular surfaces 34 and 35, and a flat spring 36 adapted to bear upon the angular surfaces 34 and 35 is provided. Beneath the angular member 13 of the casting there is a correspondingly shaped member 37 forming therewith a housing for the bearing block 38. The bearing block 38, shown separately on Fig. XI, has a semi-circular surface 39 upon which the shoulder 33 of the shaft 19 is supported. The vertical ribs 16 are connected at their bottom ends by a member 40 which has an angular portion 41 to which the bottom of the spring 36 is attached. A wedge-shaped block 42, shown separately in Fig. IX, fits between the angular portion 41 and an additional angular portion 43 of the casting 8, holding the bent end 44 of the spring 36 in fixed position. The wedge block 42 is also attached to the end wall extension plate 30.

The spring 36 is preferably a comparatively wide and stiff flat spring having a slight curvature as shown at 45 in Fig. V. It will be apparent that when the flat spring 36 engages the surface 34 of the shoulder on the shaft 19, the shaft and its pair of links 21 are maintained in that position in which the links engage the load-carrying beams 10, and that in this situation the pressure of the spring 36 resists yieldingly rotative movement of the shaft 19. When the handle 20 of the shaft 19 is turned through an angle of approximately forty-five degrees, causing

a corresponding movement of the links 21 to a position in which they are disengaged from the ends 23 of the load-carrying beams, the end of the flat spring 36 will bear upon the surface 35 of the shoulder on the shaft 19 and hold the shaft with the links in released position against the pressure of the spring. Accordingly, while the container is being handled in transportation the shaft is in effect locked against rotative movement; and when it is desired to discharge the contents of the container the handle 20 of each shaft 19 is turned to released position, in which position the links 21 are temporarily locked so as to clear the beam ends 23 when the container is raised.

It will be noted that the vertical ribs 14, 15 and 16 of the casting 8 extend outwardly beyond the pivotal points of the links 21 and beyond the flat spring 36. Accordingly these ribs 14, 15 and 16 serve as guards preventing injury to the links 21, or to their operating shafts 19, or to the spring 36 by which the shafts are held in one position or another.

The operation of the apparatus by which the load-carrying beams are engaged and released will be apparent from the above description. After the package, for example stacks of bricks, has been assembled, the container is lowered directly over it and allowed to rest on the ground. In this position the load-carrying beams 10 extend outward beyond the end walls 2 where they may be engaged by the pivotally mounted links 21. When the links 21 have been caused to engage the beam ends 23 by rotation of the handles 20 of the operating shafts 19, the container is ready to be hoisted and transported by any suitable conveyance to its destination. At its ultimate destination the container is unloaded while it rests on the ground by swinging the handles 20 to outwardly extended positions. When each handle 20 has been turned through the desired angle it is automatically locked by means of the springs 36, and the container is ready to be raised with the package of bricks remaining on the ground.

While I have described a preferred form of container, it will be apparent that various changes may be made in the form of the embodiment herein described without departing from the spirit of my invention as defined in the claims hereto annexed.

Having thus described my invention, I claim :

1. A bottomless container of the character described having a box-shaped frame, links pivotally mounted on opposite sides of said frame, said links normally engaging load-carrying members disposed across the bottom of the frame, and being adapted to be swung outwardly to release said load-carrying members, and means whereby said links are yieldingly held in either engaged or released position against the pressure of a spring.

2. A bottomless container of the character described having a box-shaped frame, links pivotally mounted on opposite sides of said frame, said links normally engaging load-carrying members disposed across the bottom of the frame and being adapted to be swung outwardly to release said load-carrying members, shafts for moving said links to engaged or released position, said shafts having portions with flat angular surfaces, and springs co-operating with said surfaces yieldingly to maintain said shafts with their links in either engaged or released position.

3. A bottomless container of the character described having a frame, including side and end walls, and a top, reinforcements extending across opposite sides of said frame in the form of castings having legs integral therewith projecting beneath the bottom of the frame, and links pivotally mounted on said reinforcements and adapted to engage and release load-carrying members disposed across the bottom of the frame.

4. A bottomless container of the character described having a frame, including side and end walls, and a top, reinforcements at opposite sides of said frame in the form of castings having legs extending beneath the bottom of the frame, links pivotally mounted on said reinforcements, said links normally engaging load-carrying members disposed across the bottom of the frame, and means whereby said links are yieldingly held in either engaged or released position against the pressure of a spring.

5. A bottomless container of the character described having a frame, including side and end walls, and a top, reinforcements at opposite sides of said frame in the form of castings having legs extending beneath the bottom of the frame, links pivotally mounted on said reinforcements, said links normally engaging load-carrying members disposed across the bottom of the frame, and means whereby said links are yieldingly held in either engaged or released position against the pressure of a spring, said reinforcements having outwardly projecting portions affording guards for said links and said spring.

6. A bottomless container of the character described having a frame, including side and end walls, and a top, reinforcements at opposite sides of said frame in the form of castings, shafts mounted on said reinforcements, links welded to said shafts, said links normally engaging load-carrying members disposed across the bottom of the frame, and means secured to the back of said reinforcements forming with the same bearings for said shafts.

In testimony whereof, I have hereunto signed my name at Philadelphia, Pennsylvania, this 24 day of July, 1931.

GEORGE W. BUTTS.