

Feb. 16, 1937.

B. F. FITCH

2,070,586

FREIGHT CONTAINER

Filed Oct. 24, 1932

2 Sheets-Sheet 1

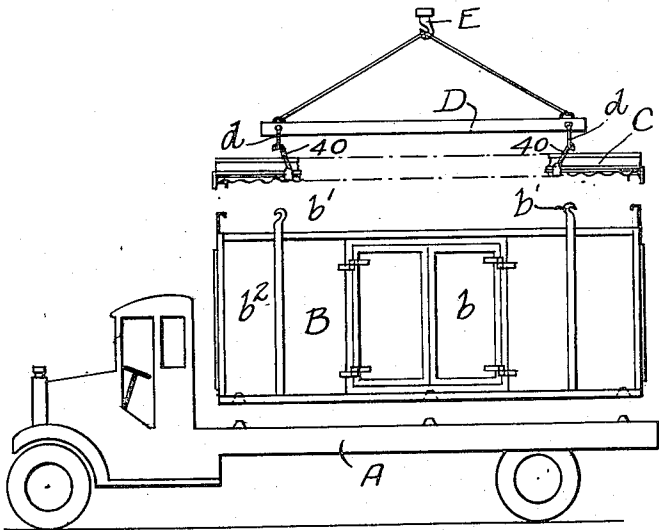


FIG. 1

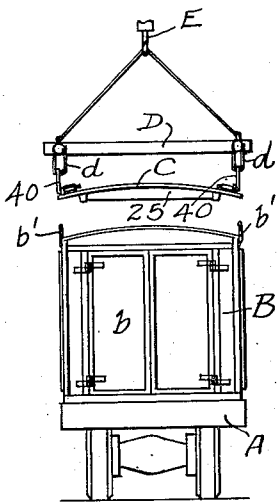


FIG. 2

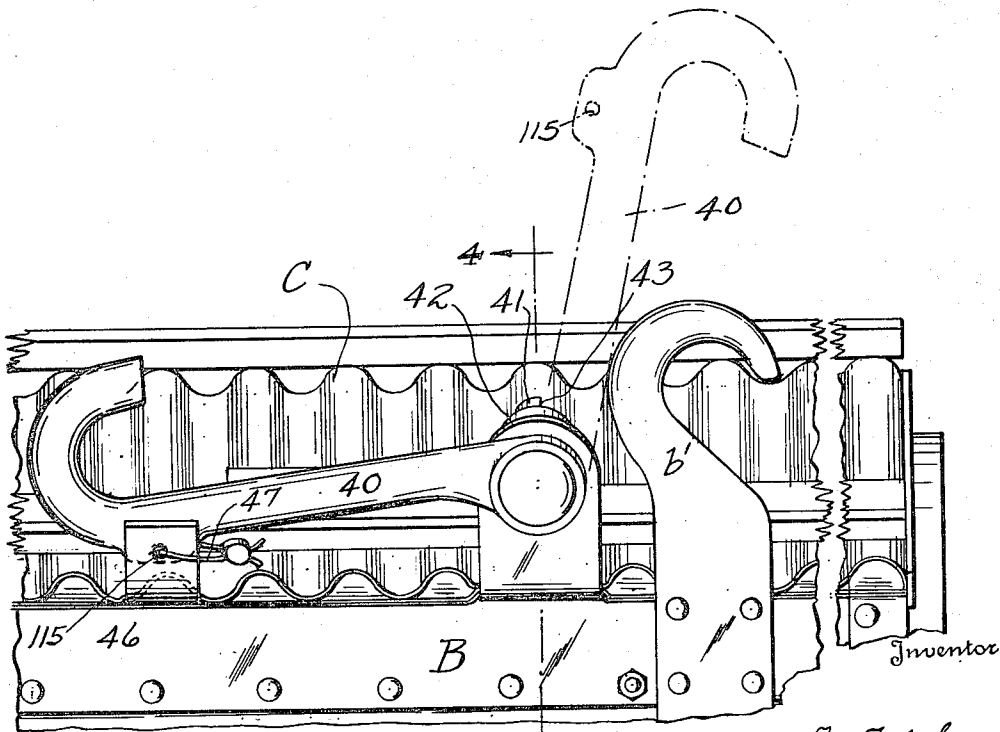


FIG. 3

Benjamin F. Fitch
Walter Golrick & Tarr
Attorneys

Feb. 16, 1937.

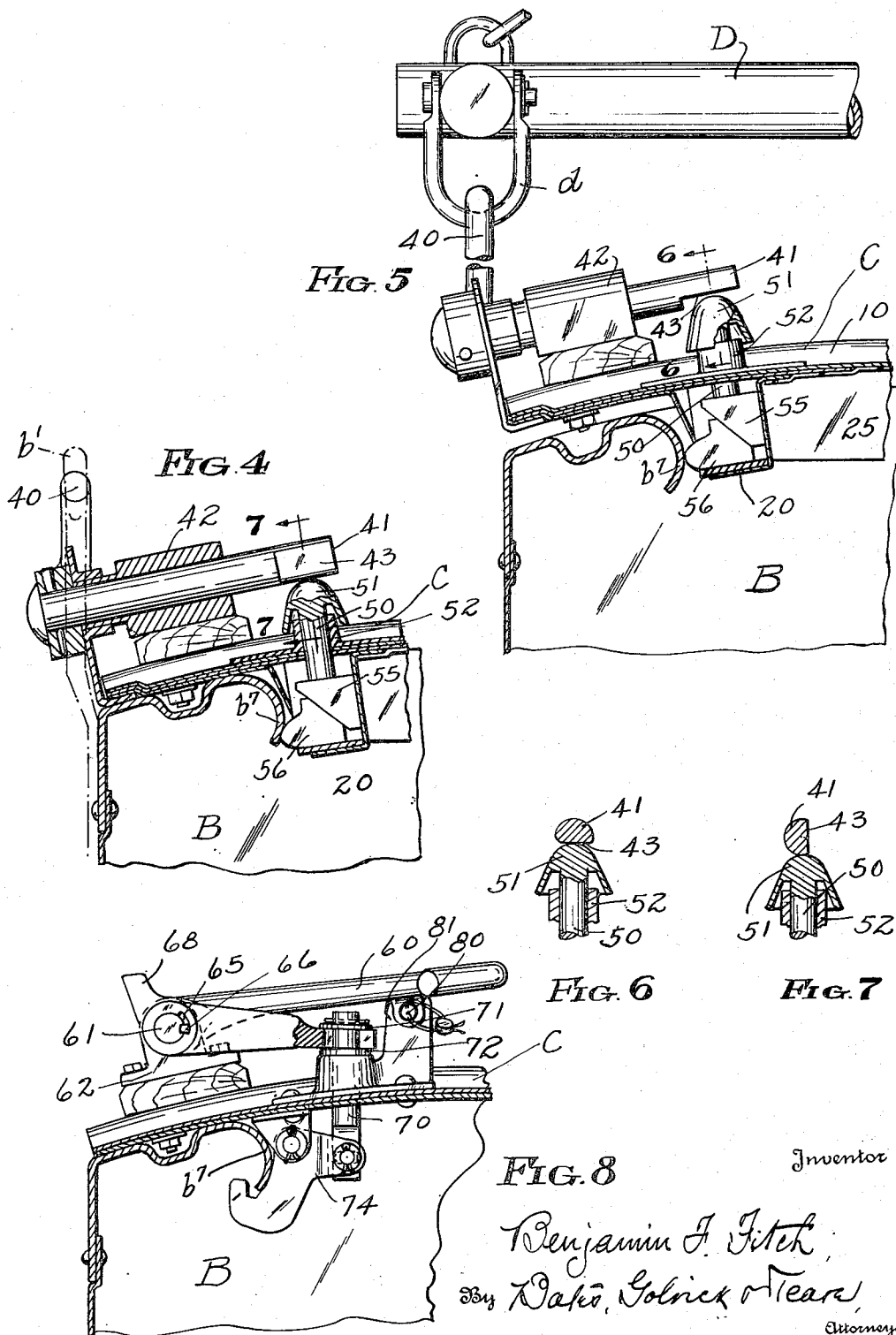
B. F. FITCH

2,070,586

FREIGHT CONTAINER

Filed Oct. 24, 1932

2 Sheets-Sheet 2



Inventor

Benjamin F. Fitch,
By *Davis, Golrick & Sears,*
Attorneys

UNITED STATES PATENT OFFICE

2,070,586

FREIGHT CONTAINER

Benjamin F. Fitch, Greenwich, Conn., assignor
to Motor Terminals Company, New York, N. Y.,
a corporation of Delaware

Application October 24, 1932, Serial No. 639,278

1 Claim. (Cl. 296—137)

This invention relates to demountable bodies of automobile trucks, which are adapted to be loaded independently of the truck, then mounted with the load on the truck, transported by the truck, and thereafter removed with the load for dispersing the contents or subsequent transfer of the loaded body. Such bodies are ordinarily provided with doorways in the sides and ends, but occasionally it is desirable to load the body with a package too large to be passed through the doorway or with material which would be more readily installed through the roof. To provide for these conditions I have in a copending application of mine No. 639,277, executed contemporaneously herewith, shown a demountable body with a removable roof, there being means for normally locking the roof to the body and means for attaching hoisting mechanism to raise the roof from the body when unlocked.

The present invention is concerned with an automatic locking device insuring the roof being locked to the body when it has been placed thereon and the hoist attaching devices are in idle position. This lock is released automatically when the hoist attaching devices are moved to the active position they must occupy when the roof is raised. The result is that the roof is necessarily locked to the body during transportation, but is necessarily free and unlocked from the body when the hoist is attached to the roof to raise it.

My invention comprises the automatic locking of the roof to the body as above outlined; also the feature of controlling such lock by the load attaching device itself; also the mechanisms illustrated in the drawings hereof for causing the locking consequent upon the position of the hoist attaching device. All of this will be more evident from the following description of preferred embodiments of my invention, shown in the drawings.

In the drawings, Fig. 1 is a side elevation of a truck, a demountable body thereon, and a removable roof suspended above the body by a hoist mechanism; Fig. 2 is an end view of such a construction; Fig. 3 is a side elevation of a portion of the body and the roof illustrating the lock-controlling hoist-attaching hook carried by the roof; Fig. 4 is a section through the roof hook shown in Fig. 3 and one form of lock operated thereby, this view being a transverse vertical section on the line 4—4 on Fig. 3, showing the parts in locked position; Fig. 5 is a view similar to Fig. 4 showing the parts in unlocked position, and the roof in the act of being raised; Figs. 6 and 7 are

details of parts of the lock-operating mechanism in the positions of Figs. 5 and 4, respectively, these views being sections on the correspondingly numbered lines on those figures; Fig. 8 is a transverse section through the upper portion of the car side and the adjacent part of the roof, illustrating a modified form of lifting hook for the roof and automatic lock controlled thereby.

In Figs. 1 and 2, "A" indicates a highway truck, "B" a demountable body adapted to rest thereon, this body being provided with double doors *b* at its opposite sides and its ends. At the opposite sides of the body are raising hooks *b1* shown on the upper ends of vertical straps *b2* secured to the sides of the body and extending above the eaves.

"C" in various figures indicates the roof as a whole, which is a single member convexed upwardly, suitably braced on its underside, provided with means for the attachment of lifting devices to raise it. The same hoist mechanism may raise either the roof or the body, as desired. To that end, I have indicated in Figs. 1 and 2 a cradle *D* comprising a rectangular frame adapted to be suspended from a hoist hook *E*, this cradle having four depending shackles *d* adapted to engage with either the body hooks *b1* or suitable hooks on the roof, as hereinbefore explained.

My roof may be made up of corrugated sheets *10*, (the corrugations extending transversely and the end corrugation of one sheet overlapping that of the adjacent one,) and longitudinal and transverse stiffeners. These stiffeners may be hollow girders *20*, extending longitudinally near the two eaves and transverse beams or members *25* between the girders *20*. Metal sheets *15* preferably extend lengthwise of the roof adjacent the edges over the longitudinal girders and the outer portions of the cross members. All of these parts are secured together, as by spot welding or riveting.

The body sides are formed to make a tight connection with the roof at the eaves. As shown in Figs. 4 and 5, the body side terminates in the eave plate *b5*, which bends over toward the interior in a direction inclining slightly upwardly. It then is depressed to form a shallow trough *b6* and then continues upwardly and finally curves downwardly, as shown at *b7*. The downward curve *b7* forms guides to coast with the longitudinal box girders *20* as the roof is put into place, and thus properly center it.

On top of the roof near each edge is a protecting strip *30*, suitably bolted to the roof. The trough *b6* of the eave plate of the body, in addition to stiffening the plate and forming a space to interrupt the passage of moisture to the in-

terior, also serves to receive the nuts on the securing bolts for the strips 30.

As heretofore mentioned, the roof is provided with hooks by which it may be lifted by the same cradle which lifts the body. Such roof hooks are illustrated in Figs. 3, 4 and 5 at 40. They lie in vertical planes corresponding to the planes of the body hooks b1. If desired, the roof hooks may extend transversely of the roof, as shown at 60 in Fig. 8, and be swingable laterally into the vertical plane of the body hooks. In either case, the roof hook is normally idle but may be turned about an angle of approximately 90° to become active, and in each case such turning movement actuates to free the automatic lock heretofore mentioned. I will first describe the construction illustrated in Figs. 3 to 7, inclusive.

The roof hooks 40 are in the form of rock-arms, rigidly attached to transverse rock shafts 41, journaled in brackets 42, mounted on the protecting strips 30. The inner end of this rock-shaft is flattened at 43 and in this region is adapted to engage the head 51 of a pin 50, which is slidably mounted in a nearly vertical direction in the roof, being mounted in a collar 52, carried by the roof. At its lower end the pin 50 is attached to a block 55 within the hollow girder 20. This block has an inclined outer face, bearing against the complementarily inclined face of a block 56, the outer edge of which is adapted to contact with the curved edge b7 of the eave plate of the body.

When the hook 40 is in its idle or substantially horizontal position, as shown in Fig. 3, the rock-shaft 41 is in the position shown in Figs. 4 and 7, and the curved edge cams downwardly on the head 51 of the pin 50, shoving it downwardly, and this shoves outwardly the block 56 until its outer edge extends below the innermost portion of the eave plate curve b7, which constitutes the keeper. This locks the roof to the car body.

As soon as the hook 40 is elevated into the position shown in Fig. 5, which is the position it has to take for engagement of the cradle shackle d, the flattened surface 43 becomes substantially horizontal over the pin head 51. This allows the pin to move upwardly. Accordingly, as the crane draws upwardly on the roof, the camming action of the lower, outwardly directed portion of the eave plate curve b7 forces laterally, toward the center line of the roof, the block 56 which is no longer restrained by the block 55 and pin 50. Thus the roof is free for lifting.

It will be seen, therefore, that whenever the hook 40 is raised into active position the lock is automatically released and the body may be lifted. When, however, the roof has been deposited on the body and the hook 40 is turned down into its horizontal position, this automatically cams the block 56 outwardly and locks the roof in place. The hook 40 may be provided with an eye 45, adapted to register with an eye 46 in a bracket carried by the roof. This enables a car seal 47 to be passed through the registering eyes to retain the hook normally in its lowered position with the lock effective.

If it is desired to have the hooks swing trans-

versely instead of longitudinally, the construction of Fig. 8 may be employed. In this instance the hook 60 is rigid on a rock-shaft 61, journaled in a bearing 62, mounted on the protection strip 30. Loose on this rock-shaft is an arm 64, having an arcuate notch 65 in its hub. A lug 66 on the side of the hook 60 occupies this notch. This makes a loose play connection between the hook and the arm 64. The arm 64 is forked about a pin 70 between two collars 71 and 72 thereon, this pin being slidable through the roof. The lower end of the pin is shown as pivoted to a bell-crank 74, the lower arm of which is adapted to hook beneath the downwardly-turned edge b7 of the body eave plate.

With the construction just described, when the hook 60 is in its idle position, lying on top of the roof, the pin 66 thereof forces downwardly the arm 64, which shoves downwardly on the pin 70, and swings the bell-crank into locking position, so that the roof is positively locked to the body. Now when the hook 60 is turned to its active position, (which is slightly beyond the vertical and limited by reason of a lug 68 on the hook engaging the base of the bracket 62), the hook lug 66 comes to the other end of the slot 64 and swings the arm 64 upwardly, to raise the pin 70 and swing the bell-crank, withdrawing its lower end from beneath keeper b7.

The above construction, like that already described, insures the roof being unlocked when the hook is in active position for lifting engagement. It likewise causes the roof to be positively locked to the body when the hook is in its lowered or normal position. The hook may be retained in the latter position by a car seal 80, passing through an eye in the hook and a registering eye in a bracket 81, secured to the car roof.

It will be seen that whichever form of lock is employed, it is comparatively simple in construction and does not in any manner interfere with the manipulation of the roof either in the moving it or putting it in place, but becomes effective whenever the placement of the roof has been completed. The locking mechanism itself is beneath the roof and thus protected from the weather. The mushroom head 51 on the pin 50 in the construction of Fig. 4, and the lower collar 72 on the pin 70 in Fig. 8, acts as a shield over the annular clearance space about the pin, preventing water or snow obtaining access to the interior through such clearance space.

I claim:

In a demountable automobile body, a removable roof, a movable locking member carried by the roof on its under side, a rock-shaft mounted on the roof, connecting mechanism between the rock shaft and the locking member, whereby the position of the rock-shaft controls the activity and non-activity of the locking member, and a lifting hook carried by the rock-shaft and adapted to project upwardly at substantially right angles to the roof to engage a hoist and to be swung down substantially parallel therewith at other times, the latter position rendering the locking member active.

BENJAMIN F. FITCH.