Sept. 8, 1953 G. H. LOOCK ET AL 2,651,487

FOLDABLE SIGN CARRIER

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Fig. 1.

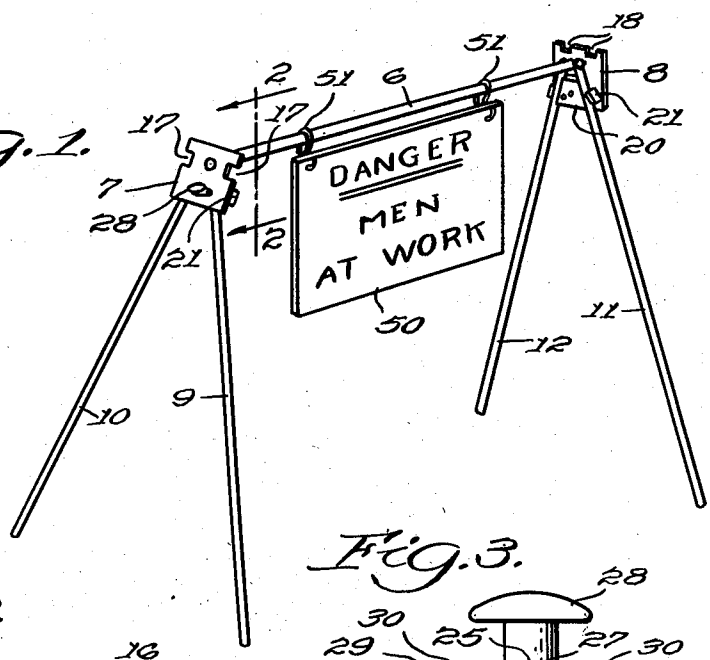


Fig. 2.

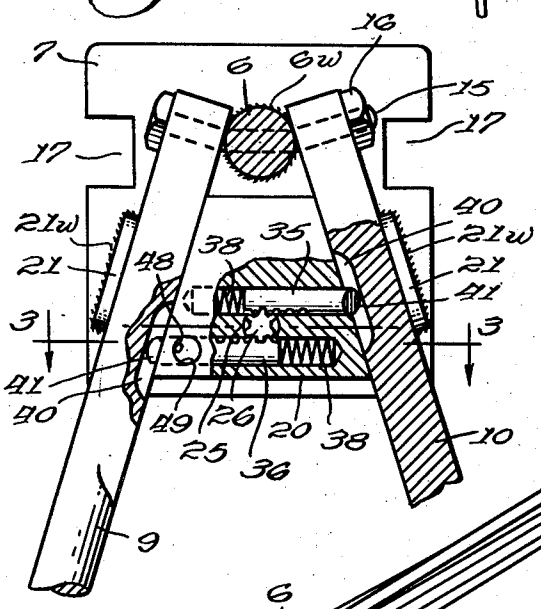


Fig. 3.

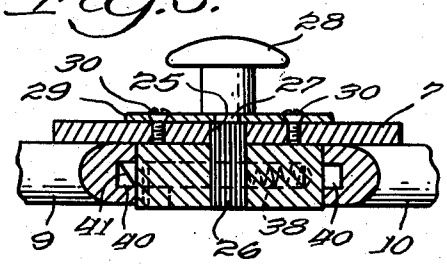
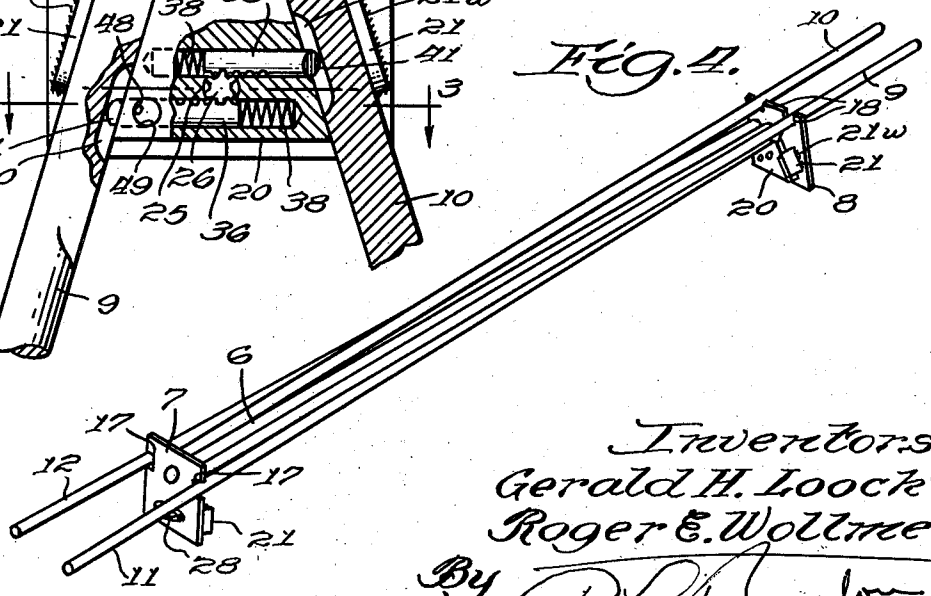


Fig. 4.



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FOLDABLE SIGN CARRIER

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5 Claims. (Cl. 248—166)

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This invention relates to a foldable sign carrier.

Although it is not broadly new, in the art to which this invention pertains, to construct a sign carrier with legs which extend from a body member and which may be swung from an upstanding to a folded relation to said body member, and vice versa, yet there remains room for improving such structures, in several particulars, one of which is by constructing them in such a manner that their legs may be more rapidly adjusted from their folded to their upstanding position, and vice versa.

Accordingly, it is an object of the present invention to provide a sign mounting device with an improved combination of foldable legs and manually releasable means for locking said legs in their upstanding, operative positions.

A more specific object is to provide a device of the above stated kind, wherein the legs thereof, upon being released from their folded positions, will quickly gravitate to, and be automatically locked in their upstanding operative positions, thus imparting a valuable time saving quality to the device, in respect to the installation thereof in its operative position.

Another specific object is to provide, for the device, an improved, manually operable spring biased gear simultaneously to retract the two spring loaded locking members with which the legs of each pair are provided.

Other objects, advantages and features of invention will hereinafter appear.

Referring to the accompanying drawing, which illustrates a preferred embodiment of the invention,

Fig. 1 is a perspective view of the device showing the same supporting a sign.

Fig. 2 is a fragmentary, vertical section on a much larger scale than that of Fig. 1, the plane of section being indicated by line 2—2 on the latter view, parts also being sectioned beyond the indicated plane of section.

Fig. 3 is a horizontal section on line 3—3 of Fig. 2.

Fig. 4 is a perspective showing the device in its folded up condition.

Referring in detail to the drawing, the principal parts therein shown are: the horizontal top rail 6; biased twin plates 7 and 8, one secured to one end of said rail and the other secured to its opposite end; and the two pairs of foldable, cylindrical supporting legs designated 9, 10, 11 and 12 in Fig. 1.

The paired legs 9 and 10 have their upper end portions fastened to one end portion of said rail

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6 by means of a bolt 15 the horizontal midlength portion of which fits within a diametrical bore provided for it through said rail, each end portion of said bolt being deflected upwardly at an obtuse angle, as well shown in Fig. 2. One of said deflected bolt portions fits within a transverse bore provided for it in the upper end portion of the leg 9, and the other deflected bolt portion fits within a transverse bore in the upper end portion of the leg 10, a nut 16 screwed onto said bolt serving to retain the bolt and legs in their operative relaiton to the rail 6, allowing the legs to be swung in the direction of the length of the rail to folded positions wherein the free end portion of each leg is in a latched relation to the plate at the opposite end of the rail. When thus folded the legs 11 and 12 occupy recesses 17 in the side edges of the plate 7 and the legs 9 and 10 occupy recesses 18 in the top edge of the plate 8.

The plates 7 and 8 and their appendages are twins except for the locations of the recesses 17 and 18. Therefore the lettering and description which will now be given of the plate 7 and parts carried thereby relate also to the plate 8.

The plate 7 is provided at the midwidth of its upper end portion with a circular aperture into which is tightly fitted the adjacent end of the rail 6, welding 6*w* being shown in Fig. 2 to supplement the securing of the rail to the plate. Said plate is thus attached to the rail extending upwardly and downwardly with the horizontal dimension of the plate extending substantially at a right angle to the axis of the rail, and the plate, from top to bottom, inclined outwardly in relation to the rail.

The plate 7 carries, projecting from its inner face, three projections, a main central projection or rise 20 and spaced outwardly from each side of said rise an elongated boss 21 which may consist of a block secured to the plate by welding 21*w*. The space between each projection 21 and the adjacent side of the rise 20 is rectangular in cross section and is dimensioned to have swung snugly into it the leg at its side of the structure. It will be seen that said rise 20 is triangularly shaped except that it has one truncated apex, which is directed upwardly.

The central part of the rise 20 is provided with a bore 25, which bore also extends through the plate 7, as shown in Fig. 3. Within this bore is rotatably mounted a gear 26 carried by a stub shaft 27 to which is axially secured an operating knob 28, said stub shaft being of less diameter than the shank of said knob and also of less diameter than said gear so that a contracted neck

is provided, which fits turnably within a face plate 29 attached to the plate 7 by screws 30.

With the upper side of said gear 26 meshes a cylindrical rack bar 35 and with the lower side thereof a like rack bar 36, these rack bars being slidably fitted in suitable horizontal parallel bores provided for them in the rise 20. Each of said bores has an open end portion from which projects the rack bar contained therein, and a closed end portion which contains a spring 38, the spring for the rack bar 35 tends to project it from one side of the rise 20, whereas the spring for the rack bar 36 tends to project it from the opposite side of said rise. Said rack bars form parts of leg locking bolts whose operation will presently be described.

Each of the four legs of the device has in it, not far from its attached end, an internal longitudinal groove 40, shown as rectangular in cross section. Each of the rack bars (35 or 36), has a beveled nose or beveled outer end portion 41 which, like the latching bolt of a door, enters the groove 40 of the adjacent leg when the leg is swung to its extended position, said groove then forming a locking recess which maintains the leg locked in that position. When it is desired to unlock the legs of either pair the knob 28 at their end of the device is turned in the proper direction to cause the rack bars 35 and 36 to be simultaneously retracted from the grooves 40, whereupon the legs may be swung to their folded positions, shown in Fig. 4. When thus folded the free end portions of the legs 9 and 10 occupy the recesses 18 in the upper edge of the plate 8, and the free end portions of the legs 11 and 12 occupy the recesses 17 in the side edges of the plate 7.

The gear 26 may be described as being of a spring biased character as it is indirectly rotated by the diagonally opposite springs 38, said springs causing the rack bars 35 and 36 of each pair simultaneously to be extended to their leg-locking positions, from which positions said rack bars may be retracted by manually rotating said gear in opposition to said springs.

In Fig. 2 is shown a stop pin 48 co-operating with a recess 49 in the side of the rack bar 36 to prevent the spring 38 back of said bar from extending it too far when the legs are in their folded positions. It will be seen that only one of the locking bolts or racks for each pair of legs need be provided with stop means, for the movements of these racks are co-related by the gear 26 which is in mesh with them both.

In Fig. 1 a sign 50 is shown swingably suspended, in a deatchable manner, from the rail 6 by means of a pair of hooks 51. Swingably supporting the sign lessens the danger of the wind blowing the device over.

The four folded up legs are approximately parallel to each other and may be maintained in their folded up latched position in relation to the notched plates 7 and 8 by being collectively grasped by the hand of the workman while he is transporting the device from one place to another, or may be held together by a buckle-carrying strap or other conventional connection girding their midlength portions.

To change the device from a folded up to an operative position it is only necessary, while maintaining the rail 6 in an elevated, horizontal position, to unlatch the legs from the plates 7 and 8 and allow said legs to swing freely down under the urge of gravity till each leg enters the recess provided for it in the lower part of the plate 7 or 8 at its end of the structure, each leg, as it enters said recess gliding over the beveled nose of one of the spring loaded racks and then becoming locked, by said rack, in its rail supporting position. The legs will be made sufficiently heavy to be automatically operated by gravity in this manner.

The sign mounting device provided by this invention is inexpensive to manufacture, is of a sturdy, durable character and when provided with a moderately heavy set of legs will, without overturning, safely support a rail carrying a swingable sign in a wind blowing at fifty or sixty miles per hour.

Even when the wind is not blowing, large trucks passing swiftly by will produce air currents apt to overturn a sign support unless it possesses the non-tiltable quality of the present invention.

In addition to its non-tiltable character this device possesses the merit of being foldable into a neat, compact form for transporting from job to job.

We claim:

1. In a device of the kind described, a horizontally extending rail, an upwardly and downwardly extending plate secured to each end of said rail, the horizontal dimension of each of said plates extending at substantially a right angle to the axis of said rail, a pair of legs fastened to said rail inwardly adjacent to each of said plates, the legs of each of said pairs being inswingable to a latched relation to the plate at the opposite end of the rail and their free ends being engageable with latching recesses provided for them in the latter plate, projections carried by the inner face of each of said plates and affording between them seats to receive and stabilize the legs in their upstanding positions, the legs of each pair having locking recesses in their inner sides, a spring loaded locking bolt for each of the legs of each of said pairs, said locking bolts being slidably carried by said plates and each of said bolts having a beveled nose over which the recessed part of the leg with which it cooperates glides when the leg is swung into its seat, and manually operable means carried by each of said plates to retract simultaneously the bolts of the adjacent pair of legs so as to unlock from said seats the pair of legs which occupy them.

2. The subject matter of claim 1 and each of said bolts consisting of one of the bars of a pair of parallel spring loaded rack bars, and a manually rotatable gear located between said rack bars and meshing with both of them simultaneously to move them to and from their aforesaid leg locking positions.

3. In a device of the kind described, a horizontally extending rail, an upwardly and downwardly extending plate secured to each end of said rail, the horizontal dimension of each of said plates extending at substantially a right angle to the axis of said rail, a pair of legs fastened to said rail inwardly adjacent to each of said plates, the legs of each of said pairs being inswingable to a latched relation to the plate at the opposite end of the rail and their free ends being engageable with latching recesses provided for them in the latter plate, a rise projecting from the inner face of each of said plates, said rise being shaped as a triangular plate with a truncated upwardly directed apex, there being a central bore through said rise and the plate which it overlies, a gear turnably fitted in said bore and provided with an operating knob projecting be-

yond the outer face of the plate which carries said gear, two horizontal, vertically spaced apart parallel bores leading into opposite edges of said plate, a leg locking bolt slidably fitted in each of said bores, one end portion of each of said bolts projecting from the outer end of the bore which it occupies, and an ejecting spring within the bore engaging the opposite end of the bolt, the legs of each pair having locking recesses in their inner sides with which said projecting portions of said bolts co-operate to lock the legs in their operative positions, one of said rack bars being in mesh with the upper side of said gear and the other of them in mesh with the lower side thereof.

4. In a device of the kind described comprising a rail to be supported in a horizontal elevated position above a roadbed and provided with a bore extending transversely through each end portion of said rail; a bolt having a midlength portion fixed within each said bore, when said rail is in its operative position said bore and the part of said bolt therein then extending horizontally, the end portions of said bolts which are outside of said bores being deflected so as to extend at equal upward inclinations at such time, and a set of legs to support said rail, said legs being in two pairs, one pair at each end of said

rail, one leg of each pair being swingably mounted upon one projceting end portion of a said bolt and the other leg of said pair being swingably mounted upon the other projecting end portion of the same bolt, means carried by said rail to lock said legs in rail supporting positions, means carried by said rail to latch said legs in approximately parallel inswung positions, and a latch plate extending transversely of said rail and secured thereto outwardly adjacent to each of said bores, each of said latch plates having in its edge portion recesses and the legs at the opposite end of the rail being swingable to folded positions wherein they latch into said recesses.

5. The subject matter of claim 4 and said recesses consisting of notches cut into an upper edge portion of one of said plates and cut into opposite side edge portions of the other plate.

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