May 18, 1948. C. A. BRITTON 2,441,750

BAG RACK

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Fig. 1.

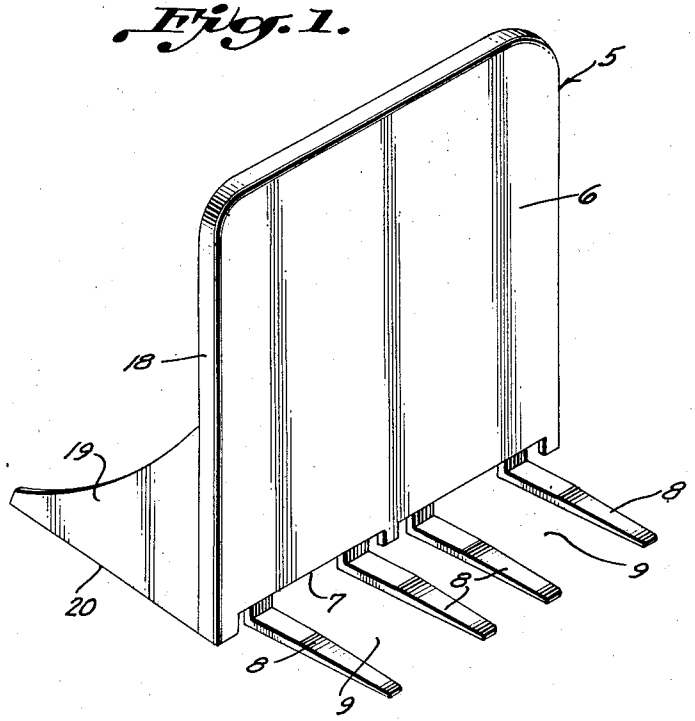
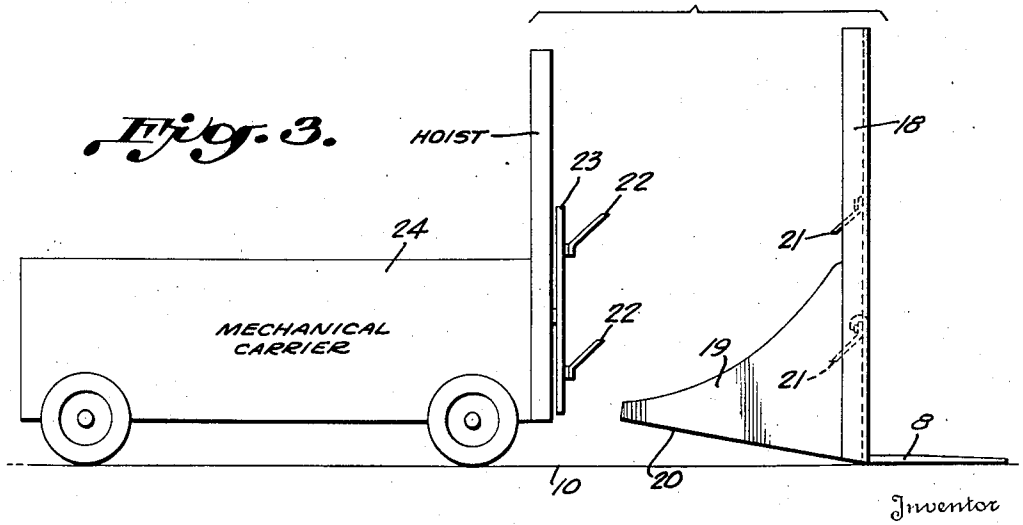


Fig. 3.



Inventor

CHARLES A. BRITTON

Emery Holcombe & Blair

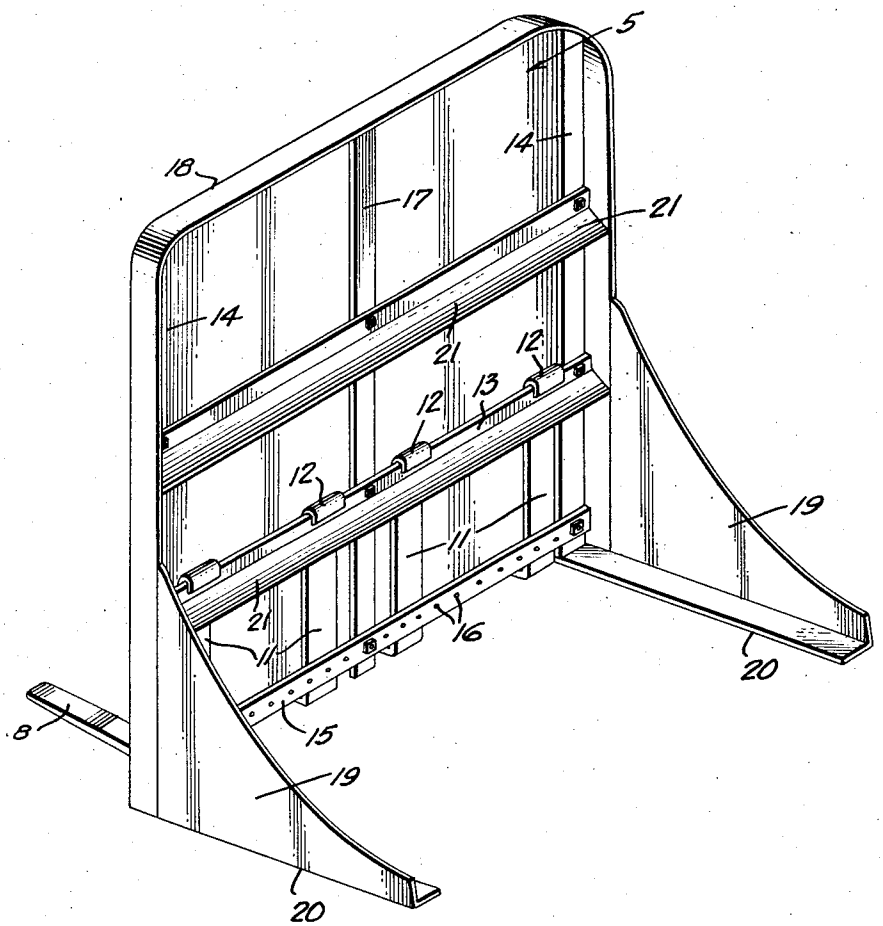
Attorney

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Fig. 2.



Inventor

CHARLES A. BRITTON

By Emery Holcombe & Blair

Attorney

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BAG RACK

Charles A. Britton, Atlanta, Ga., assignor of one-third to Taylor Britton and one-third to Wm. C. Cram, Jr., both of Atlanta, Ga.

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3 Claims. (Cl. 214—65)

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This invention relates to rack attachments for power hoist vehicles, enabling such vehicles to transport material, and particularly concerns such a rack that is specialized for transporting bagged material. The rack hereinafter described is arranged in a novel way to cooperate with bagged material by reason of the non-rigid character of such material to enable transportation with a high degree of efficiency.

One object of the invention is the provision of a rack of the type indicated arranged in a novel way to permit a load of bagged material supported by it to be unloaded on any supporting surface by a simple horizontal withdrawing movement of the rack from the material, without requiring any auxiliary equipment, thereby permitting a load of bagged material to be placed on top of a previously arranged stack, or on a floor, without requiring manual unloading, and without danger of damaging the bags in which the material is packed.

Another object is the provision in a rack for transporting bagged material a novel mounting for plural load-supporting fingers, which mounting provides a simple means of adjusting the fingers for cooperation with different kinds of bagged material.

Still another object is the provision of a bag rack comprising a vertical backing plate that presents a smooth surface for contacting the side of a stack of bags, a system of parallel smooth surfaced supporting fingers for underlying such a stack, and adjustable mounting means securing the fingers to the plate, which mounting is so arranged as to be shielded by the plate from contact with the bags supported on the fingers.

Another object is the provision of a simple coupling device for attaching a rack of the indicated type to a power hoist vehicle, which will enable the rack to be picked up by the vehicle by vertical movement of the lift plate of the vehicle, which will operate to pick up the rack from either a vertical position or a loading position in which it is tilted to aid in arrangement of a stack of bags on it, and which will in either case properly position the rack for lowering to an unloading position correctly related to an underlying surface for accomplishing unloading by withdrawal of the rack from the material.

In the accompanying drawings:

Fig. 1 is a perspective view of the front of a rack constructed in accordance with this invention.

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Fig. 2 is a perspective view of the rear side of such a rack.

Fig. 3 is a somewhat diagrammatic side elevation, indicating the manner in which the rack may be picked up for transportation by a power vehicle provided with a hoist.

Describing the drawings in detail, the rack includes a backing plate 5 having a smooth and substantially plane front surface 6. Extended beneath the lower edge 7 of the plate 5, and projecting forward beyond its front surface 6, are plural parallel supporting fingers 8 that are disposed substantially at right angles to the plate. These fingers 8 are of such configuration and so spaced apart laterally as to provide between them spaces 9, through which, when the rack is positioned with the bottoms of the fingers resting on an underlying surface such as the floor 10, bagged material overlying the fingers will contact the underlying surface with sufficient frictional resistance to movement relative to the surface to permit the fingers to be withdrawn from beneath the bagged material by horizontal movement longitudinal of the fingers. To this end the fingers are provided with surfaces that are smooth and uninterrupted throughout their lengths, to offer relatively little resistance to their withdrawal from beneath a stack of bags overlying them.

As indicated above, the fingers 8 extend beneath the lower edge of the backing plate. In the rear of the plate the fingers have upwardly bent portions 11 that extend along the rear surface of the plate and terminate in hooks 12. A transverse bar 13 horizontally disposed across the rear of the plate between two side frame elements 14 is engaged by the hooks to support the fingers for horizontal adjustment of the fingers transverse to the plate. A second transverse bar 15 is mounted between the elements 14 adjacent the lower edge of the plate, and lies to the rear of the portions 11 of the fingers, securing them against rearward swinging relative to the plate and providing mountings for positioning pins 16 for fixing the lateral positions of the fingers. Preferably the bars 13 and 15 are reinforced by bolting to a central vertical frame member 17. Advantageously the plate is surrounded by a rearwardly extended skirt 18 that encloses the ends of the various transverse elements mounted on the rear of the plate, serving to shield such elements from contacting stacks of bags and thereby tearing the bags.

The rack is intended to be loaded while standing on a floor unattached to a vehicle. In order

to facilitate the arrangement of a stack of bags in overlying arrangement upon the fingers 8, and with a side contacting the front surface 6 of the plate, the latter is provided with rearwardly projecting wings 19 having lower edges 20 arranged at an acute angle with the plate 5 to support the latter in a position slightly tilted to the rear. In this position the fingers are tilted above the floor at a small angle.

After a rack has been loaded with bags stacked upon the fingers, the rack is picked up by a power vehicle provided with a hoist, for transporting the stack of bags to a desired location where it may be unloaded by placing the rack with the bottoms of the fingers in contact with an underlying surface upon which the stack of bags is to be placed, and thereafter withdrawing the fingers from beneath the bag stack by a horizontal rearward movement of the rack. To accomplish this unloading the rack is lowered upon the underlying surface with the fingers parallel to such surface, that is to say, in horizontal disposition. To provide for positioning of the rack with the fingers horizontal and the backing plate 5 vertical, and to permit such positioning to be accomplished by means of a power lift vehicle having a lift plate that is permanently arranged in a vertical position, as well as by such a vehicle provided with a lift plate that is angularly adjustable, the following described coupling device is employed.

Upon the rear of the vertical frame members 11 and 17 are supported a vertically spaced pair of coupling members in the form of plates 21 transversely disposed relative to the plate 5 and extending rearwardly and downwardly. On the lift plate of a power hoist vehicle are mounted cooperating oppositely disposed lifting plates 22 arranged at angles similar to those of the plates 21 when the lift plate 23 is vertically positioned. When the vehicle 24 is brought up to the rear of the rack with the plates 22 underlying the plates 21, and with the lift plate 23 in vertical disposition, the rack will be brought from its tilted loading position to a position wherein the plate 5 is vertical. In the case of a vehicle provided with an angularly adjustable lift plate, engagement of the vehicle and rack may be accomplished with both the rack and lift plate in tilted positions, and vertical positioning accomplished during transportation.

When the loaded rack has been brought to the location at which the stack of bags is to be deposited, the bottoms of the fingers are brought into overlying contacting relation with the surface upon which the stack is to be deposited, and thereafter the rack may be withdrawn from beneath the stack by simply withdrawing it horizontally, the greater frictional resistance to relative movement between the bags and the surface than to longitudinal withdrawal of the fingers from beneath the bags, serving to hold the stack in the desired location. Vertical positioning of the rack prior to this unloading operation insures that the stack will stay as arranged in loading the rack.

The smooth surfaces of the fingers, besides permitting the withdrawal of the rack from the load of bags permits the load to be deposited on top of a previously placed stack of bags, the fingers sliding from between the underlying previously placed stack and the overlying stack being unloaded from the rack, while contact between the upper and lower surfaces of the respective stacks provides for retaining of the upper one in

position upon the top of the lower one. The rack therefore enables stacks to be built up in successive courses as high as permitted by the height to which the lift plate of a particular hoist vehicle may be raised. This is of great advantage in avoiding the necessity of a great deal of manual handling hitherto necessary in the stacking of bags.

The various structural details of the rack that have been described render the rack peculiarly suited to the handling of bags. In addition to the advantages provided by easy loading by manual stacking of bags against the back plate when tilted upon the wings 19, and the highly useful features of power operated unloading provided by the use of fingers so arranged as to provide for contact between a stack of bags and an underlying surface, the rack is peculiarly suited for carrying bags because of its presentation of only smooth surfaces for contacting bags, all parts that necessarily have projections or corners, such as the adjustable mountings of the fingers, and the coupling plates, being adequately shielded by the plate 5 and the surrounding skirt 18 against contact with the bags.

I claim:

1. A rack for transporting bagged material comprising a substantially vertical backing plate having a smooth front surface, plural parallel fingers projecting forward from such surface and substantially at right angles thereto, said fingers being so spaced and of such configuration as to provide contact between an underlying surface contacted by the bottoms of the fingers and bagged material overlying the fingers offering greater frictional resistance to relative movement between such surface and material than to relative longitudinal movement between the fingers and such material, a supporting member extended rearwardly from the plate and having a lower edge arranged at an acute angle to the front surface thereof for supporting the plate in a rearwardly tilted position, and a rearwardly and downwardly inclined coupling member secured to the rear of the plate for overlying engagement with an oppositely inclined member projecting forward from the lift plate of a power hoist vehicle, the said member being arranged at such an angle to the plate as to insure the latter assuming a vertical position when raised vertically by such a hoist.

2. A stacking and transporting rack to be used in connection with a power hoist vehicle having a movable forwardly projecting supporting member, said rack comprising a substantially vertical backing plate and a substantially horizontal member secured to the back of said plate at a point substantially above its base and adapted to be engaged by said supporting member when it is lifted by said power hoist and released when said supporting member is lowered, and a plurality of removable and laterally adjustable support fingers projecting forwardly and horizontally beneath the lower edge of said backing plate, said fingers having portions extended upward in the rear of said backing plate and slidably secured to said horizontal member.

3. A stacking and transporting rack to be used in connection with a power hoist vehicle having a movable forwardly projecting supporting member, said rack comprising a substantially vertical backing plate and a plurality of substantially horizontal members secured to the back of said plate at points substantially above its base, at least one of said horizontal members being

adapted to be engaged by said supporting member when it is lifted by said power hoist, and released when said supporting member is lowered, and a plurality of removable and laterally adjustable support fingers projecting forwardly and horizontally beneath the lower edge of said backing plate, said fingers having portions extended upward in the rear of said backing plate and slidably secured to one of said horizontal members.

CHARLES A. BRITTON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,803,058	Fontaine	Apr. 28, 1931
1,884,356	Stuckey	Oct. 25, 1932
2,178,369	Dunham	Oct. 31, 1939
2,239,135	Wehr	Apr. 22, 1941
2,256,454	Bomar	Sept. 16, 1941
2,302,137	Neuman	Nov. 17, 1942
2,339,120	Ulinski	Jan. 11, 1944
2,368,122	Dunham	Jan. 30, 1945
2,386,759	Ulm	Oct. 16, 1945

FOREIGN PATENTS

Number	Country	Date
499,033	Germany	May 30, 1930