

Oct. 3, 1944.

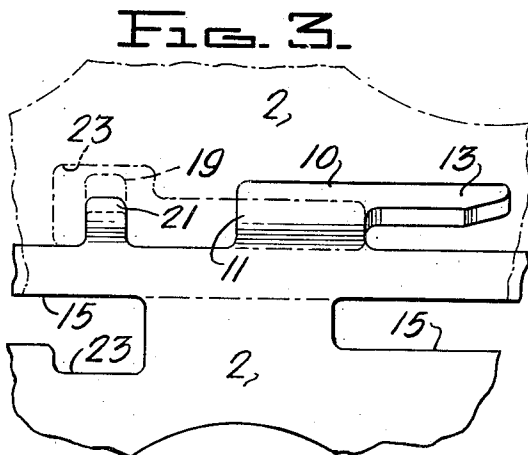
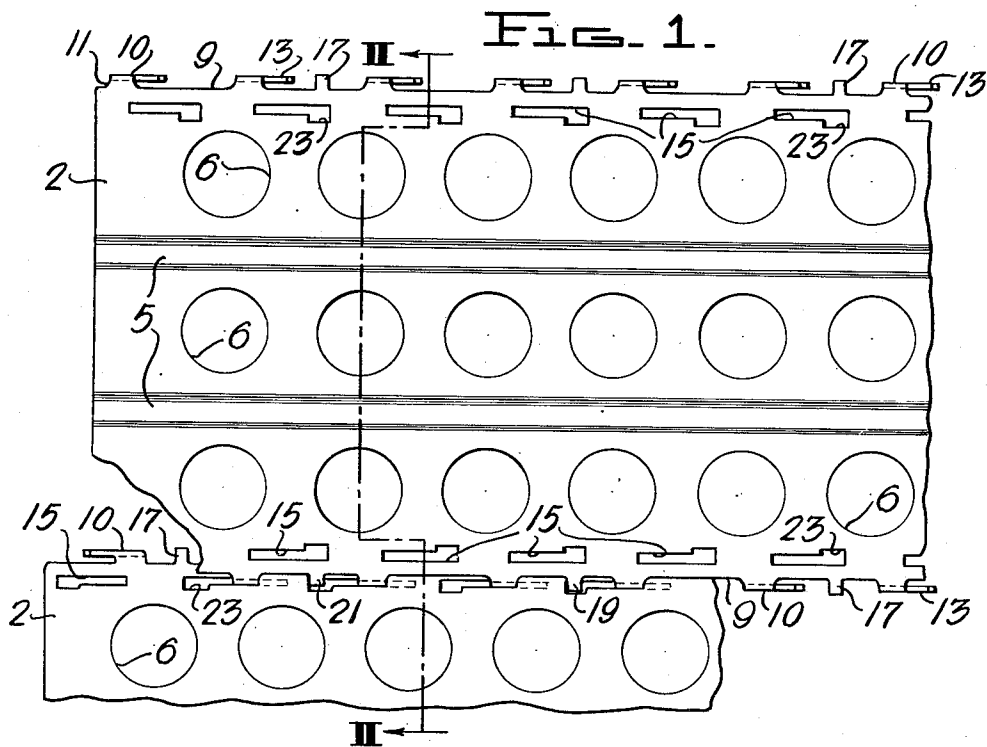
C. B. CUSHWA, JR., ET AL

2,359,548

PORTABLE DECK FOR AIRPLANE RUNWAYS AND THE LIKE

Filed Sept. 9, 1943

2 Sheets-Sheet 1



INVENTORS.
 CHARLES B. CUSHWA, JR.
 and GERALD G. GREULICH.
 by: *John E. Jackson*
 Attorney.

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FIG. 4.

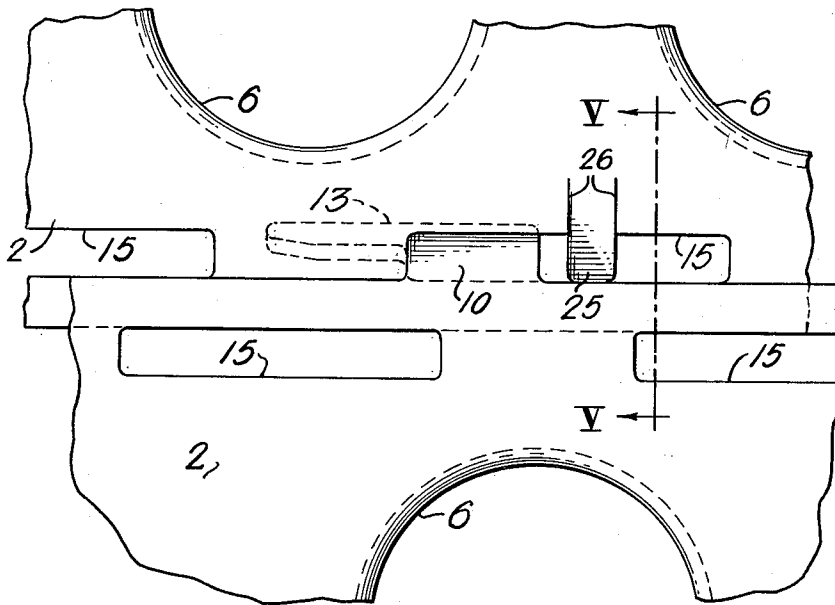


FIG. 5.

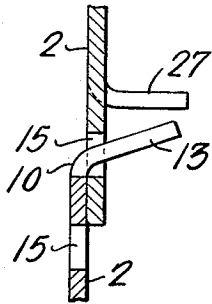
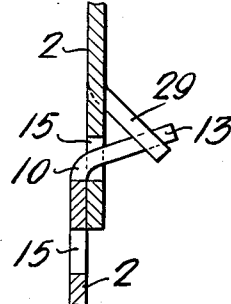


FIG. 6.



INVENTORS.
CHARLES B. CUSHWA, JR.
and GERALD G. GREULICH.
by: *John E. Jackson*
Attorney.

UNITED STATES PATENT OFFICE

2,359,548

PORTABLE DECK FOR AIRPLANE RUNWAYS
AND THE LIKE

Charles B. Cushwa, Jr., Youngstown, Ohio, and
Gerald G. Greulich, Mount Lebanon, Pa., as-
signors to Carnegie-Illinois Steel Corporation,
a corporation of New Jersey

Application September 9, 1943, Serial No. 501,660

5 Claims. (Cl. 94—13)

This invention relates to portable decks and more particularly to those which provide paved areas on unstable soil and the like for airplane runways, storage and handling of materials and freight, etc. In the patents to Greulich, No. 2,294,549 and No. 2,294,550, dated September 1, 1942, there is shown and described portable decks somewhat similar to that of the present application which is an improvement thereover. In each of these patents the planks of the deck are locked together by spring clips which often become lost, thus causing difficulty in the field which may be far from the source of supply. In addition the cost of spring clips for the tonnage of portable decks now being produced is high.

It is among the objects of the present invention to eliminate the need of a spring clip by providing an integral locking lug on the plank.

This and other objects will be more apparent after referring to the following specification and attached drawings, in which:

Figure 1 is a fragmentary plan of a pair of metallic planks, assembled in accordance with the teachings of the invention;

Figure 2 is a sectional view on the line II—II of Figure 1;

Figure 3 is a fragmentary plan view showing a detail of the locked interlock;

Figure 4 is a view similar to Figure 3 but showing a modification thereof;

Figure 5 is a sectional view taken on the line V—V of Figure 4; and

Figure 6 is a view similar to Figure 5 but showing the locking lug in locking position.

Referring more particularly to the drawings, the reference numeral 2 generally designates a metallic plank of which a group are assembled to form the portable deck of the present invention. Each of the metallic planks 2 defines a flat surface from which a plurality of continuous parallel longitudinal grooves 5 are formed by deforming the material out of the general plane of the flat surface and into continuous U-shaped troughs. On either side of the continuous parallel longitudinal grooves 5 is a row of circular apertures 6, each of which is formed by punching the metal out of the flat surface of the plank 2 to provide a downwardly extending circumferential coniform flange 7. The details of this construction are described in the Greulich patent application, Serial No. 398,658, filed June 18, 1941, and entitled "Portable deck." It will be understood that this invention is not limited to such construction since the construc-

tion may be that shown in the above mentioned patents.

The longitudinal edges 9 of each of the metallic planks 2 are provided with aligned spaced downwardly projecting lugs 10, each of which comprises a shank 11 and a longitudinally extending elongated prong portion 13. These elongated prong portions 13 are in alignment and all of them extend in the same direction.

Referring more particularly to Figure 1, it will be perceived that the flat surface of each of the metallic plates inwardly of its longitudinal edges 9 and outwardly of the longitudinal grooves 5 is provided with a series of elongated slots 15 which correspond in number, size and shape to receive and have extend therethrough the aligned spaced longitudinally extending elongated prong portions 13 of an adjacently disposed plank 2. The fastening means so far described is that disclosed in the above mentioned patents which use a spring clip to lock the lugs 10 in the slots 15. The necessity of these spring clips is eliminated in the present invention by providing locking lugs 17 between some of the downwardly projecting lugs 10. The lugs 17 are bent slightly downwardly as shown at 19 and extend from the plank the same distance as the downwardly extending lugs 10.

In operation:

A series of metallic planks 2 are laid in the form of a blanket in which alternate rows are reversed so that the longitudinally extending elongated prong portions 13 in one row point in a direction which is opposite that of the corresponding elements of the metallic planks of the adjacent row. This permits placing of the rows one at a time in straight sequence, the longitudinally extending elongated prong portions 13 of the row being placed so as to be readily entered from the top into the elongated slots 15 in the leading edges of the metallic planks already in position. The space between the upper edges of the elongated prong portion 13 and the lower edges of the metallic planks 2 is materially greater than the thickness of the planks, this permitting the removal of any plank from its assembled relationship by merely raising its end opposite that toward which the elongated prong portions 13 extend and sliding the said plank in the direction of its raised end. In order to secure the interlocked metallic planks against displacement, the lug 17 is bent downwardly from the position indicated as 19 to the position indicated as 21. This prevents the planks from being slid longitudinally for removal. The slots 15 are enlarged

at 23 to enable the lug 17 to be bent easily downward into position. Ordinarily two of the locking lugs 17 are bent downwardly into the slots 15 and the lugs which are not used remain as spares. The lugs are bent slightly downwardly as shown at 19 so that their tops are below the surface of the plank and the top of the deck surface and will not project up to engage with the tread of the airplane tires. If the lug is too long or is not bent down as shown it will cause serious damage to aircraft landing on such planks especially when two planks because of uneven ground are bent upwardly into a slightly inverted V at the interlock. It is also easier to nest a plurality of planks together when the lugs are in this position.

Figures 4 to 6 inclusive disclose a modified form of locking lug which is attached to the female member of the joint. The lug 25 is formed as shown in Figure 4 with the metal slot at 26 and when the slot 15 is punched, the lug is bent down to the position shown at 27 in Figure 5. This is the normal position of the lug and permits insertion of the downwardly extending lug 10 into the slot 15. After the lug 10 is inserted in the slot 15, the lug 25 is bent upwardly to the position shown at 29 in Figure 6, this preventing retraction of the prong portion 13 from the slot.

While two embodiments of the invention have been shown and described, it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

We claim:

1. A plurality of metallic planks adapted for rapid attachment and detachment and forming a substantially horizontal portable deck capable of sustaining superposed loads, at least one of each pair of abutting planks having a series of aligned spaced longitudinally extending openings inwardly of an edge thereof, the other plank of each pair being provided along marginal portions thereof with a series of aligned spaced downwardly projecting lugs which align with and extend through said openings, each of said lugs comprising a shank and an enlarged head portion, said openings being substantially larger than the enlarged head portions of the lugs whereby, upon disposing said lugs in said openings and subjecting the planks to relative longitudinal movement, the enlarged head portions of the said lugs are disposed beneath the bottom of the abutting plank to effect an interlock, one of said abutting planks having at least one integral locking lug which in plan view extends transversely of one of said openings and is positioned below the top of the last-mentioned plank to obstruct relative longitudinal disengaging movement of the planks by engaging a part of the other plank on such movement.

2. A plurality of metallic planks adapted for rapid attachment and detachment and forming a substantially horizontal portable deck capable of sustaining superposed loads, at least one of each pair of abutting planks having a series of aligned spaced longitudinally extending openings inwardly of an edge thereof, the other plank of each pair being provided along marginal portions thereof with a series of aligned spaced downwardly projecting lugs which align with and extend through said openings, each of said lugs comprising a shank and an enlarged head portion, said openings being substantially larger than the enlarged head portions of the lugs whereby, upon disposing said lugs in said open-

ings and subjecting the planks to relative longitudinal movement, the enlarged head portions of the said lugs are disposed beneath the bottom of the abutting plank to effect an interlock, one of said abutting planks having at least one integral locking lug which is, after assembly, adapted to be bent and in plan view extends transversely of one of said openings to obstruct relative longitudinal disengaging movement of the planks by engaging a part of the other plank on such movement, said locking lug normally being bent downwardly below the top of said planks.

3. A plurality of metallic planks adapted for rapid attachment and detachment and forming a substantially horizontal portable deck capable of sustaining superposed loads, at least one of each pair of abutting planks having a series of aligned spaced longitudinally extending openings inwardly of an edge thereof, the other plank of each pair being provided along marginal portions thereof with a series of aligned spaced downwardly projecting lugs which align with and extend through the said openings, each of said lugs comprising a shank and an enlarged head portion, said openings being substantially larger than the enlarged head portions of the lugs whereby, upon disposing said lugs in said openings and subjecting the planks to relative longitudinal movement, the enlarged head portions of the said lugs are disposed beneath the bottom of the abutting plank to effect an interlock, the second mentioned of said abutting planks having at least one integral locking lug between two of said downwardly projecting lugs which in plan view extends transversely of one of said openings and is positioned below the top of the last-mentioned plank to obstruct relative longitudinal disengaging movement of the planks by engaging a wall of said last-mentioned opening on such movement.

4. A plurality of metallic planks adapted for rapid attachment and detachment and forming a substantially horizontal portable deck capable of sustaining superposed loads, at least one of each pair of abutting planks having a series of aligned spaced longitudinally extending openings inwardly of an edge thereof, the other plank of each pair being provided along marginal portions thereof with a series of aligned spaced downwardly projecting lugs which align with and extend through the said openings, each of said lugs comprising a shank and an enlarged head portion, said openings being substantially larger than the enlarged head portions of the lugs whereby, upon disposing said lugs in said openings and subjecting the planks to relative longitudinal movement, the enlarged head portions of the said lugs are disposed beneath the bottom of the abutting planks to effect an interlock, the second mentioned of said abutting planks having at least one integral locking lug between two of said downwardly projecting lugs which is, after assembly, adapted to be bent and in plan view extends transversely of one of said openings to obstruct relative longitudinal disengaging movement of the planks by engaging a wall of said last-mentioned opening on such movement, said locking lug normally being bent downwardly below the top of said planks.

5. A plurality of metallic planks adapted for rapid attachment and detachment and forming a substantially horizontal portable deck capable of sustaining superposed loads, at least one of each pair of abutting planks having a series of

aligned spaced longitudinally extending openings inwardly of an edge thereof, the other plank of each pair being provided along marginal portions thereof with a series of aligned spaced downwardly projecting lugs which align with and extend through said openings, each of said lugs comprising a shank and an enlarged head portion, said openings being substantially larger than the enlarged head portions of the lugs whereby, upon disposing said lugs in said openings and subjecting the planks to relative longitudinal movement, the enlarged head portions of the said lugs are disposed beneath the bottom

5 of the abutting plank to effect an interlock, the first mentioned of the said abutting planks having at least one integral locking lug bent downwardly adjacent one of said openings which is, after assembly, adapted to be bent up and in plan view extends transversely of the last-mentioned opening to obstruct relative longitudinal disengaging movement of the planks by engaging a downwardly projecting lug of the other plank on such movement.

CHARLES B. CUSHWA, Jr.
GERALD G. GREULICH.