Feb. 22, 1955 O. F. ARTHUR 2,702,498

WIRE MAT

Filed June 11, 1952 2 Sheets-Sheet 1

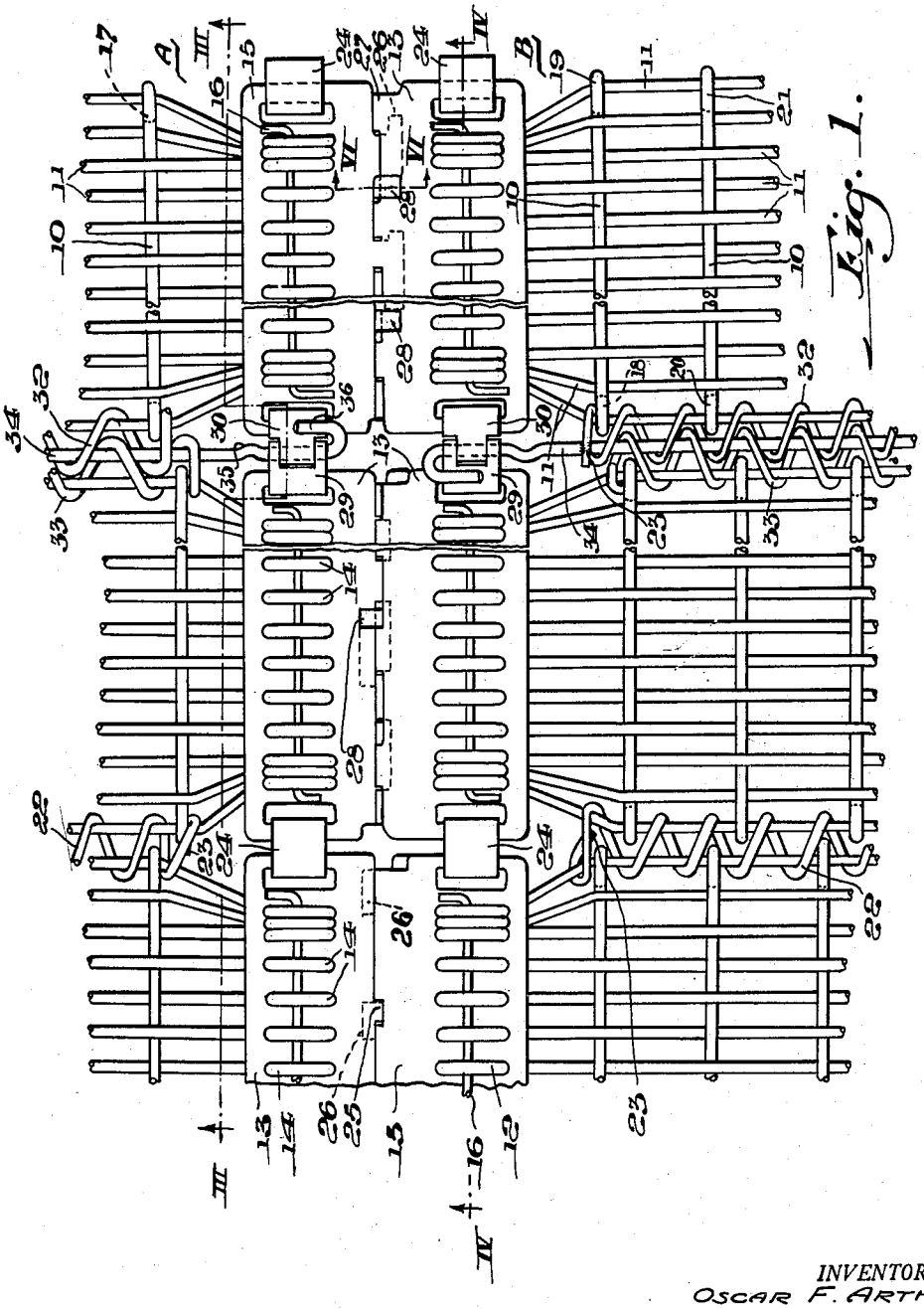


Fig. 1.

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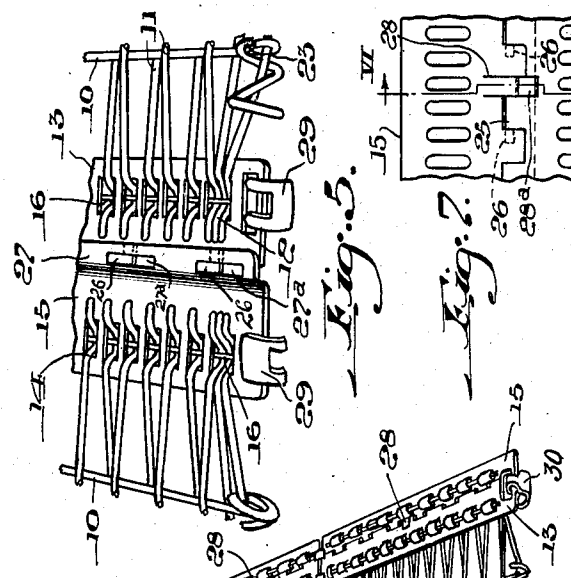


Fig. 5.

Fig. 7.

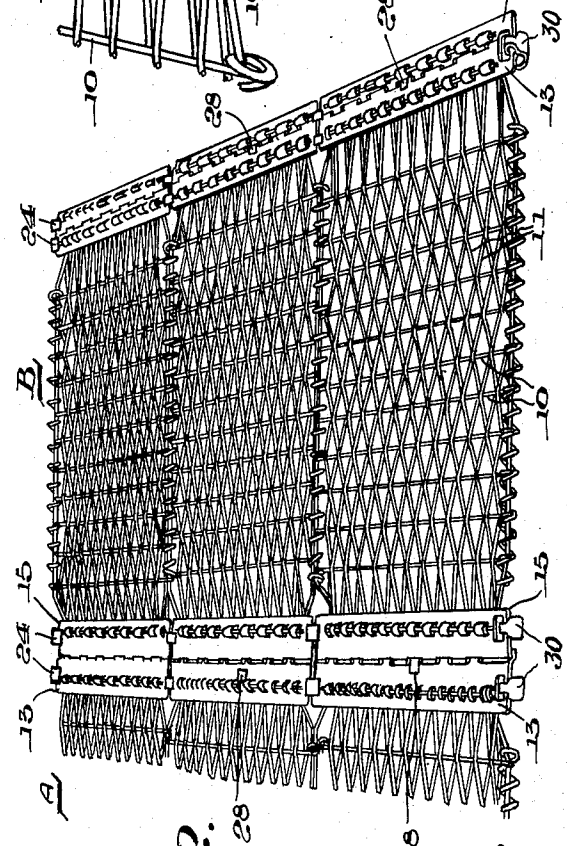


Fig. 2.

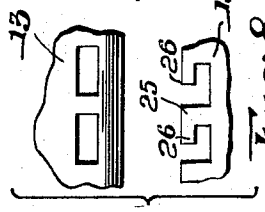


Fig. 8.

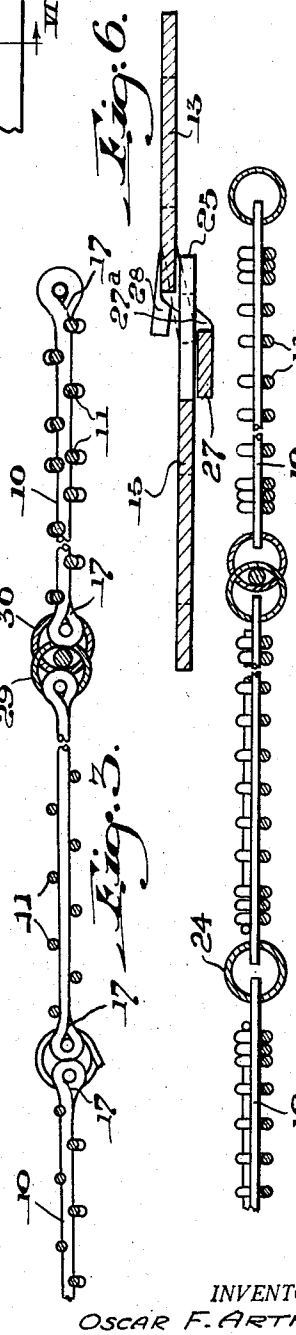


Fig. 3.

Fig. 6.

Fig. 4.

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WIRE MAT

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Application June 11, 1952, Serial No. 293,013

2 Claims. (Cl. 94—13)

My invention relates to mats, and more particularly to mats of wire mesh that are especially suited for use on snow, or on swampy or sandy ground, to thereby provide temporary landing fields for airplanes, truck tracks, beach aprons, hangar floors, and which may also serve as barrier fences, highway guards and bomb shelters.

One object of my invention is to provide a mat of the character referred to that although it is composed mainly of woven wire mesh for lightness, it provides an adequately-even landing surface for the wheels of airplanes or other vehicles, and will withstand the loads and thrusts imposed thereon by bomber planes for example, and which, although made largely of woven wire, has no protruding or snag ends that will damage pneumatic tires.

Another object of my invention is to provide a mat of the character referred to which can quickly be laid in sections of a size suitable for convenient handling, and the sections then connected to form a unitary complete mat structure which has great strength, although made of mesh wires of standard gauges, and which is not subject to any substantial degree of billowing or bulging though made largely of flexible elements.

Still another object of my invention is to provide a mat that comprises panels mainly of mesh wires or the line, which have plates or bars at their edges, with improved means for detachably connecting them together against accidental displacement, to form a multipanel mat, wherein the plates when interconnected can lie in a common plane and have no protruding connecting element at the meeting edges of the plates.

As shown in the accompanying drawings, Figure 1 is a fragmentary enlarged plan view showing the panels of Fig. 2 in assembled relation;

Fig. 2 is a perspective view showing a number of the mat panels in partly assembled relation;

Fig. 3 is a view taken on the line III—III of Fig. 1;

Fig. 4 is a view taken on the line IV—IV of Fig. 1;

Fig. 5 is a bottom view, in perspective, showing the manner in which the mesh wires are connected to the longitudinally-extending plates;

Fig. 6 is an enlarged view taken on the tline VI—VI of Figs. 1 and 7;

Fig. 7 is a plan view of the structure of Fig. 6, and

Fig. 8 is a fragmentary view showing the connecting elements of two adjacent panels in disassembled relation.

The mat is here shown as having a row or longitudinal series of panels A and a second row B, there being, of course, as many rows as may be needed to produce a mat of the desired width.

Each panel is composed of longitudinally-extending wires or rods **10** suitably of five gauge for heavy duty and transversely-extending wires **11** that may be eight-gauge. The wires **10** are preferably straight and the transverse wires **11** arranged in basket weave formation therewith. At their ends, the transverse wires **11** have bends **12** formed therein that extend through slots in plates **13** at one edge of the panel and bends **14** that extend through slots in plate **15** at the other edge of the panel. Retaining rods **16** are inserted between these bends and the upper faces of the plates **13** and **15**, to hold the plates and the mesh in interlocked relation.

The wires **10** and **11** are so interwoven and arranged that the extremities of each wire **10** are bent downwardly and backwardly and may be welded at **17**, so

as to give a smoother upper surface to the panel and avoid injury to tires as would happen if some of the wires were bent upwardly and backwardly and some welds should become broken and allow the jagged ends to protrude upwardly. To this end, some of the wires **10** extend over two transverse wires **11** at one end of the panel, as indicated at **18**, and at the other end, overlie only one wire **11** at **19**, as shown in Fig. 1. The next adjacent wires **10** are reversely arranged in this respect, in that they will overlie only one end wire **11** in one instance and two end wires **11** in the other instance, as shown at **20** and **21**. This sequence is followed across the entire width of the panel.

The panels of each row are arranged in groups that are hingedly connected by helical wires **22** which are turned into place to engage the endmost wires of adjacent panels, by a cork-screw action, thereby not only permitting these panels to flex to the contour of the ground, but also permitting folding thereof for convenient transportation. The extremities of the wires **22** are bent back and welded at **23**, thus preventing unraveling and consequent ragged projections on the mat. Any suitable number of panels will be used in each of these sections, depending upon facilities for handling.

The panels of each section are somewhat permanently connected together by sleeves **24** that extend through slots in the ends of the plates **13** and **15** respectively, and are bent to shape and may also be welded at their seams.

The plates **13** have downwardly-bent flanges **27** with slots **27***a* therein for receiving lips **25** on the plates **15**, that have tongues at their free edges for interlocking engagement with the slots.

In assembling the sections A and B in edge-to-edge relation, the panels of the sections will be slid towards one another so that the lips **25** and their tongues **26** can be pushed through the slots **27***a* and the panels then shifted slightly to engage the hooks **26** behind the flanges of the plates **13**, at the ends of the slots.

When the tongues **26** have been slid into interlocking relation with the slotted plates **13**, as shown in Figs. 6 and 7, lips **28** that are struck up or punched from the plates **13** are bent downwardly from full line position of Fig. 6 to the dotted line position therein, so that they will lie behind the lips **25** and thereby hold the sections A and B against accidental displacement. There are clear spaces **28***a* at the free ends of the lips **28** that will leave room for the insertion of a tool by which the tongue can be bent back to its full line position, if it is desired to disassemble the mats at longitudinal lines of division.

In order to connect the sections forming the mat strip A together and to likewise connect together the sections forming the mat strip B, I provide slotted rings **29** at one end of each of the plates **13** and **15** and mating rings **30** at the other end of such plates, so that the rings can interfit with one another as shown near the middle of Fig. 1.

Also, spiral wires **32** and **33** are interengaged with the endmost wires of each panel section. These helical coils **32** and **33** are brought into partly overlapped or interfitting relation, so that they can be held connected by rods **34** that are slid through the coils and also through the knuckles **29** and **30** to connect the plates together.

The rods **34** have humps **35** near their bent ends as shown in Fig. 1, that will reduce danger of accidental displacement. The hooks **36** on one end of the rods can be used as handles for convenient manipulation thereof and also the hook on one rod can be used to pull other rods out when disassembling the panels. Also, the opposite ends of the rods can be of somewhat wedge shape to facilitate their use as tools, in bending the lips **28** from their dotted line position as shown in Fig. 6, to their full line or open positions.

I claim as my invention:

1. A field mat panel of the reticular type, comprising a sheet of reticulated material, end plates connected to opposite edges of the sheet, one of the plates having a free edge bent downwardly in an inclined plane and slotted, and the other plate having lips provided with longitudinally-extending tongues on their outer edges, the tongues being insertible into the slots of a plate on an adjacent sheet, the lips being of narrow width relative

to the lengths of the slots, and the panels being relatively shiftable to effect hooked engagement of their plates, and tongues integral with the slotted plate, in position to be bent into abutting engagement with those edges of certain of the lips which are remote from their tongues.

2. A field mat panel of the reticular type, comprising a sheet of recticulated material, end plates connected to opposite edges of the sheet, one of the plates having a free edge bent downwardly in an inclined plane and slotted, and the other plate having lips provided with longitudinally-extending tongues on their outer edges, the tongues being insertable into the slots of a plate on an adjacent sheet, the lips being of narrow width relative to the lengths of the slots, and the panels being relatively shiftable to effect hooked engagement of their plates, and tongues integral with one of said plates, in position to be bent into certain of the slot areas, at points behind

the lips when the panels have been shifted into hooked engagement.

References Cited in the file of this patent

UNITED STATES PATENTS

1,159,657	Dickinson	Nov. 9, 1915
1,269,268	Ervin	June 11, 1918
1,772,821	Weber	Aug. 12, 1930
2,294,549	Greulich	Sept. 1, 1942
2,315,180	Arthur	Mar. 30, 1943
2,323,272	Barry	June 29, 1943
2,338,785	Sommerfeld	Jan. 11, 1944
2,361,163	Arthur	Oct. 24, 1944
2,361,164	Arthur	Oct. 24, 1944
2,599,634	Holmes	June 10, 1952
2,645,167	Zeidler	July 14, 1953