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Mar. 20, 1923. 1,448,907

W. T. BELL

LINK MAT

Filed Mar. 25, 1922

Fig. 1.

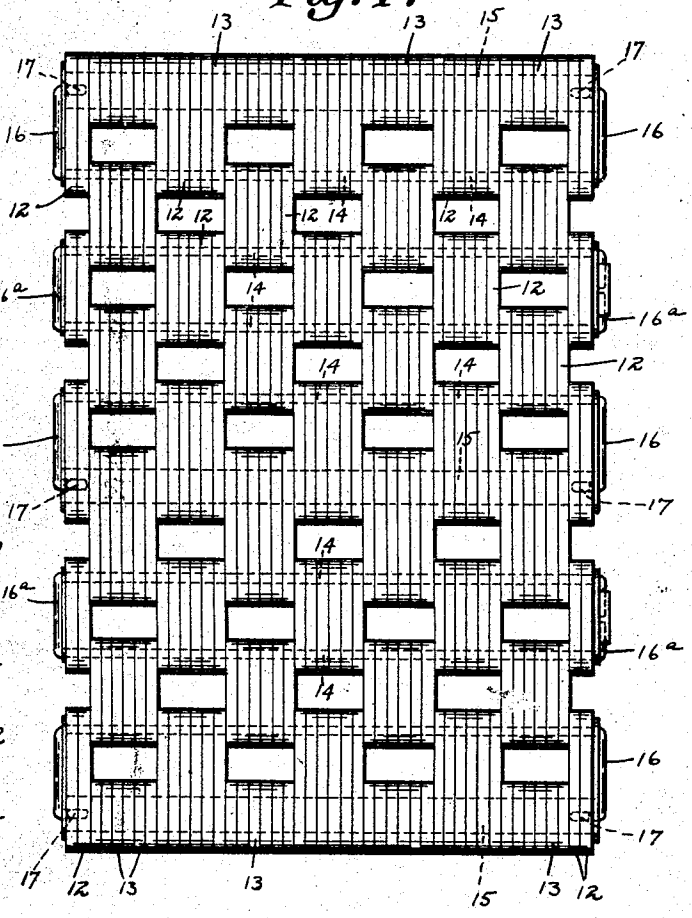


Fig. 5.

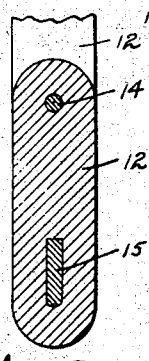


Fig. 8.

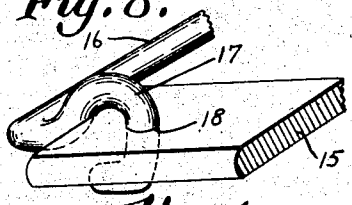


Fig. 4.

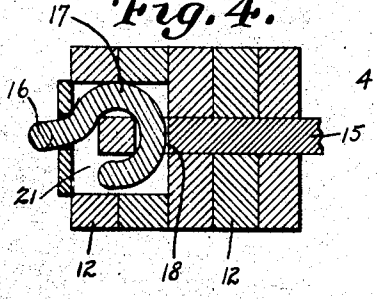


Fig. 2.

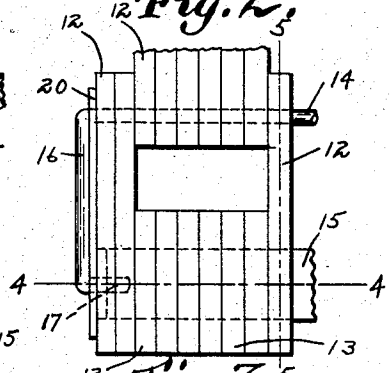


Fig. 3.

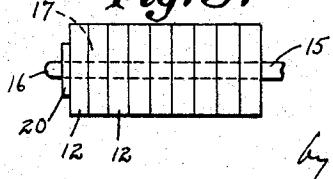
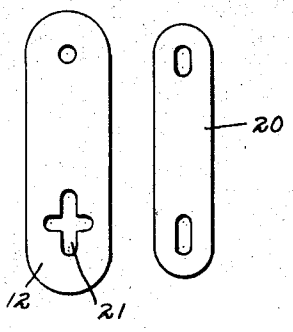


Fig. 6. Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM T. BELL, OF CONCORD, NEW HAMPSHIRE.

LINK MAT.

Application filed March 25, 1922. Serial No. 546,648.

To all whom it may concern:

Be it known that I, WILLIAM T. BELL, a citizen of the United States, residing at Concord, in the county of Merrimack and State of New Hampshire, have invented new and useful Improvements in Link Mats, of which the following is a specification.

This invention relates to a mat comprising separate links, usually of leather, extending lengthwise of the mat, and transverse tie-rods on which the links are strung.

The object of the invention is to provide simple and effective means for transversely stiffening the mat, particularly at its end portions, and to provide a mat having transversely stiffened portions which have no openings for the admission of dirt, water, etc.

The invention is embodied in the improvements hereinafter described and claimed.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a side view of a mat in which my improvements are embodied.

Figure 2 is an enlargement of a portion of Figure 1.

Figure 3 is an end view of the portion shown by Figure 2.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a section on line 5—5 of Figure 2.

Figure 6 is a side view of one of the slotted links.

Figure 7 is a side view of one of the reinforcing plates.

Figure 8 is a fragmentary perspective view, showing portions of one of the flat-sided tie-rods, and of one of the cylindrical tie-rods, hereinafter described.

The same reference characters indicate the same parts in all of the figures.

The entire body of the mat, excepting portions of its opposite ends, is composed of oblong links 12, preferably made of sole leather, although other materials may be used. The links are arranged in transverse rows of groups, the groups of each row alternating and overlapping the groups of the next row, as shown by Figure 1. The opposite ends of the mat, include, in addition to the end groups of links 12, intermediate spacing pieces or washers 13, of the same material as the links and forming, with the latter, continuous transverse terminal edges or ends. The described arrangement of links and spacing pieces or washers is well known, and is not claimed by me.

The links are perforated and strung, as usual, on transverse metal tie-rods, which are connected in pairs at the opposite longitudinal edges of the mat, in such manner that the links are confined on the tie-rods. Usually in mats of this character, each of the tie-rods of each pair has been formed as a pintle, and the links have been adapted to have pivotal movement on each of the tie-rods of the mat. A pintle on which links may turn is necessarily made of cylindrical wire. It is well known that an elongated cylindrical wire rod when casually bent from a straight form, cannot be easily straightened. The tie-rods nearest the ends of the mat are particularly liable to be bent, and unless straightened, prevent the mat ends from lying smoothly on a floor. When these tie-rods are made of cylindrical wire, as heretofore, it is difficult to straighten out a mat that has been casually bent at its ends.

In carrying out my invention, I substitute flat-sided tie-rods of oblong form in cross section, for the two cylindrical wire tie-rods or pintles heretofore located at the opposite end portions of the mat, the flat sides of these rods being parallel with the sides of the mat. The oblong cross section renders the flat-sided rods practically inflexible edgewise, and enables the rods to be readily straightened to eradicate casual bends curving of the flat sides. One or more of these flat-sided tie-rods or stiffeners may be substituted for one or more cylindrical wire tie-rods or pintles between the ends of the mat. The cylindrical wire tie-rods or pintles are designated by 14, and the flat-sided tie-rods or stiffeners are designated by 15, and are composed of strips of any suitable metal. Each tie-rod 15 is interlocked with the adjacent tie-rod 14, by means of confining arms 16, formed on the rod 14 and provided with inwardly projecting hooks 17, engaged with orifices 18 in the ends of the rods 15. The wire of which the rods 14 is made, is sufficiently flexible to enable the hooks to be formed and engaged with the orifices 18, during the operation of assembling the parts.

As shown by Figure 1, the tie-rods forming the opposite ends of the series of rods are flat-sided rods 15, and there may be one additional rod 15, or more, between the ends

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of the mat. All the other tie-rods are cylindrical rods 14, and are connected in pairs by confining arms 16^a as usual.

Reinforcing plates or links 20 are provided, as heretofore, the rods 14 passing through orifices in said plates. Some of the links 12 are provided with slots 21, formed to receive the inwardly projecting hooks, as shown by Figure 4.

The thickness of the flat-sided tie-rods 15 is preferably equal to the diameter of the wire forming the rods 14. The width of the rods 15 is, of course, considerably greater than said diameter. The rods 15 are, therefore, adapted to enter oblong slots formed for their reception in the links connected thereby, without occupying more of the width of the links than is occupied by the rods 14. The stiffening effect is due to the oblong cross section of said rods, and the rods 15 are enabled by their form and arrangement to prevent accidental bending of the portions of the mat with which they are engaged, except under unusual conditions. Should a rod 15 be casually bent, the mat is warped sidewise only, and can be readily straightened by sidewise pressure while it is lying on a floor. In fact, the warping of the mat in any direction permitted by the bending of the rods 15, may usually be eradicated without any special operation, by the weight of persons walking on the mat.

It will be seen that the invention includes as an essential part of the structure of a link mat, two tie-rods 14 and 15, constituting a pair, and connected by arms forming bent and hooked extensions of the tie-rods 14. By thus connecting two tie-rods of a pair, I am enabled to form one of the rods as a flat-sided stiffening rod, and the other as a cylindrical wire pintle, so that one tie-rod serves also as a hinge member, and the other tie-rod serves also as a stiffening member having the characteristics as above stated. I am also enabled to securely connect the tie-rods 15 at the ends of the mat with the adjacent tie-rods 14, in such manner that there is no liability of separation of said rods at the corners of the mat. The rods 15 are entirely encased in members forming the body of the mat, so that, they are not exposed at intervals by openings in the body of the mat formed to receive mud and other foreign matter.

I claim:

1. A link mat comprising links arranged in overlapping groups, and transverse tie-rods on which said links are strung, some of said tie-rods being cylindrical to form pintles, permitting pivotal movement of the links connected thereby, and provided at their ends with confining arms, the other tie-rods, including those nearest the opposite ends of the mat, being oblong in cross section, to form stiffeners, and presenting flat sides substantially parallel with the sides of the mat, each flat-sided tie-rod being interlocked with the confining arms on the ends of the adjacent cylindrical rod.

2. A link mat comprising links arranged in overlapping groups, and transverse tie-rods on which said links are strung, some of said tie-rods being cylindrical to form pintles, permitting pivotal movement of the links connected thereby, and provided at their ends with confining arms, the other tie-rods, including those nearest the opposite ends of the mat, being oblong in cross section, to form stiffeners, and presenting flat sides substantially parallel with the sides of the mat, each flat-sided tie-rod having apertured ends, and the confining arms of the adjacent cylindrical rod being bent to form hooks engaged with the apertures in the flat sided rod.

3. A link mat including links arranged in overlapping groups, and a pair of connected parallel transverse tie-rods, on which some of the links are strung, said tie-rods being characterized by the fact that one is a pintle having connecting arms at its ends provided with inwardly projecting hooks, while the other or companion rod is a stiffener of oblong cross section, presenting flat sides which are substantially parallel with the sides of the mat, and provided in its end portions with orifices with which said hooks are engaged.

In testimony whereof I have affixed my signature.

WILLIAM T. BELL.