

O. V. KEAN.
MOLD CONSTRUCTION.
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1,056,999.

Patented Mar. 25, 1913.

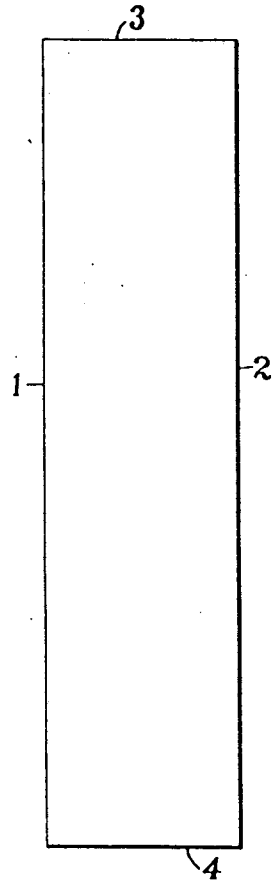


Fig. 1.

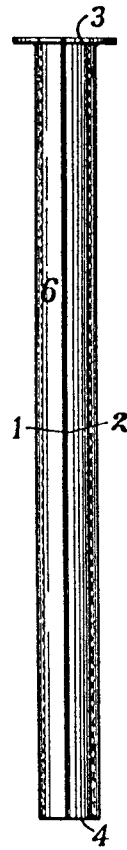


Fig. 3.

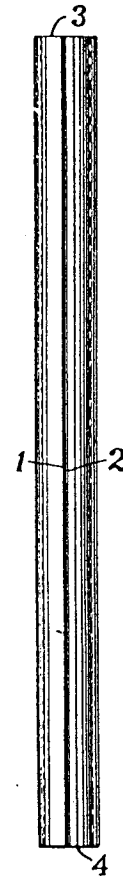


Fig. 2.

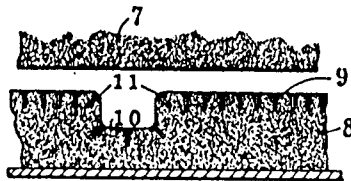


Fig. 5.

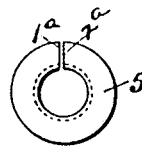


Fig. 4.

WITNESSES:

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MOLD CONSTRUCTION

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To all whom it may concern:

Be it known that I, OTHO V. KEAN, a citizen of the United States, residing at Toronto, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Mold Construction, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a nail structure and with respect to certain more specific features, to a structure of this type which may be used in founding.

One of the objects of the invention is to provide a practicable and efficient article of this type which may be manufactured quickly and cheaply.

Another object is to provide a durable article of the type described with a minimum use of metal.

Another object is to provide an article of the type described which may be manufactured in large quantities by simple and comparatively inexpensive machinery.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the drawings wherein is shown one of the various possible embodiments of the invention, Figure 1 represents a blank from which the finished article may be made; Fig. 2 represents the partially completed article; Fig. 3 represents the completed article; Fig. 4 is a plan view looking from above in Fig. 3; and Fig. 5 is a cross sectional view showing the device applied to a molding surface.

In Fig. 1 of the drawing is shown a blank of thin sheet metal which may be of any desired composition, for example cheap tin plate, or the like, from which the nail structure is to be made. This blank is preferably in the form of a rectangular oblong thin strip having oppositely disposed longitudinal edges 1 and 2 and oppositely disposed ends 3 and 4.

In manufacturing the nail structure, the blank may be formed into any desired shape.

As shown in Fig. 2 it is preferably rolled into a substantially cylindrical tubular form with the longitudinal edges 1 and 2 adjacent one another and spaced a short distance apart. These edges may be brought into any desired degree of proximity. After rolling or bending the thin sheet into the cylindrical form, as shown in Fig. 2, a head portion may be made upon the end of the cylinder by spreading, bending or crimping the metal, thus forming an integral surface or head 5, at substantially right angles to the remainder of the cylinder which constitutes the hollow body portion 6, as shown in Fig. 3. After bending or otherwise disposing the end 3 of the blank at right angles to the body portion, this head may be conveniently shaped into substantially annular form as shown in Fig. 4 by placing the surface 5 in a die and preferably bringing the edges 1^a and 2^a, which are continuations of the edges 1 and 2 of the body portion, into any desired degree of proximity.

As heretofore indicated the nail structure described is particularly adapted for foundry work and is shown in Fig. 5 as there employed. 7 designates a core which is adapted to be held in position within the mold and spaced from the sand 8. The sand as shown is so shaped that it provides a flat molding surface 9, along which the metal is adapted to flow, and a depressed surface 10 providing corners 11. The nails as shown are adapted to be placed with their heads 5 outermost along the flat surface 9. They are also shown in the depressed portion 10 and at the corners or fillets 11. When the nails are thus placed they are adapted to substantially prevent the dislodgment of portions of the sand when hot metal flows thereover and are thus adapted to preserve the shape of the mold.

It will be noted in connection with the nail structure as here disclosed, that it may be inserted readily in the sand with little danger of breaking the surface thereof. This is a decided advantage over a solid nail structure which, through wedging action, might tend to injure the surface upon being pushed thereinto. It will further be noted that the body of the nail is constructed to provide a large area of metal surface in contact with the sand and in view of this is adapted to readily hold the shape of the latter.

It will be understood that the term "sand" is used broadly throughout this description and the following claims to denote any loose material adapted for use in forming a mold.

5 It will also be understood that the term "hollow" is used throughout in a broad sense as denoting merely that the article so qualified is not solid but is so shaped as to extend about, or partially about, the matter in which it is inserted.

10 The nails made according to the above are durable, are cheap to manufacture and serve their purpose admirably. The nails may be made with great rapidity by inexpensive machinery and it has been found in actual practice in making nails of this type that the metal is far more economically used than in the case of wire nails. It will thus be seen that the invention here shown
20 accomplishes, among others, the objects above enumerated.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a
25 limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

40 1. A hollow mold nail having a transversely curved body and a flat head formed to lie in a plane substantially at right angles to said body.

2. A mold nail having a transversely curved body of substantially uniform cross-section throughout its length and a flat head

formed to lie in a plane substantially at right angles to said body.

3. A hollow mold nail formed entirely of sheet metal having a transversely curved body and a head lying substantially at right angles thereto.

4. A mold nail having a body of sheet metal in substantially tubular formation and having an integral flat head formed to lie in a plane at an angle to the axis of the body.

5. The art of making a mold which comprises forming a sheet metal device into a shape having a bend or curve and forcing said device into the sand of the mold in the direction of the axis of said curve.

6. In apparatus of the class described, in combination, a sand mold, and a plurality of sheet metal devices lying within the sand of said mold and substantially normal to its inner surface.

7. In apparatus of the class described, in combination, a sand mold, and a plurality of stiffening devices each provided with a longitudinal recess and lying within the sand of said mold adjacent its inner surface.

8. In apparatus of the class described, in combination, a sand mold, and a plurality of sheet metal devices resting within the sand of said mold substantially normal to its inner surface and each formed to extend about and embrace a portion of the sand.

9. In apparatus of the class described, in combination, a sand mold, and a plurality of sheet metal devices each having a tubular portion resting within and embracing the sand of the mold and having a head portion lying substantially flush with the inner surface of the mold.

In testimony whereof I affix my signature in the presence of two witnesses.

OTHO V. KEAN.

Witnesses:

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M. R. WADDS.