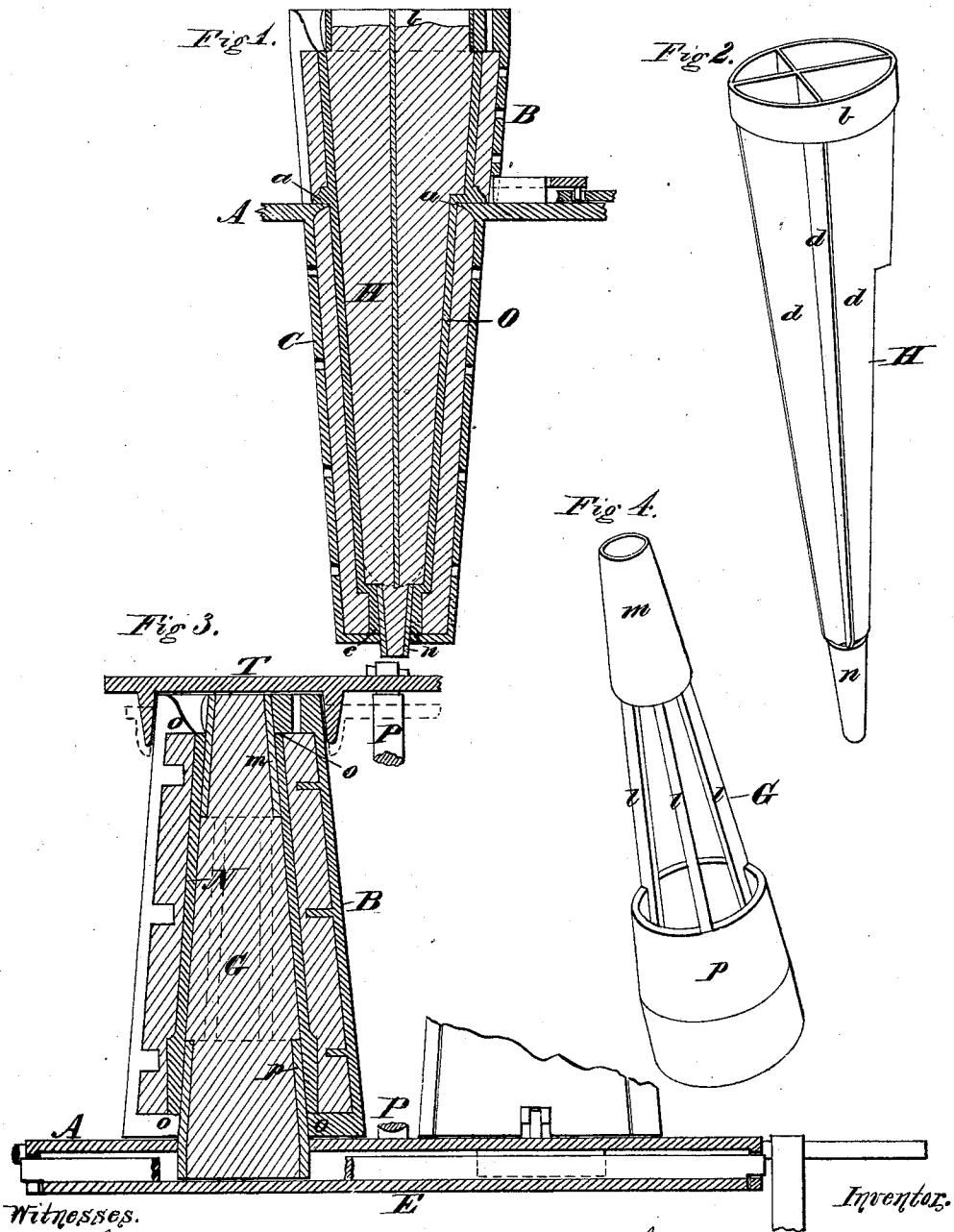


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 Improvement in Skeins and Boxes for Wagons, &c.

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Witnesses.

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JOHN R. DAVIES, OF RACINE, WISCONSIN.

IMPROVEMENT IN SKEINS AND BOXES FOR WAGONS, &c.

Specification forming part of Letters Patent No. 131,213, dated September 10, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, JOHN R. DAVIES, of Racine, in the county of Racine and State of Wisconsin, have invented certain Improvements in Thimble-Skeins and Boxes for Wagons, &c., of which the following is a specification, reference being had to the accompanying drawing.

My invention consists in certain improvements in thimble-skeins and boxes for wagons, and in the apparatus for casting the same, as hereinafter more fully described.

Figure 1 is a longitudinal vertical section of the thimble-skein with the core and mold used in casting the same. Fig. 2 is a view of the metal portion of the core, shown detached. Fig. 3 is a longitudinal section of the box with its core and mold; and Fig. 4 is a view of metal portion of the box-core detached.

The object of my invention is to produce thimble-skeins and boxes having their bearing-points chilled, so as to render them more durable, and to produce them in a more expeditious manner than heretofore. To accomplish this object I use what I term my mechanical mold, which is made of sections, arranged to be opened and closed by means of mechanism, and which, being lined with suitable material having the external form of the article impressed therein, can be used repeatedly and continuously, it only being necessary to close the mold and insert the prepared core when it is ready to receive the metal. These improved molds and cores forming the subject of a separate application, will be described herein only so far as relates to the formation or production of these improved skeins and boxes.

In the production of the skein I construct the mold as represented in Fig. 1, in which A represents the base plate, having the lower part, C, of the mold cast thereon or attached to it. The upper part, B, of the mold is made separately, in sections, divided vertically so that they can be separated to open the mold or brought together to close it. It will be observed that the base plate projects inside of the mold at the point where the shoulder is to be formed on the skein, so that, when the metal is poured to form the skein O, this shoulder *a* will be chilled by coming in contact with this inwardly-projecting part of the plate A.

At its lower end the mold is provided with a central hole to receive the extremity or end of the core, so as to center it and hold it in place. The core for this skein is shown in Fig. 2; and it consists of a metal body composed of four thin plates or flanges united along their inner and vertical edges with a band, *b*, encircling their upper end, and a metal tube, *n*, secured at their lower end, as shown. This metallic skeleton-core is to be filled out to the proper shape externally by applying thereto any suitable material, so that, when set into the mold, as shown in Fig. 1, and the mold closed around it, the skein is formed by pouring in the molten metal in the usual manner.

By constructing the core with the tube *n* at the lower end and the band *b* at the top the steam or gases formed in the mold have ready exit, and thereby a perfect casting is insured. The base plate A is to be provided with trunnions, upon which it can be hung in a suitable frame, so that as soon as the casting is formed the whole can be inverted, when, by opening the part B of the mold, the skein with its core drops out. The mold is then turned right side up, the core inserted, and the part B closed, when it is again ready for repeating the operation.

In casting the box N I use the sectional mold B, located entirely above the base plate, as represented in Fig. 3. In this case it is desirable to chill both ends of the box, and also its interior for some distance from each end. To accomplish the first I construct the mold with an inwardly-projecting flange, *o*, at both top and bottom, against which the molten metal rests when poured, as shown in Fig. 3. To chill the interior I construct a core-frame, G, as represented in Fig. 4, with an iron tube, *m*, at its smaller or upper end, and a similar tube, *p*, at its lower end, these chills or tubes *m* and *p* being connected with three or more bars, *l*. This core, like the other, is filled up, and made of the required form by any suitable material, the chills *m* and *p* being arranged to occupy so much of the interior of the box as it is desired to chill. In this case the core rests upon a plate, E, secured below the base plate A in such a manner that it can be readily released or detached, thereby letting the core G drop out, after which the mold is opened and the box removed. By this means I avoid the

necessity of inverting the mold, as in the other case.

It is, however, obvious that the mold for casting the box N may, if preferred, be secured to the under side of the base plate A the same as the part C of the mold for the skein, and the whole be mounted to turn over, as before described.

In all cases a top plate or frame, T, is used to fit over the sectional part of the molds and clamp them firmly together, and which, being secured to the base plate by a rod, P, as represented in Fig. 3, serves also to secure the molds to the base plate.

It is obvious that cores provided with tubes at their ends for the escape of the gases are applicable to other castings as well as those herein described.

It will be seen that by this method of casting the skein its shoulder *a* is chilled, its external bearing-surface being also chilled in the usual manner, which latter being common is not herein described; also, that the box is

chilled on both its ends, and internally near each end where it has its bearing on the skein; and thus I am able to produce a box and skein superior to any heretofore made of cast metal, and to do it in a very cheap and expeditious manner.

Having thus described my invention, what I claim is—

1. The skein O having its shoulder *a* chilled, substantially as described.

2. The box N having its internal surface and its ends chilled, substantially as described.

3. The core-frame H, provided with the tube *n*, substantially as and for the purpose set forth.

4. The core-frame G, consisting of the tubular chills *m* and *p* connected by one or more bars, *l*, substantially as and for the purpose set forth.

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Witnesses:

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