No. 695,846. Patented Mar. 18, 1902.

I. VAN HAGEN.

MANUFACTURE OF METALLIC BEDSTEADS.

(Application filed Dec. 24, 1897.)

(No Model.)

Fig. 1.

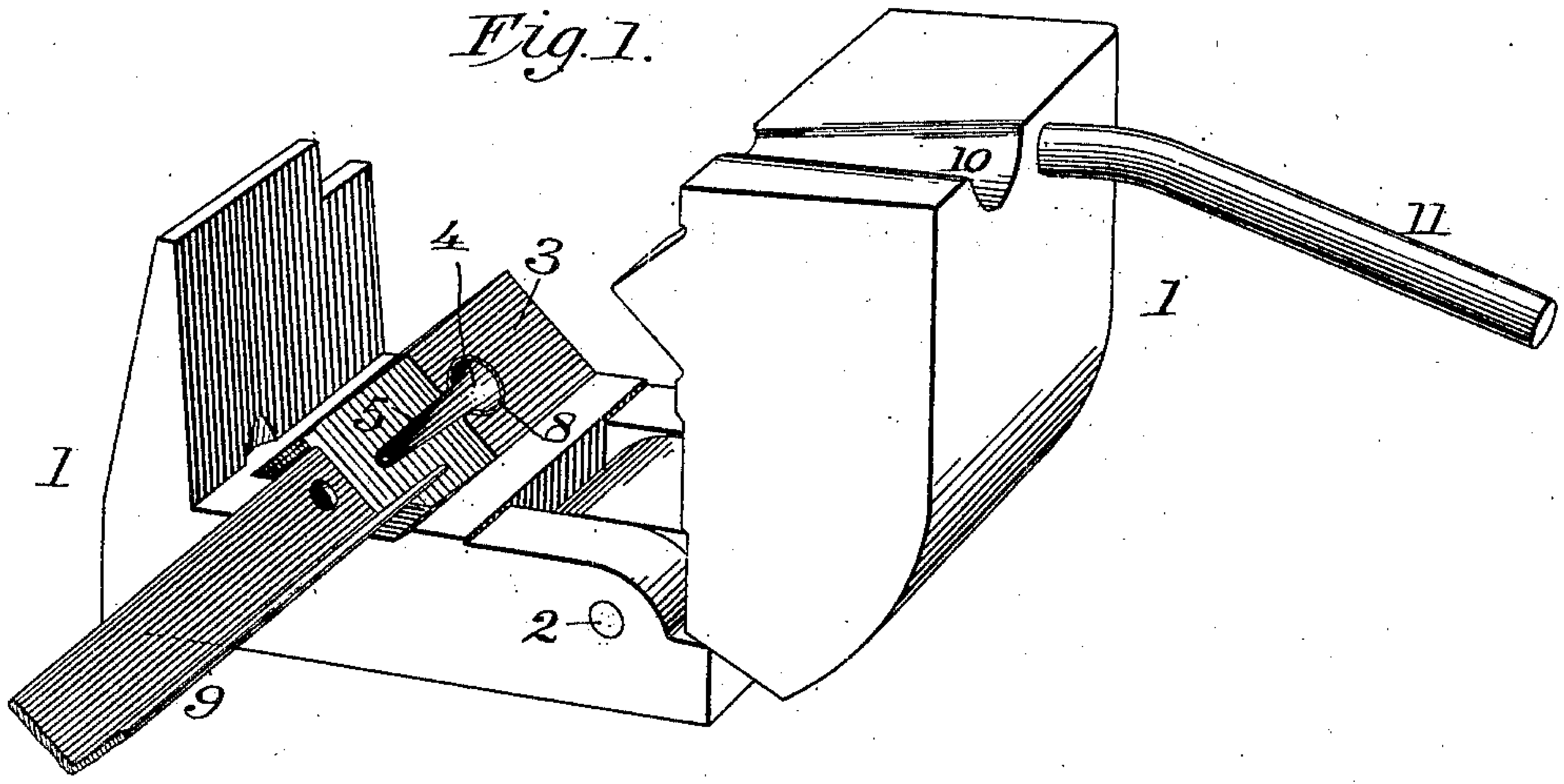


Fig. 2.

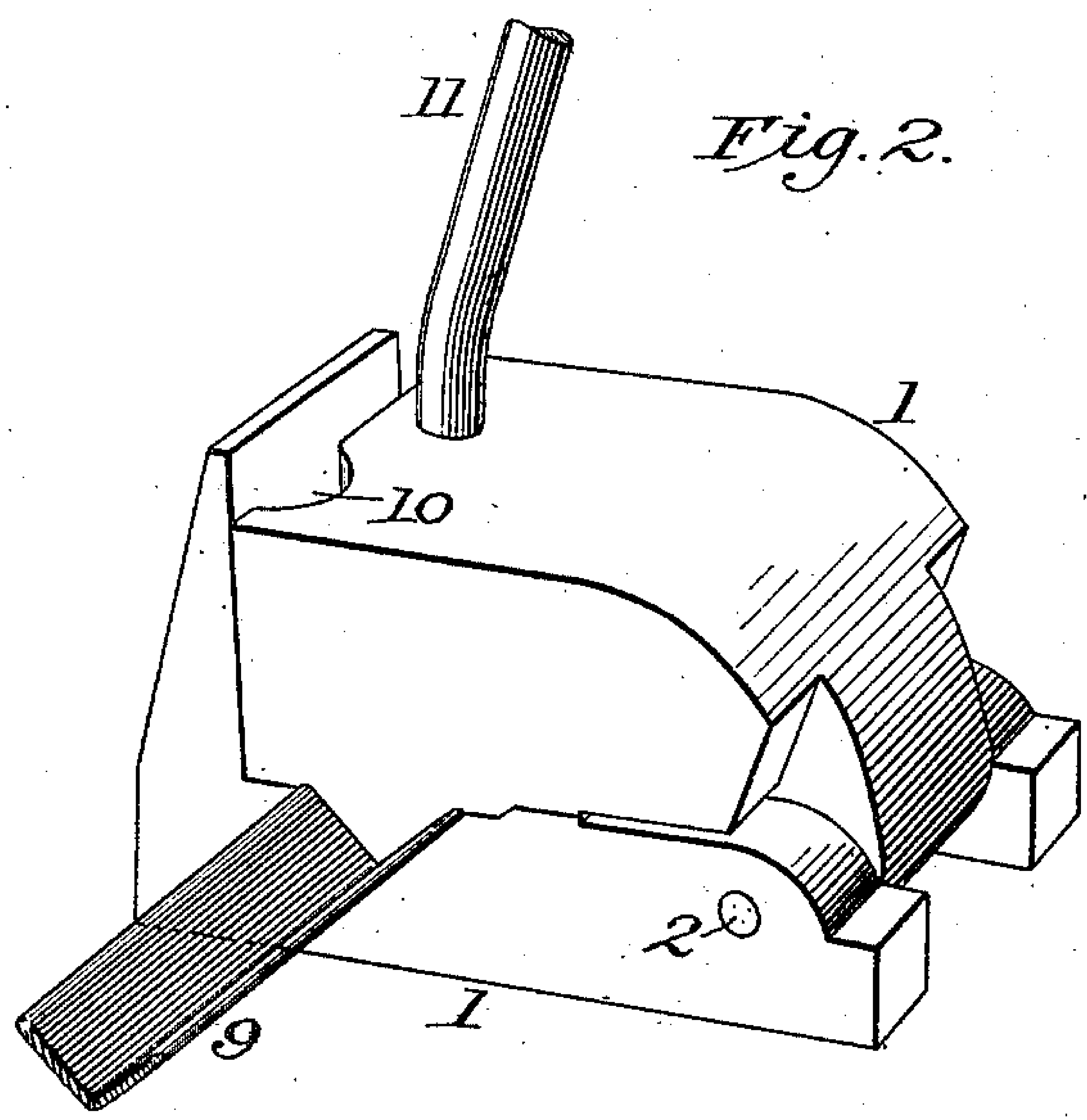


Fig. 4.

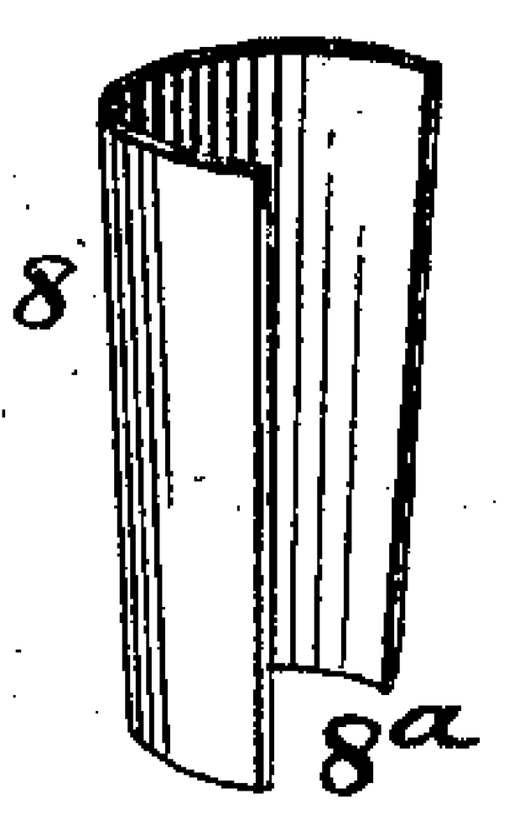
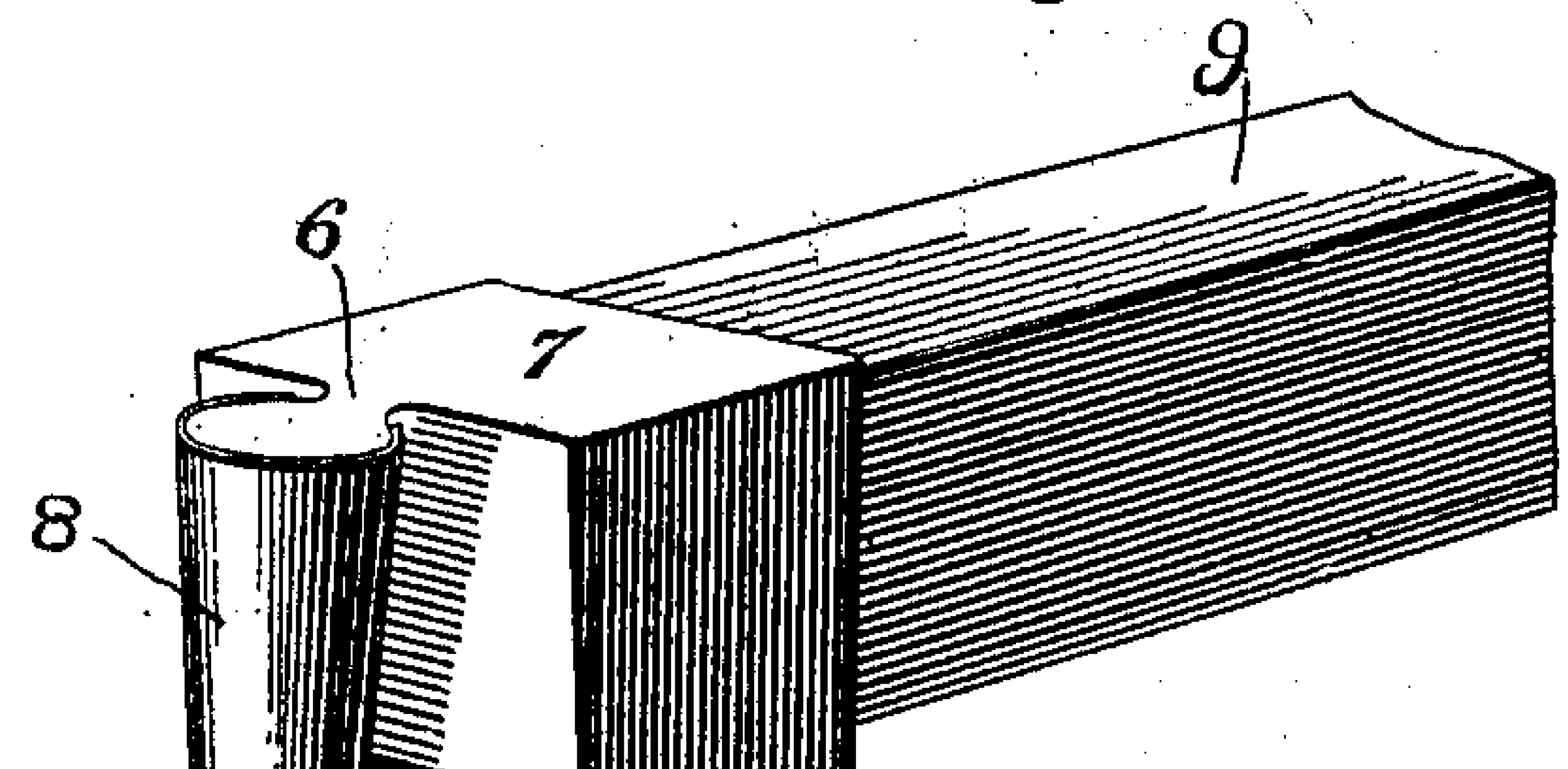


Fig. 3.



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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF METALLIC BEDSTEADS.

SPECIFICATION forming part of Letters Patent No. 695,846, dated March 18, 1902.

Application filed December 24, 1897. Serial No. 663,415. (No model.)

To all whom it may concern:

Be it known that I, ISAAC VAN HAGEN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in the Manufacture of Metallic Bedsteads, of which the following is a specification, reference being had to the accompanying drawings and to the numerals of reference marked thereon.

In the construction of cast-frame iron bedsteads one of the most important requirements is a properly-fitted connection of the side rails with the head and foot sections. These sections are cast in chills, and in this class of manufacture it has been found that in the pouring of the molten iron into the chill the interior surface of the latter (the chill being cast in a sand mold and comparatively soft) will be almost imperceptibly worn or cut away through friction and the intense heat of the metal and that the chill will soon be destroyed. The result is that where in such a chill or mold a pin is formed as a part of a joint—as, for instance, that at the connection of a bedstead-rail with the head or foot section—the pin portion of the joint is slightly bulged or made convex, so that it will not readily fit the socket portion of the joint, the chill being so cut or worn away by repeated molding operations that the pin cast therein is distorted or enlarged. It has also been found that where the pin portion of such a joint has been cast in the ordinary chill or mold the outer surface of the pin is so hard that it cannot be filed, and the construction is generally such that grinding is impracticable. The consequence has been that heretofore it has often been impossible to fit the pin to its socket.

Under my invention the chill or mold is protected against the friction and wear due to the inflow of the molten metal by placing in the chill for each molding operation a thin sheet of metal, as ordinary tin-plate, and which when the molten metal is poured fuses and becomes a part of the pin. At the same time by the fusing of the thin sheet of metal with the pin portion of the joint the exterior of the pin is rendered so soft that it may be readily filed and neatly fitted to the socket portion of the joint.

In the fuller description of my invention which follows reference is made to the accompanying drawings, which sufficiently illustrate the carrying out of my improvements in the manufacture of metallic bedsteads.

Figure 1 is a view in perspective of a hinged mold containing a chill in which is formed the pin portion of a bedstead-rail joint, the end of the rail being shown in position to have the molten iron poured around it. Fig. 2 is a perspective view showing the mold closed. Fig. 3 is a view of the cast-pin portion of the joint. Fig. 4 shows a detail.

Similar numerals of reference indicate similar parts in the respective figures.

1 represents a mold formed in two parts and hinged at 2. The interior formation of the mold is such as to enable the proper distribution of the metal poured therein and to receive the chill 3. The chill, as here shown, is provided with a tapering hole 4 of the shape necessary to produce the proper formation of the pin. The front of the tapering hole 4 in the chill 3 is open, as shown at 5, so as to permit the entrance of the molten metal and also to allow of the formation of the neck portion 6 between the pin proper and the connecting part 7 of the joint. Within the tapering hole 4 is loosely placed a metallic sleeve 8, (shown detached in Fig. 4,) which sleeve is provided at its front with an opening 8^a corresponding with that 5 of the chill 3.

9 represents the side rail of a bedstead, which before the beginning of the molding operation has one of its ends placed in the hinged mold, as shown in Fig. 1, its outer end bearing the proper relation to the adjacent side of the chill 3. The rail 9, the chill 3, and the metallic sleeve 8 being thus placed in position in the hinged mold, the latter is closed, as shown in Fig. 2, when the molten metal is poured through the mouth 10 of the mold. The molten metal entering the tapering hole of the chill 4 through the opening 5 thereof and the opening 8^a of the sleeve reaches the interior of the sleeve, rapidly fusing said sleeve and causing it to unite with the molten metal, the result being that when the pin portion of the joint is cast the metal which formed the sleeve constitutes a part thereof, or, in other words, its outer surface.

It will thus be seen that not only is the interior of the chill protected from the friction

and intense heat of molten metal, and thus guarded against deterioration due thereto, but that the hardening of the outer surface of the pin is prevented by the fusing and incorporation therewith of a body of soft metal.

The casting operation as above described having been completed, the hinged mold is opened by means of the handle 11 and the casting removed, and, as hereinbefore stated, no damage will be produced upon the chill by repeated inpourings of molten iron, and at the same time by renewing the metallic sleeves a soft exterior surface will be given to each pin portion of each joint so cast, whereby it may be readily filed, if necessary, to insure an accurate fit in the socket portion of the joint.

It is obvious that the conditions hereinabove described may be changed and the invention applied to the formation of the socket portion of the joint instead of the pin portion thereof by placing around the chill adapted to form the socket a similar metallic sleeve to protect the outer surface of said chill, which sleeve will in the act of molding fuse and unite with the socket portion of the joint. This is especially valuable in view of the fact that it is practicably impossible to file the interior surface of the socket portion of the joint, and as by the protection afforded to the chill forming the socket the shape of the socket may at all times be maintained, so that an accurate fit between it and the pin portion will be insured.

I am aware that heretofore in the use of sand molds a thin body of metal has been applied to the surface of the mold and which has been united with the metal cast in the mold; but such usage is not in accordance with my invention, which does not contemplate the employment of a sand mold which is destroyed immediately after the casting operation, but a chill which is used repeatedly in the duplication of castings. In the art to which my invention is specially applied and in other arts to which it is equally well adapted the use of sand molds would be impracticable, and while I make no claim to the incorporation of a fusible or fused body with the casting itself, that being old in the art, I claim to have been the first to devise means whereby a chill-mold used in casting can be protected and continuously used without destructive effect thereupon.

Having described my invention, I claim—

1. The method herein described of constructing a section of the joint of a metallic bedstead, the same consisting in placing within the chill-mold that part of the bedstead on which a joint is to be formed, also placing within the mold, and in contact with the inner face thereof, a fusible lining or sleeve, pouring molten metal into the said chill-mold and sleeve and thereby uniting, under the heat of the poured metal, the said fusible lining or sleeve with the section of the joint, thus giving a soft outer surface to the latter, substantially as and for the purpose set forth.

2. The herein-described method of forming on a rod or tube one part of a separable joint, the same consisting in placing within a chill-mold such portion of the rod or tube on which the joint is to be formed, also placing within the mold, and in contact with the inner face thereof, a fusible lining or sleeve, and lastly pouring molten metal into the said chill-mold around the rod or tube and within or about said lining or sleeve, whereby the part of the lining or sleeve in contact with the molten metal is partly fused and unites therewith on cooling, thus giving a comparatively soft outer surface to the connecting portion of the joint, substantially as set forth.

In testimony whereof I hereunto set my hand this 15th day of December, 1897.

ISAAC VAN HAGEN.

Witnesses:
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