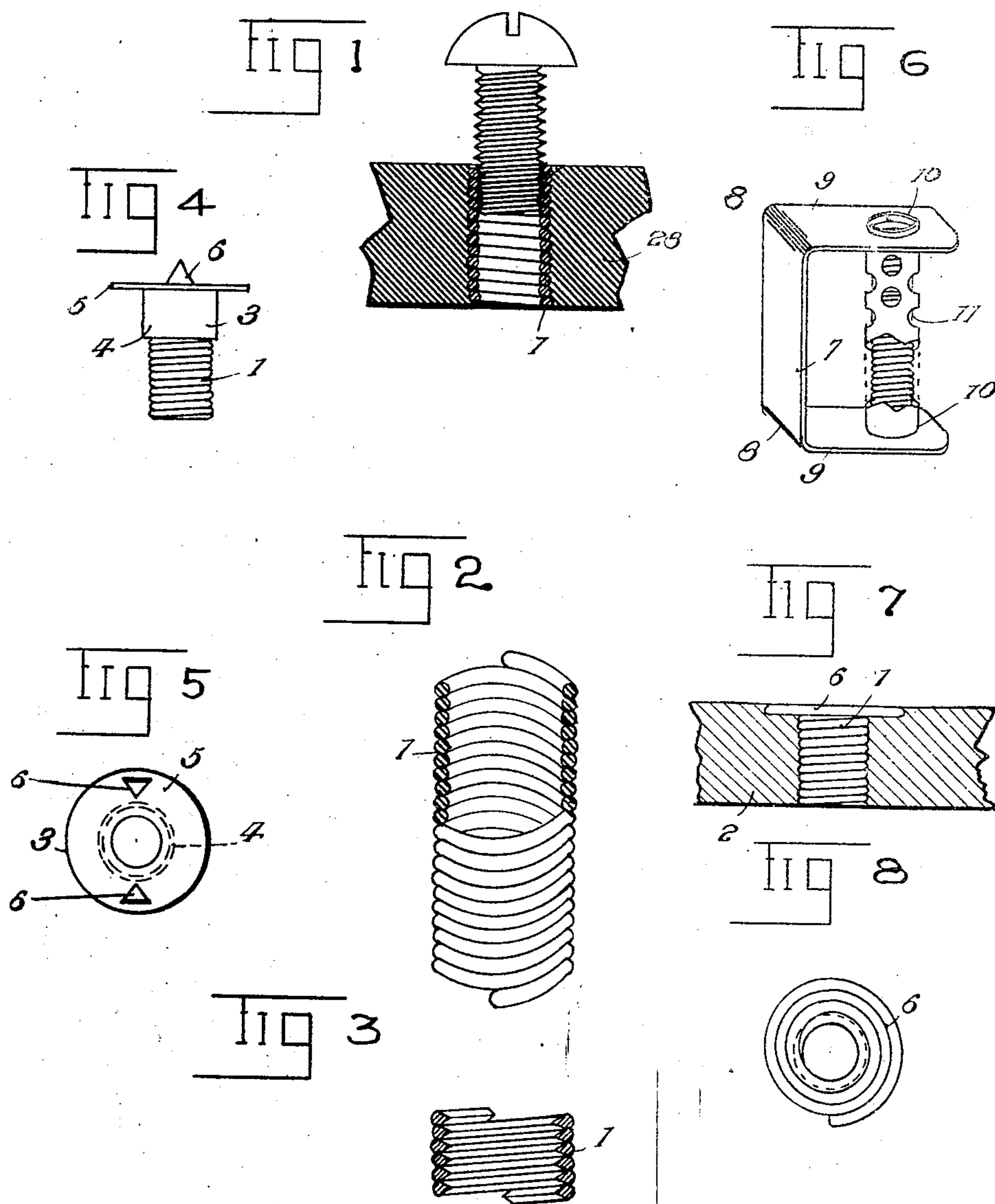


J. BEDELL.
 MEANS FOR FORMING THREADED OPENINGS IN CASTINGS.
 APPLICATION FILED NOV. 8, 1907.

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Patented Mar. 9, 1909.



WITNESSES

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MEANS FOR FORMING THREADED OPENINGS IN CASTINGS.

No. 914,915.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH BEDELL, a citizen of the United States, residing at Rensselaer, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Means for Forming Threaded Openings in Castings, of which the following is a specification.

My invention relates to improvements in means for forming threaded openings in castings.

With certain castings it is difficult to thread an opening in particular places because of the inconvenience of using a drill and a tap. Furthermore in order to reduce the cost of the castings having threaded openings, I have found it expedient and practical to insert what I shall hereinafter term a "shell" formed by a piece of appropriately shaped wire, and placing it in the mold, and fusing it with the metal forming the casting. The spiral shell may be formed from wire, properly shaped to receive a screw or bolt having a particular pitch, and is supported in the mold in a manner best suited for the convenience of the artisan.

The invention relates to the details of construction and arrangement of parts to be hereinafter referred to and particularly pointed out in the claims.

In the drawings—Figure 1 is a vertical section of my invention in connection with a screw. Fig. 2 is a detail sectional perspective view of the improved shell. Fig. 3 is a detail section of a shell formed interiorly to correspond with an ordinary bolt thread. Fig. 4 is a view of a slightly different form of my invention. Fig. 5 is a plan view of the same. Fig. 6 is a perspective view of a further form of the invention. Figs. 7 and 8, illustrate side and top views respectively of a shell and support formed from a single piece of metal.

Broadly stated the invention comprehends a plurality of spirals forming a shell to be embedded in a casting to provide a screw thread, but in addition I have also devised special means for holding the shell in position when casting, which means with the shell becomes a part of the finished product.

The numeral 1, indicates a spirally arranged shell, somewhat in the nature of a close spring, the convolutions of which are arranged adjacent each other and are of a determinate pitch

according to the pitch of the screw or bolt with which they are to cooperate.

As shown in Fig. 1, the shell is embedded in a casting indicated at 2, without a support. However, it is advisable to insure accuracy, to provide a support, and as it is possible to arrange this feature in a number of different ways, I have shown several. For instance in Fig. 4, the upper part of the shell 1, is provided with a thin sheet metal cap, 3, having a tubular portion 4, and an overhanging flange 5, with spurs 6. The cap serves as a means for holding the shell, and the spurs become embedded in the sand.

The form shown in Figs. 7 and 8, is similar to the construction shown in Figs 4 and 5, except that the overhanging flange 6, is formed from the same piece of metal as the shell. After the shell is of the desired length, the wire is bent into a series of flat coils at right angles to the disposition of those of said shell, as clearly shown in the drawing.

For certain shells, it is essential that an elongated support be provided, and to meet this contingency, I have provided a support, such as shown in Fig. 6. In this form of my invention, 7, indicates a sheet metal band bent at 8—8', to provide outwardly extending members 9—9', having openings 10—10', in which a tubular member is mounted. The tubular member may have openings 11, to expose the outer side of the shell, and through which the molten metal forming the casting will flow. The molten metal flowing into the openings will contact with the shell and fuse thereto.

In use the shell is placed in a suitable recess in the pattern, and is packed with core composition, and when the pattern is removed, the shell remains supported in the mold, and as has been indicated heretofore the shell may or may not have the support, this depending altogether on the circumstances as to the character of thread desired, the length of the same, and other incidental features known to the trade. When the molten metal is poured into the mold, it flows around the shell and support, and fuses, forming practically a unit, and producing a thread in the casting, without the necessity of drilling and tapping as now practiced.

If it is found desirable, the inner face of

the wire from which the shell is formed may be shaped to accommodate threads of particular shapes, as shown in Fig. 3, and obviously in winding the wire the pitch may be altered to suit the screw or bolt which is to coöperate with the thread.

Inasmuch as many minor changes may be made without departing from the spirit and scope of my improvement, I desire it to be understood that I reserve the right to such as come within the purview of the invention.

Having now described my invention, what I claim is—

1. An improved article of manufacture, designed for forming threaded openings in castings, comprising a shell formed from a single strip of metal in a series of coils, the inner diameter of the coils being beveled to accommodate a thread of a bolt or screw.

2. An article of manufacture designed for forming threaded openings in castings comprising a shell formed of a series of coils, and a thin metal support on the outside of the shell for holding the latter.

3. An article of manufacture designed for forming threaded openings in castings comprising a shell formed of a single piece of metal by coiling to provide a threaded opening, a support for the shell, said support having a tubular extension and a flange extending outwardly from the tubular extension.

4. An article of manufacture, designed for forming threaded openings in castings, comprising a shell formed of a single piece of metal by coiling to provide a threaded opening and a flange at one end of the shell, the shell and flange being formed of metal which will fuse with the molten metal.

5. An article of manufacture, designed for

forming threaded openings in castings, comprising a shell formed of a continuous piece of metal to provide a series of coils, and a support for the shell, said support comprising a thin sheet of metal bent to provide extended members, and a tubular extension connecting the members and engaging the shell.

6. As an improved article of manufacture, designed for forming threaded openings in castings, a shell formed of a continuous piece of metal to produce a series of coils, and a support for the shell, said support comprising a member connected by a tubular extension which engages the shell, said extension being formed with openings to expose a part of the shell.

7. As an article of manufacture, designed for forming threaded openings in castings, a shell formed of a series of coils, a support therefor, said support having a tubular extension formed with openings to expose the shell.

8. An article of manufacture designed for forming threaded openings in castings, comprising a shell formed of a series of coils, a support therefor, and a projection extending beyond the outer face of the support.

9. As a new article of manufacture, designed for forming threaded openings in castings, a shell formed of a series of coils, a support on the outside of the shell, said support having a series of openings to expose the shell.

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

JOSEPH BEDELL.

Witnesses:

R. WALLACE MCKEE,
ANDREW W. HAHN.