J. BEDELL.
MEANS FOR FORMING THREADED OPENINGS IN CASTINGS.
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INVENTOR
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WITNESSES
Louis H. Schmidt.
Joseph Murray.
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 par-
ticular shapes, as shown in Fig. 3, and ob-
viously in winding the wire the pitch may be
altered to suit the screw or bolt which is to
cooperate with the thread.

As 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 com-
prising 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 com-
prising a shell formed of a single piece of
metal by coiling to provide a threaded open-
ing, a support for the shell, said support hav-
ing a tubular extension and a flange extend-
ing outwardly from the tubular extension.

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

5. An article of manufacture, designed for
forming threaded openings in castings, com-
prising a shell formed of a continuous piece of
metal to provide a series of coils, and a sup-
port for the shell, said support comprising a
thin sheet of metal bent to provide extended
members, and a tubular extension connect-
ing 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 exten-
sion 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 ex-
tension formed with openings to expose the
shell.

8. An article of manufacture designed for
forming threaded openings in castings, com-
prising 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, de-
signed for forming threaded openings in cast-
ings, a shell formed of a series of coils, a sup-
port 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.