

No. 734,375.

PATENTED JULY 21, 1903.

A. T. SYMMS.
MEANS FOR MAKING PIPE.
APPLICATION FILED JUNE 2, 1902.

NO MODEL.

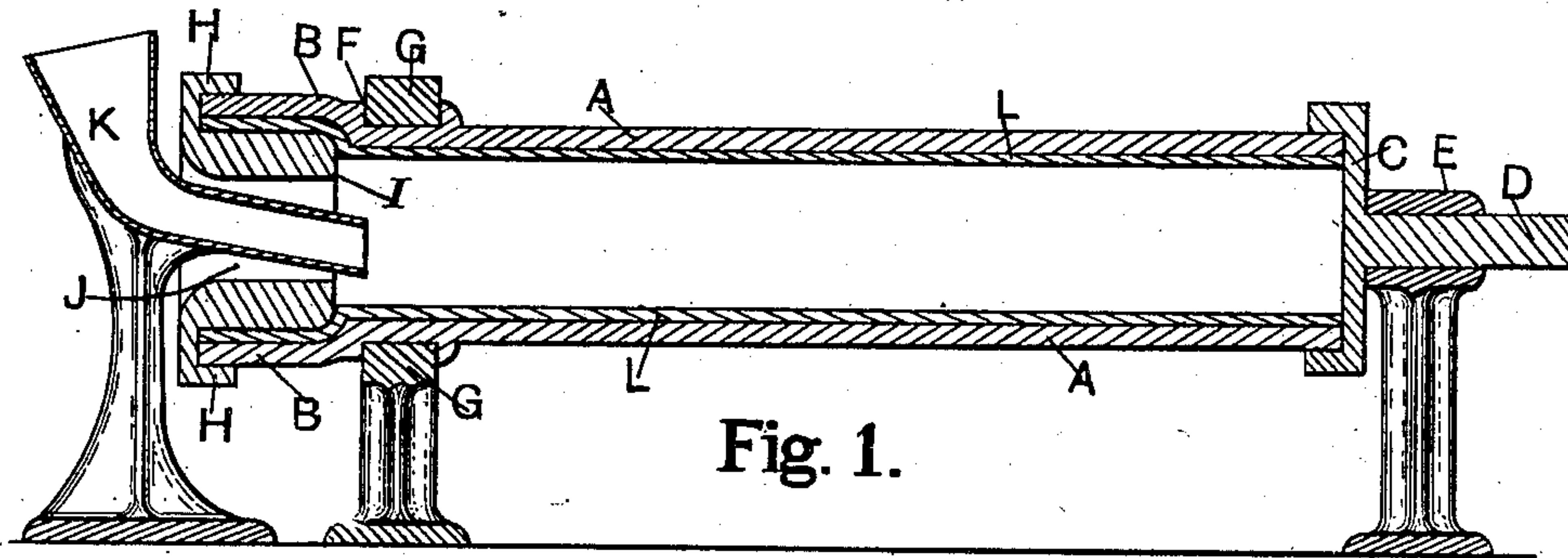


Fig. 1.

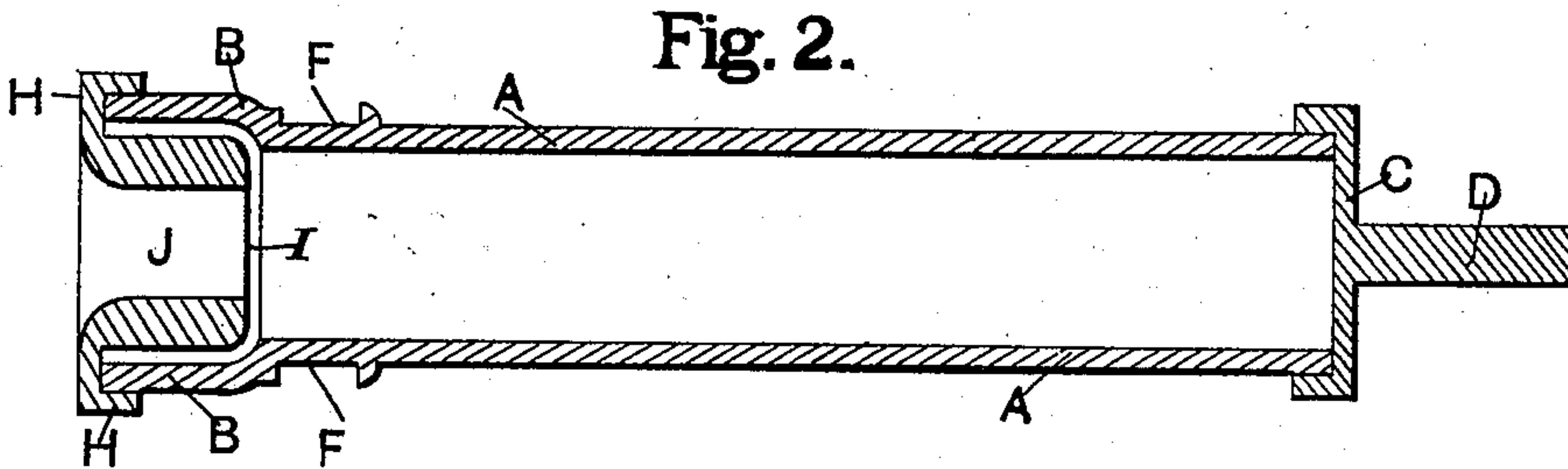


Fig. 2.

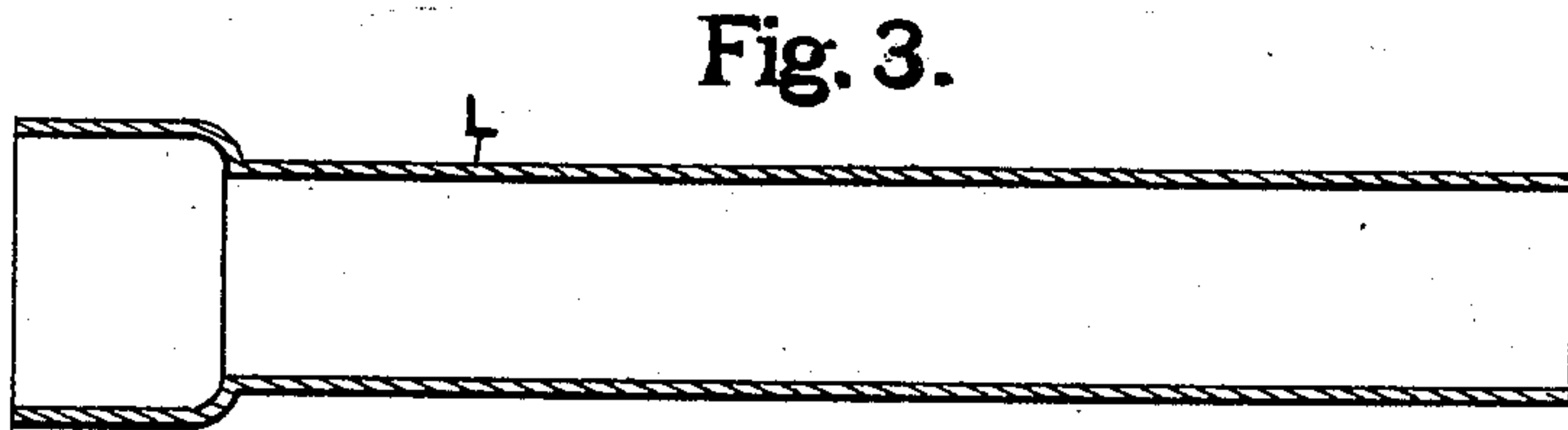


Fig. 3.

WITNESSES:

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MEANS FOR MAKING PIPE.

SPECIFICATION forming part of Letters Patent No. 734,375, dated July 21, 1903.

Application filed June 2, 1902. Serial No. 109,969. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR TRUMAN SYMMS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Means for Making Pipe, of which the following is a specification.

My invention relates to means for producing metal pipe; and it consists of a mold mounted in bearings and adapted to revolve, so that in the process of making the pipe the metal is introduced in a highly-heated condition and is induced to flow to the desired shape and thickness by virtue of centrifugal action, as is described hereinafter and illustrated in the accompanying drawings, in which—

Figure 1 is an axial vertical section of an apparatus in which is embodied my invention and which is adapted to form the ordinary bell-end cast-iron pipe, of which latter one is shown in axial section in the mold. Fig. 2 is a detached axial section of the revolvable mold to clearly illustrate construction. Fig. 3 is a detached axial section of a piece of pipe, also shown in Fig. 1, to clearly illustrate one type of pipe of the ordinary kind adapted to being made in this apparatus.

Similar letters indicate like parts throughout the several views.

The main body portion A of the mold should be made of some good thick strong metal, and may be provided with a heat-resisting interior lining when necessary in the manufacture of pipes consisting of metal having a high melting-point; but for metals having a low melting-point, such as lead or tin, I would much prefer an unlined mold, for the reason that the cooling process will take place much more rapidly and the rate of production increased. The mold has one of its ends flared outwardly, forming the bell B, the interior of which terminates at its inner end in a curved shoulder *a*.

The type of pipe illustrated in Figs. 1 and 3 is provided with the usual bell at one end for making connections.

At the small end of the mold is secured a head C, which terminates axially in a journal or shaft D, which is revolvably mounted in a supporting-box E. Near the opposite end of the mold is a portion F, finished to form a

journal-bearing for large ring-box G, so that the outer end of the mold is held free from obstruction.

At H is removably secured a head from which inwardly projects a boss I, having a large hole J disposed axially therethrough and forming a passage-way through which molten metal may be introduced—for instance, by means of a bent chute K or in any other convenient manner. Boss I is smaller in diameter and shorter than the inside of the bell B of the mold and forms a core to hold the metal forming the bell of the pipe to the proper thickness and shape. The inner end of the core or boss I is arranged adjacent the curved shoulder *a* and is curved, so as to form the inner curved portion of the bell of the pipe or tubing when the molten metal is inserted.

In the manufacture of pipe by this means after the parts of the mold have been assembled, as seen in Fig. 2, and in position, as in Fig. 1, and power applied to revolve the same at the proper speed molten metal is introduced into the interior through hole J, when by centrifugal action the portion of the mold around the core or boss I will be filled and then the balance of the metal flow along the cylindrical interior surface and form the main body of the pipe L, as shown in Fig. 1. The mold is revolved continuously until the molten metal has frozen to a sufficient degree of stability to be brought to a state of rest, when it may be removed by detaching the front head H, which permits of the pipe being slid longitudinally outwardly as soon as it has shrunk sufficiently from the surface of the mold.

It is obvious that the metal may be poured into the mold when the latter is at rest, after which it may be revolved and produce a similar result, as hereinbefore described, when the metal is introduced at a temperature sufficiently high so as not to chill before a sufficiently high speed has been attained in the revolving mold.

The general form of the mold is cylindrical, and pipe in the form of a perfect cylinder and no bell at the end may be cast without the use of a core.

I claim as my invention—

A mold consisting of a body portion formed

at one end with an outwardly-flared bell, the
inner end of the interior of which terminates
in a curved shoulder, a head secured to one
end of said body portion, a flanged head se-
5 cured to the flared end of said body portion,
a hollow core formed integral with the last-
named head and projecting inwardly there-
from, said core having its periphery spaced
from the interior of the said flared end of the

body portion and having its inner end curved to
and arranged adjacent the curved shoulder
thereof, and means for rotatably mounting
said mold, substantially as and for the pur-
pose specified.

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Witnesses:

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