

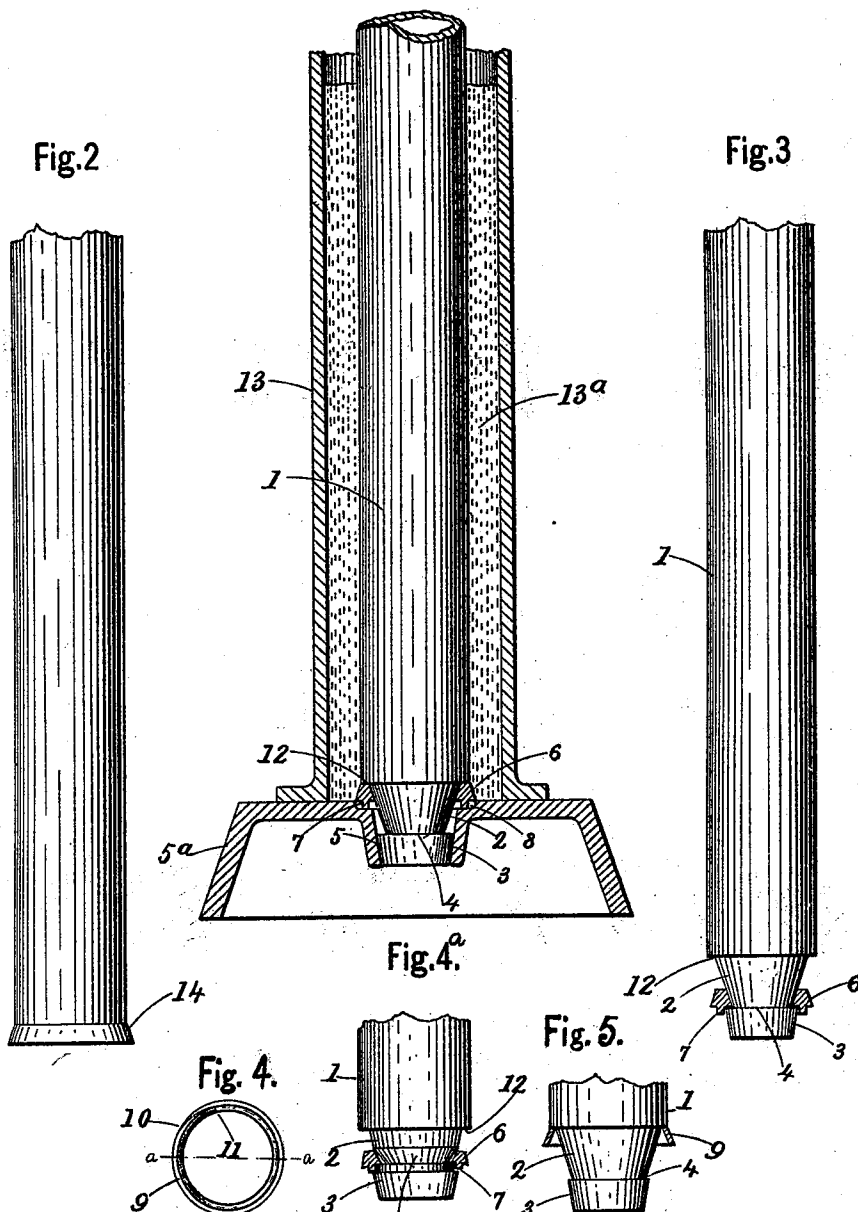
(No Model.)

H. HENDERSON & L. J. KENNGOTT.  
PATTERN FOR CASTING PIPE.

No. 516,972.

Patented Mar. 20, 1894.

Fig.1



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## PATTERN FOR CASTING PIPE.

SPECIFICATION forming part of Letters Patent No. 516,972, dated March 20, 1894.

Application filed September 19, 1893. Serial No. 485,746. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY HENDERSON and LOUIS J. KENNGOTT, citizens of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Patterns for Casting Pipe, of which the following is a specification.

Our invention relates to a new and improved pattern for casting pipe having an outward projecting surrounding flange at the end, its object is to provide a more convenient and rapid means for forming the flange around the end of the pipe, and it will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which:

Figure 1, is a side elevation of a portion of the pattern in its proper position within a molding flask and mold preparatory to being withdrawn therefrom, the elastic ring which forms the mold for the flange being shown in the position where it is expanded to its greatest diameter. Fig. 2, represents a portion of cast iron pipe, showing a suitable flange at the bottom. Fig. 3, is a side elevation of a portion of the pattern, showing the position of the elastic ring when contracted to its smallest diameter. Fig. 4, represents a modification of the ring, showing a suitable construction when formed of sheet metal. Fig. 4<sup>a</sup>, represents a modification showing a slight change in the construction of the ring guide. Fig. 5, represents the lower portion of the pattern showing the ring guide and a vertical central section through the ring shown in Fig. 4, on or about line *a a*, in said figure.

Referring to the said drawings—The pattern 1, is made of any well known material, for some purposes, such as cast iron pipe, cast iron is preferable. At one end of the pattern is a surrounding depression or tapering ring guide 2, and at the bottom of the ring guide is an enlarged tapering portion or bevel 3, which leaves a surrounding shoulder 4, the object of which is to prevent the contracting ring from being drawn off from the ring guide 2, while the pattern is being withdrawn from the mold. The tapering portion 3, is designed to fit into a corresponding tapering socket 5, in a chill or supporting base 5<sup>a</sup>.

The object of the base portion, 5<sup>a</sup>, is to receive and hold the lower end of the pattern, substantially as shown in Fig. 1, and it also causes the ring to be moved up and thereby expanded to its greatest diameter when the pattern is set down in place in said base as will be readily understood by reference to said Fig. 1.

The elastic ring 6, is constructed of any suitable elastic or flexible material, india rubber, hard rubber or spring metal, but soft rubber answers a good purpose and is preferable.

In Figs. 1—3 and 4<sup>a</sup>, we have shown a downward projecting portion 7, on the elastic ring and, consequently, a depression 8, is made in the top of the chill or base, but as this construction is not absolutely necessary to the successful operation of the device it may be dispensed with in some cases.

In Figs. 4 and 5, we have shown a ring 9, of spring metal. It may be of spring steel, brass, or it may be made of hard rubber or any material having sufficient spring for the purpose. It is divided on one side, the ends 10 and 11, being chamfered so as to allow them to pass each other while the diameter of the ring is being contracted. This contraction may be accomplished by the elasticity of the material when released by the operation of withdrawing the pattern, or a wedge or its equivalent may be used to open or close the ring before the pattern is drawn out of the mold. The object being to cause the contraction of the ring before the pattern is withdrawn so that the ring may be drawn with the pattern out from the mold without scraping or injuring it.

The operation of the device is very simple, the pattern 1 is set in a substantially vertical position so that its lower tapering end 3, fits down into the chill or base 5, thereby causing the ring 6, to be pushed up to the shoulder 12, and expanded to its largest diameter substantially as shown in Fig. 1, the flask 13, (see Fig. 1,) being of the usual construction in two parts, and secured together in the well known way, surrounds the pattern and is now in condition to receive the molding sand 13<sup>a</sup>, which is put in by ramming it down in the ordinary and well known

manner. The sand being rammed down sufficiently, the pattern is drawn upward out of the mold, which operation causes the ring 6, to be drawn downward until it is arrested by the shoulder 4, at which point the ring has contracted to its smallest diameter so that it can be drawn up with the pattern without touching the sides of the mold, thereby leaving an enlarged surrounding space at the bottom of the mold which forms the flange 14, at the bottom of the pipe when the casting is made (see Fig. 2).

In the modified construction which we have shown, the ring guide is constructed with two portions, the tapering portion, 2, and a tapering portion 15, having a much greater incline inward so that when the elastic ring is forced down over the first tapering portion 2, its own contraction will cause it to move quickly down the tapering portion 15, for some purposes this construction is important.

It will be seen, that the elastic ring 6, can be made of any desired shape suitable for the purpose.

Under some conditions the shoulders 4 and 12, may be dispensed with, because the movement of the pattern down into the base, 5<sup>a</sup>, may be limited thereby, and consequently the movement of the ring 6, upward will be thus limited, and when the ring is moved downward by the withdrawal of the pattern from

the sand until its diameter contracts to the size of the mold, its downward motion is thereby limited.

We claim as our invention—

1. A pattern for molding pipe provided with a tapering portion, or ring guide, at one end and an elastic ring on said tapering portion, adapted to be expanded or contracted in diameter by being moved up or down on said ring guide during the operation of constructing a mold, for the purposes described.

2. In a pattern for molding pipe, a double tapering portion 2 and 15, in combination with an elastic ring mounted thereon and adapted to be enlarged or contracted in diameter by being moved up or down on said tapering portion, substantially as and for the purposes described.

3. In a pattern for molding pipe, a tapering ring guide inclosed between two shoulders, in combination with an elastic ring mounted thereon and adapted to be enlarged or contracted in diameter by being moved up or down between said shoulders on said ring guide during the operation of constructing a mold substantially as described.

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