

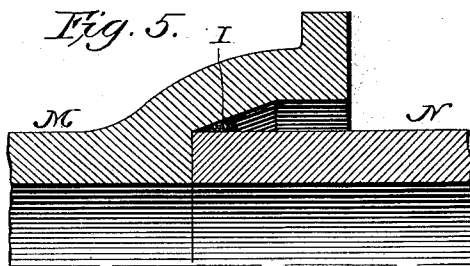
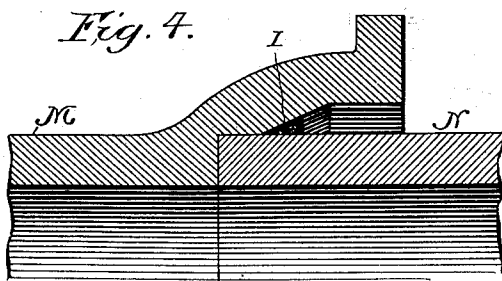
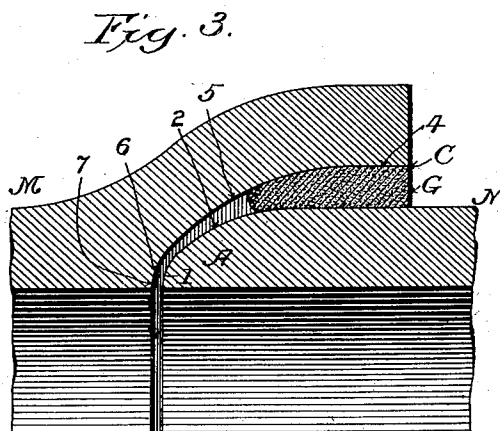
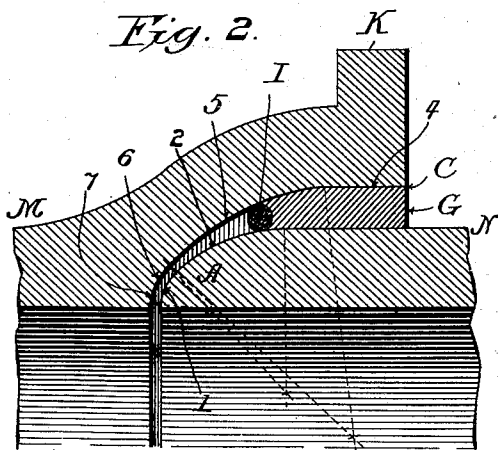
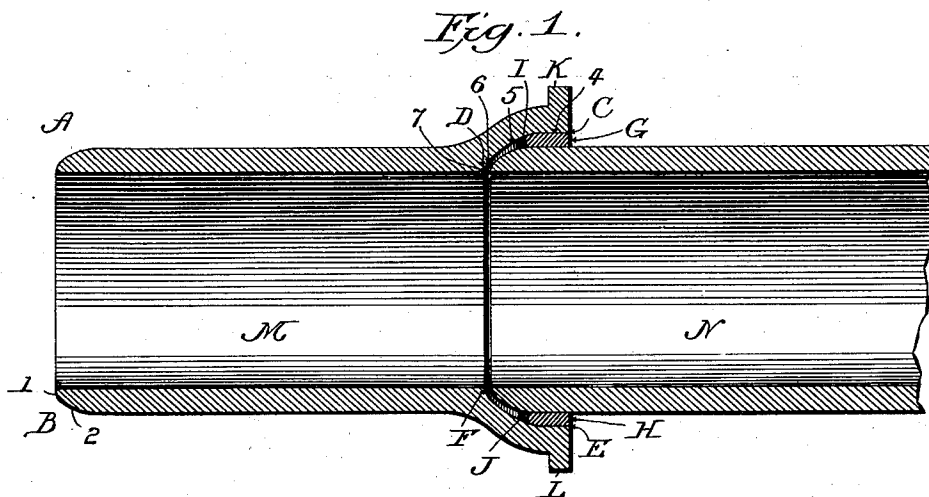
No. 655,088.

Patented July 31, 1900.

T. H. KANE.
SELF CENTERING PIPE.

(Application filed June 29, 1899.)

(No Model.)



Witnesses:

John Enders, Jr.
Ralph S. Warfield.

Inventor:
Thomas H. Kane
by
Rhesa W. Briggs & Co.
his Attorneys.

UNITED STATES PATENT OFFICE.

THOMAS HENRY KANE, OF NEW YORK, N. Y.

SELF-CENTERING PIPE.

SPECIFICATION forming part of Letters Patent No. 655,088, dated July 31, 1900.

Application filed June 29, 1899. Serial No. 722,321. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HENRY KANE, a citizen of the United States of America, residing at New York city, in the State of New York, have invented certain new and useful Improvements in Self-Centering Pipes, of which the following is a specification.

My invention relates to an improvement in self-centering pipes.

In laying iron, stoneware, or other pipes of the style usually found in commerce there is a waste of time and necessarily of money in consequence of the necessity of centering the pipes where the bell and spigot are joined. Where long lines of pipes are to be laid, each joint must be centered, and, owing to the large number of joints involved, the time required of the workman to do the work becomes an item of considerable expense. This is notably so in regard to water-pipes, gas-pipes, vitrified stoneware, sewers, or drain-pipes, &c.

The object of my present invention is to eliminate this item of expense by producing a pipe that will center itself automatically as soon as the spigot end is driven home in the bell of the adjacent pipe and also to secure uniform, unbroken, and continuous flow-line at the joints. I accomplish this object by curving or rounding the spigot end of the pipe, as shown in the accompanying drawings, in which—

Figure 1 is a view in longitudinal section showing a joint formed between two pipes. Figs. 2 and 3 are enlarged details, and Figs. 4 and 5 are modifications.

The letters M N represent the sections of a main. The spigot end of the pipe is curved or rounded, as shown by the letters A B. This shape is effected by means of a combination of two curves, as indicated by the numerals 1 and 2—that is to say, by a long flat convex curve 2, which merges into a short full convex curve 1 at the extreme end.

The interior of the bell is shaped to conform with the curves of the spigot end, and it is sufficiently greater in diameter than the spigot end of the pipe to allow room for the usual packing for the joint. The bell decreases inwardly in the direction of the longitudinal axis of the pipe in the manner shown by the letters C D and E F in the draw-

ings. This formation in the interior of the bell is first straight, as indicated at 4, and then it has the compound concave curve indicated by the numerals 5 and 6, which correspond with the two curves formed on the ends of the spigot, the inner curve terminating in a shoulder 7, as indicated. By the straight formation 4 at the outer end of the bell I am enabled to maintain the usual thickness of the lead joint usually used in iron pipes, and it also permits of the use of the usual calking-tool for calking the joints.

The letters K L indicate the usual flange on the bell end of the pipe. In stoneware or vitrified pipe this flange would be omitted and the hub of the bell would be carried out straight a suitable distance.

The letters I J indicate the rope or hemp packing, and G H indicate the usual lead joint.

From the foregoing it will be seen that the interior curve of the bell automatically centers the spigot end in a truly concentric position. Vitrified sewer or drain pipes have been constructed with a straight bevel on the spigot end which can be truly centered; but the centering involves nearly as much labor as the centering of a non-centering pipe, and consequently nearly as much expense as the latter, whereas my pipe when forced into the bell centers itself automatically. Hence its advantages are self-evident in diminishing the cost of material and the practical manipulation of laying. Furthermore, in those cases where it is compulsory to lay straight pipes in curved or broken lines the peculiar combination of curves on the spigot of my pipe, in combination with the curves on the bell end of my pipe, permits of a greater angular play of the pipes than is possible in the ordinary style of pipes now in use. The improvement effects a decrease in the weight of pipes, while it permits of greater play in the pipe-joints, and these advantages are secured without diminishing in any wise the strength, durability, and utility of the pipes.

In the modifications shown in Figs. 4 and 5 the bell has a straight bevel instead of a beveling curved formation adapting it for the common form of spigot end, as shown.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. A pipe having beveling curves of different convexity on the spigot end, said curves
5 extending from edge to edge of the thickness of the pipe-section and continually decreasing said thickness.
2. A pipe having beveling curves on the interior of its bell, the inner one of which meets
10 the bore of the pipe sharply, forming a large angle, said curves also extending part way toward the exterior of the bell.
3. A pipe having beveling curves of different concavity in the interior of its bell end,
15 the innermost of which meets the bore of the pipe sharply, forming a large angle, said curves also extending part way toward the open end of the bell.
4. The combination with a pipe having a
20 curved spigot end, said curve being wholly within the thickness of the pipe-section and extending from the exterior to the interior diameter of said pipe, of a pipe, the bell of
25 which has an interior curve corresponding with that of the spigot end of said first-mentioned pipe, whereby the pipe ends are automatically centered when joined together.
5. A pipe the bell end of which has curves
30 of different concavity, said innermost curve meeting the bore of the pipe sharply, form-

ing a large angle, and a shoulder at the inner end of the innermost curve.

6. A pipe having a bell on one end, said bell having a straight interior for a short distance from its extreme end inward parallel
35 with the spigot-pipe and formed on two curves adjacent thereto, of different concavities, said innermost curve forming a large angle with the bore of the pipe.

7. A pipe having a bell on one end, said
40 bell having a straight interior from its extreme outer end inward for a certain distance parallel with the spigot-pipe and then curved from the inner end of the straight portion toward the bore and having a shoulder immediately adjacent to the bore, said curves being
45 effected by a combination of concave curves, the innermost of which connects with the bore of the pipe forming a large angle.

8. The combination with a pipe, the bell
50 end of which has its interior straight and then formed upon two curves of different concavities, and a second pipe, the spigot end of which has curves of different convexities, of a packing between said bell and spigot ends.
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THOMAS HENRY KANE.

In presence of—

J. H. LOZIER,
F. B. LOZIER.