

W. H. YOST.
PIPE.

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1,031,766.

Patented July 9, 1912.

Fig. 1.

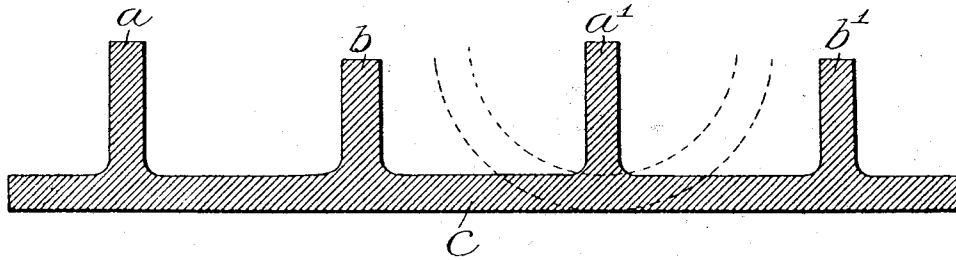
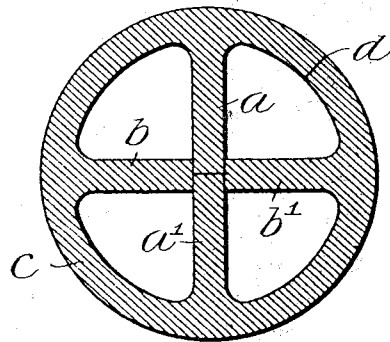


Fig. 2.



Witnesses:-

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UNITED STATES PATENT OFFICE.

WINFIELD H. YOST, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR TO NATIONAL DUMP CAR COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF MAINE.

PIPE.

1,031,766.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WINFIELD H. YOST, a citizen of the United States, residing at Montreal, in the county of Hochelaga, Province of Quebec, Dominion of Canada, have invented certain new and useful Improvements in Pipes, of which the following is a specification.

The object of my invention is to provide a structure that will perform the functions both of a pipe and a girder, and for this purpose I construct a pipe of circular or other cross section with interior reinforcing means of the character hereinafter described.

My invention includes the process of manufacturing such a pipe, and also the pipe as an article of manufacture.

In the drawings—Figure 1 is a cross sectional view of a strip of metal rolled or otherwise formed in such shape as to be adapted for carrying out my invention. Fig. 2 is a cross sectional view of a section of pipe embodying my invention.

While there may be some variation in the form of the internal reinforcing means, I have illustrated in the drawing a form which I consider well adapted for practical purposes. A strip of metal is formed, preferably by rolling, in the shape illustrated in cross section in Fig. 1, the strip consisting of a base *c* designed to form the exterior or shell of the pipe, and projecting ribs *a*, *a'*, *b*, *b'*, which in the completed article form the internal strengthening ribs or partitions. Two of the strengthening ribs *a*, *a'* are of slightly greater depth than the remaining two. When the shell *c* of the pipe is curved to the form illustrated in Fig. 2, the edges of the projecting ribs *a*, *a'* abut against each other, and the edges of the projecting ribs *b*, *b'* abut against the sides of the ribs *a*, *a'* at their point of junction. The edges of the shell *c* are secured together by welding, or otherwise, as indicated at *d*. By means of this construction it will be apparent that I provide means whereby a large body of material is opposed to any strains to which the pipe may be subjected without, however, in any way interfering

with the use of the pipe for the purpose of conducting liquids or gases therethrough. The structure described, therefore, forms an efficient combined girder and pipe.

It will not be necessary in all cases to so proportion the parts that the interior strengthening ribs will abut against each other, although in the present instance I show that construction. Neither will it be necessary in all cases to weld the edges of the shell *c* together. In some instances where it is not desired to use the structure for conducting liquids or gases, it will be sufficient to merely bend the shell to the desired form without welding or otherwise securing together the meeting edges.

The structure herein described may be manufactured by passing a billet or metal blank through a pair of rolls properly formed to impart the cross sectional form illustrated in Fig. 1. Subsequently, any suitable means may be adapted for bending the structure into the form of a pipe. The strip, after being rolled to the cross section shown in Fig. 1, may be subjected to the action of a second pair of rolls so formed as to partially curve the shell, and the bending may be completed by a third pass, or by other suitable means for guiding and directing the edges into proximity as they emerge from the rolls.

In most cases it will be found advisable to give the pipe a circular form, although in some instances a flat or oblate cross section may be desired. By the use of the term "cylindrical" in the following claims, therefore, I do not intend to limit myself to a circular form, but to cover also other cross sectional forms of the character referred to.

While I have described one mode of manufacturing a pipe having internal reinforcing ribs, my invention is not limited to a pipe formed by this particular method. In some instances it may be found desirable to manufacture the internal strengthening ribs in a separate piece, inserting them in the pipe which has been formed by any of the ordinary modes of manufacture. The method referred to, however, is my pre-

ferred method of constructing the combined pipe and girder described.

What I claim is:

A cylindrical shell, a pair of longitudinal
5 ribs projecting inwardly therefrom and
abutting against each other edge to edge,
and a second pair of inwardly projecting

spaced longitudinal ribs abutting against
the sides of the first mentioned pair of ribs.

WINFIELD H. YOST.

Witnesses:

ROBERT M. ZIMMERMAN,
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Patent may be obtained

Commissioner of Patents.