(No Model.)

H. F. WILLIAMS.

PIPE.

No. 540,202. Patented May 28, 1895.

Fig. 1.

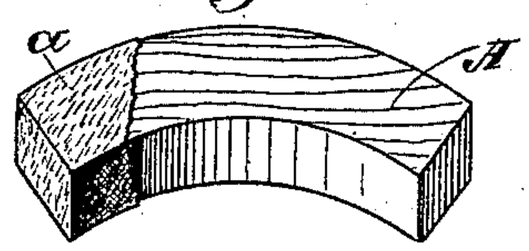


Fig. 2.

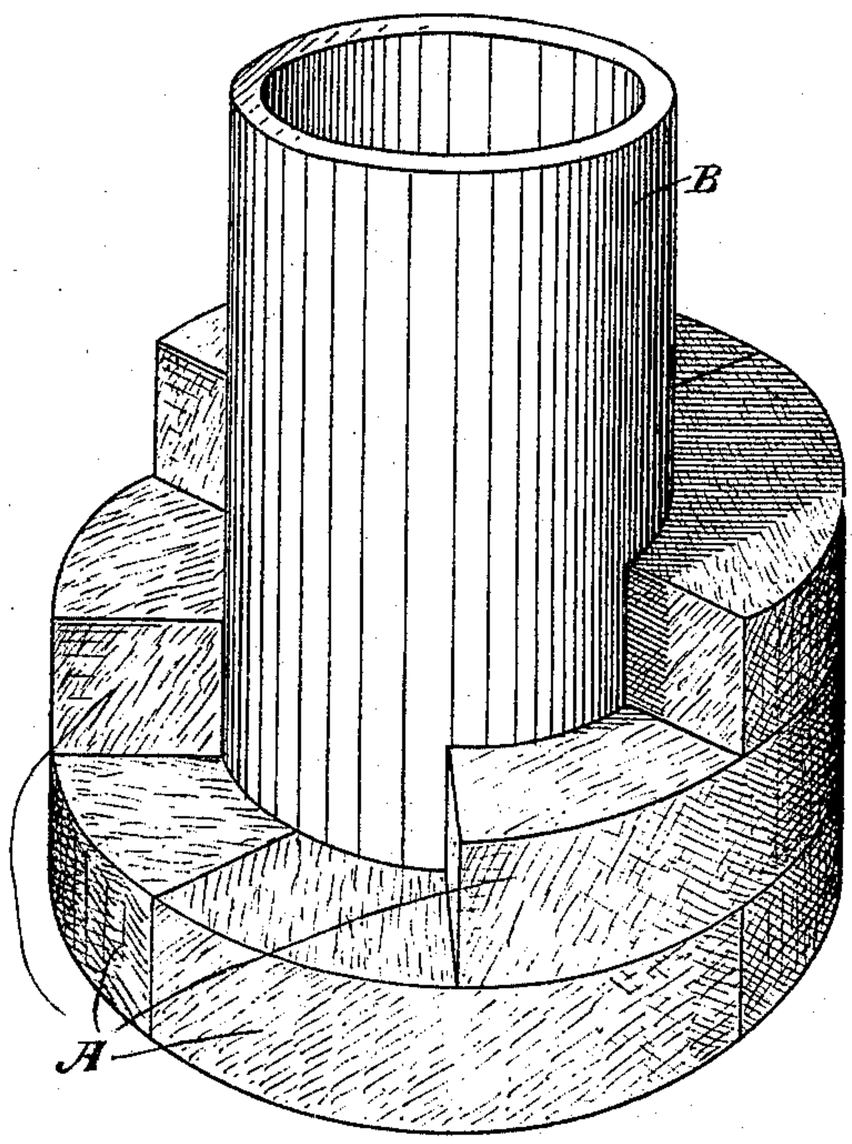
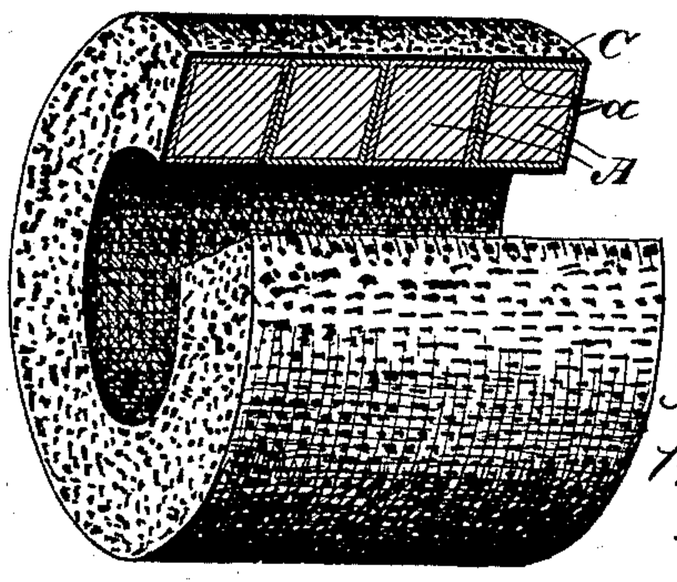


Fig. 3.



Witnesses,
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H. F. Ascheck

Inventor,
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Atty

UNITED STATES PATENT OFFICE.

HENRY F. WILLIAMS, OF SAN FRANCISCO, ASSIGNOR TO THE IMPROVED ASPHALT PIPE COMPANY, OF BAKERSFIELD, CALIFORNIA.

PIPE.

SPECIFICATION forming part of Letters Patent No. 540,202, dated May 28, 1895.

Application filed March 4, 1895. Serial No. 540,515. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. WILLIAMS, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Pipes; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an improved construction for pipes and the method of manufacture thereof.

It consists in certain details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of one of the wooden segments, showing it partially coated with the adhesive substance or glue. Fig. 2 is a view showing the method of constructing the pipe. Fig. 3 is a complete section of pipe, a piece being broken out to show the material.

The object of my invention is to provide a light and strong pipe which is especially adapted for conveying water or any liquid not having a high temperature, and under any considerable degree of pressure.

In carrying out my invention I employ a combination of wood and any strong insoluble glue or adhesive material, preferably asphaltum or one having an asphaltum base. The wood is formed in segments having the grain or fiber extending in the direction of lateral strain upon the pipe, that is to say, circumferentially of the pipe.

In the various devices in use for manufacturing wooden pipe, the vertical fiber is ordinarily arranged to run longitudinally of the pipe, and not circumferentially, and said pipes are more or less dependent upon iron or other bands to impart sufficient strength to resist the outward pressure of the contents of the pipe. My invention combines the tensional strength of the longitudinal fiber arranged essentially circumferentially, and the adhesive strength of the uniting substance, without banding or other support.

In practice the wood is sawed into small segments A of any suitable or desired thickness, and of such length that the grain or fiber of the wood extends essentially from one end to the other of the segment. These segments are made of such length that a certain number of them, abutted together end to end, will form a circle of any required diameter. These segments are now provided with a coating *a* of glue. This is effected in practice by boiling them in refined asphaltum at a uniform temperature of about 300° Fahrenheit, until all moisture is expelled, and a coating on the wood is formed. The asphaltum is prepared with great care until it becomes an insoluble glue of sufficient tenacity to stand a tensile strain of about two hundred pounds to the square inch, so that the square abutting ends of the segments may be united by this adhesive glue and when cold will require the above named tensile strain to separate them.

In forming the pipe, the segments having been properly coated with the asphaltum, are placed in rows around a hollow metal core, such as B, the segments in each row breaking joints with those in adjacent rows. The segments in each row abut at their ends, and those in different rows lie on each other, and thus all adhere by the asphaltic glue between their meeting surfaces. These segments are laid up to form sections of pipe of any desired length and weight, so as to be easily handled by two workmen. The section of pipe may be separated from the cylindrical core by applying steam or other heat within and to the core sufficient to loosen the exterior pipe, which is then slipped off the core or the latter removed from it. Each section of pipe is then thoroughly coated inside and out with the same asphaltic preparation as at C, thus securing a perfectly compact asphaltic pipe with a protected wooden core. These annular rows or circles of wood have, by reason of being formed in segments in which the grain or fiber in each segment extends approximately longitudinally from end to end, and circumferentially of the formed pipe, will have the full tensile strain of the wood in addition to the strength of the uniting asphaltum or glue.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A pipe made of independent annular rows, each row consisting of a plurality of wooden segments, the segments in adjacent rows breaking joints, and all adhering together by means of a suitable glue.

2. A pipe made of independent annular rows, each row consisting of a plurality of wooden segments, the segments in adjacent rows breaking joints, and all adhering together by means of a suitable glue, and the whole coated with asphalt.

3. A pipe consisting of a plurality of segments of wood, each segment having the grain or fiber extending essentially longitudinally from end to end of said segment, said segments being coated with a suitable glue and laid up in annular rows breaking joints with each other.

4. A pipe consisting of a plurality of segments of wood, each segment having the grain or fiber extending essentially longitudinally from end to end of said segment, said segments being coated with a suitable glue and laid up in annular rows breaking joints with each other, and the whole coated with asphalt.

In witness whereof I have hereunto set my hand.

HENRY F. WILLIAMS.

Witnesses:
S. H. NOURSE,
H. F. ASCHECK.