

(No Model.)

H. ANDERSON.  
SEWER.

No. 413,427.

Patented Oct. 22, 1889.

Fig. 1.

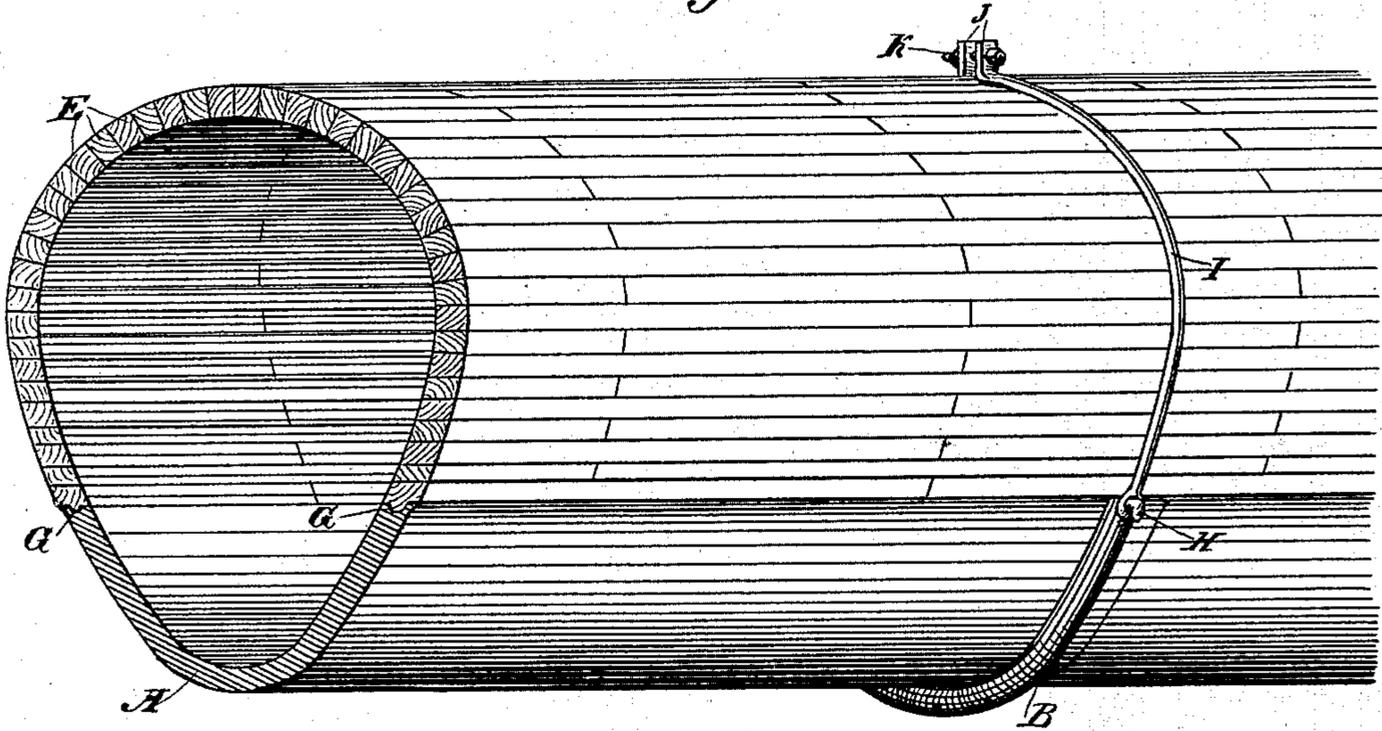
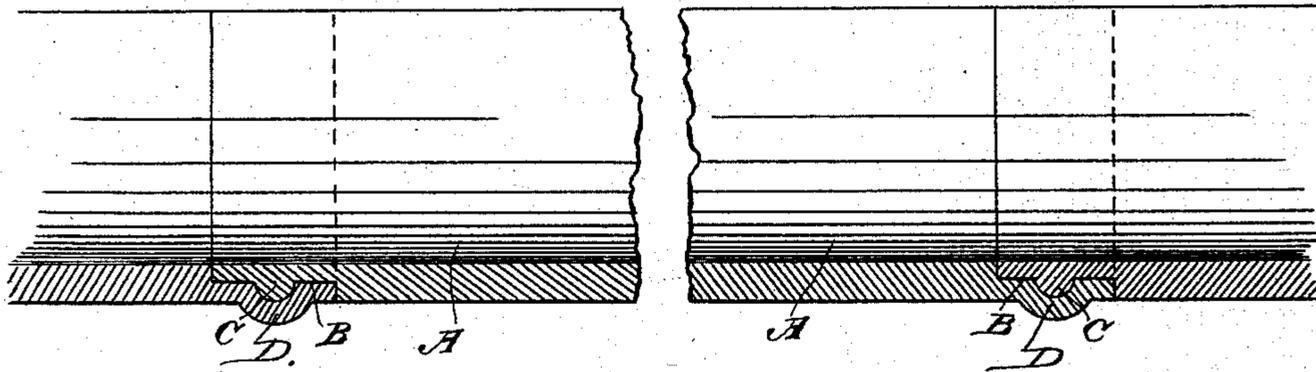


Fig. 2.



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# UNITED STATES PATENT OFFICE.

HENRY ANDERSON, OF SAN FRANCISCO, CALIFORNIA.

## SEWER.

SPECIFICATION forming part of Letters Patent No. 413,427, dated October 22, 1889.

Application filed June 28, 1889. Serial No. 315,905. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY ANDERSON, of the city and county of San Francisco, State of California, have invented an Improvement in Sewers; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in the construction of sewers, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of a section of the sewer. Fig. 2 is a sectional view showing the joint of the lower portion of the sewer.

In order to make a strong and imperishable bottom, and also to retain it at its proper grade independent of such settling as may take place from time to time in the surrounding soil, I form the bottom A of iron, preferably giving it the proper curvature and shape to produce the best results in speed and current-scouring effect. This bottom is made of sections of any suitable length, and the sections are made to overlap each other by means of a joint in each. The ends of the two overlapping sections are halved together, as shown at B, so that they form a perfectly smooth surface in the interior of the sections. In order to hold the sections together and prevent their slipping out of place endwise, the inner sections of the halved ends have annular projections formed upon them, as shown at C, while the outer or overlapping sections have a corresponding swell or enlargement D, with a concave groove to receive the projection C. When these are laid together, they are firmly united, so that they will not slip sidewise or endwise, and at the same time a perfectly smooth interior surface is presented to the flowing material within the sewer, which may thus be easily flushed and kept clean.

The upper portion of this sewer may be made of brick, concrete, or of wooden staves,

as shown at E, and they are united with the upper edges of the iron bottom A by means of tongues fitting into grooves in the edges of the section A, as shown at G. In order to hold these staves firmly together, I have shown eyes or points of attachment H, formed upon the lower portion of the sewer-pipe, either at the protuberances of the joints, or, if desired, at other suitable portion of the length, and from these attachments the flexible strips I extend around the upper portion of the sewer, being made in two parts and united at the top, where a screw-bolt passes through the united flange J, and is drawn tight by means of the nut K upon one end, thus clamping the upper and lower sections of the sewer firmly together. The wooden staves may be saturated with asphaltum or other preservative, and after the structure is complete it may be coated with the same, which will preserve it for a long time.

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

1. The bottom sewer portions A, having the overlapping joints B, with the connecting portions C and D, substantially as herein described.

2. The sewer having the bottom formed of metallic sections united by joints, as shown, and the upper part formed of staves, brick-work, or concrete, in combination with the uniting or securing bands I, having the lower ends attached to the sections A, and a means for drawing them tight around the upper portion of the sewer, substantially as described.

In witness whereof I have hereunto set my hand.

HENRY ANDERSON.

Witnesses:

GEO. H. STRONG,  
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