

(No Model.)

M. G. SCHINKE.
SUBMERGED PIPE.

No. 566,410.

Patented Aug. 25, 1896.

Fig. 2.

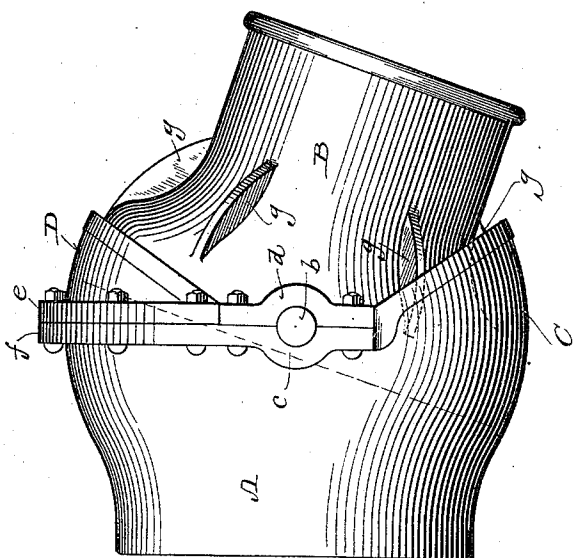
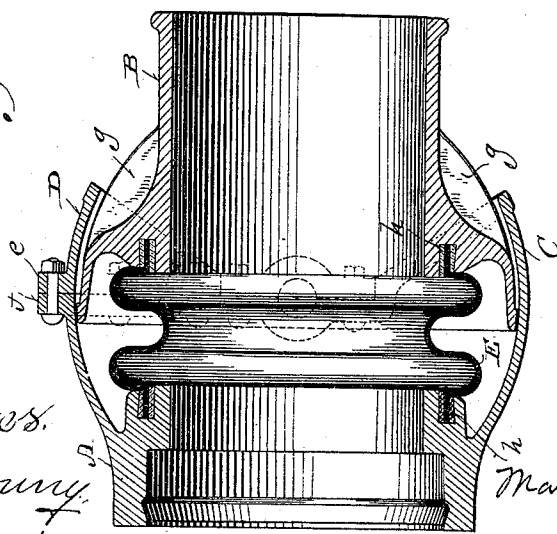


Fig. 1



Witnesses.
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UNITED STATES PATENT OFFICE.

MAX G. SCHINKE, OF MILWAUKEE, WISCONSIN.

SUBMERGED PIPE.

SPECIFICATION forming part of Letters Patent No. 566,410, dated August 25, 1896.

Application filed May 8, 1893. Serial No. 473,459. (No model.)

To all whom it may concern:

Be it known that I, MAX G. SCHINKE, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Submerged Pipes; and I do hereby declare that the following is a full, clear, and exact description thereof.

Like in my former patent, No. 486,986, issued November 29, 1892, the present invention relates particularly to the laying of submerged pipe, and has for its object to provide a flexible joint involving a construction and arrangement of parts specifically different from what is set forth in said patent, as will be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a sectional view of my flexible pipe-joint as it appears when on a horizontal line, and Fig. 2 a side elevation of the joint having a portion thereof at an angle to such a line.

Referring by letter to the drawings, A B represent two pipe-sections of non-flexible material, such as iron, having integral bell-shaped meeting ends of such relative diameter that the one belonging to the latter section loosely engages that of the former section, as clearly illustrated in Fig. 1, whereby either of said sections may be turned at an angle to the other, as shown in Fig. 2.

As herein shown, I may provide the bell end of the pipe-section B with trunnions *b* and the corresponding end of the pipe section A with seats *c* for the trunnions, the latter being held in place by caps *d*, bolted in place.

As shown, the bell end of the pipe-section A has upper and lower extensions C D, struck on the same radius as said end of the pipe-section, and it is preferable to have the lower extension integral with said pipe-section and the upper one provided with a flange *e*, bolted to a corresponding flange *f* on the aforesaid pipe-section, this latter flange being provided with the trunnion-seats above specified. The extension or extensions of the bell end of the pipe-section A guard against the entrance of mud or other material injurious to a flexible pipe-section E connecting the non-flexible sections hereinbefore set forth, and by the gen-

eral construction and arrangement of parts herein shown the flexible pipe-section is protected from external mechanical influences and forces.

By means of ribs *g* on the non-flexible pipe-section B having their edges facing against the extended and inclosing bell end of the other non-flexible pipe-section A, I strengthen the inner one of these non-flexible pipe-sections and provide guides for the movement necessary to angular deflection.

By means of cement, lead, or any suitable calking material *h* the ends of the flexible pipe-section E are firmly secured in seats formed in the bell ends of the non-flexible pipe-sections, and, like in my former patent, this flexible pipe-section is preferably corrugated.

In practice the non-flexible pipe-sections A B are of any desirable length and preferably of such construction as to form spigot-joints with other sections of pipe in the system, but the outer ends of said non-flexible sections may be of any suitable construction for the formation of various well-known joints with these other pipe-sections.

By the construction herein specified I do away with the clamping-rings set forth in my previous patent and otherwise simplify and cheapen the flexible joint without departure from the practical advantages enumerated in said patent, and by the trunnion connection herein specified I am enabled to better utilize said joint in connection with pipe of large diameter.

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

1. In submerged pipe, the combination of two non-flexible pipe-sections having bell-shaped meeting ends of such relative diameter that one loosely engages the other, trunnions on the inner bell, seats on the outer bell engaged by the trunnions, caps arranged to hold said trunnions in the seats, and a flexible pipe-section having its ends in watertight connection with seats in the bell ends of the former pipe-sections.

2. In submerged pipe, the combination of two non-flexible pipe-sections having bell-shaped meeting ends of such relative diameter that one loosely engages the other, a guard

extension on the outer bell, trunnions on the inner bell, seats on said outer bell engaged by the trunnions, caps arranged to hold said trunnions in their seats, and a flexible pipe-
 5 section having its ends in water-tight connection with seats in the bell ends of the former pipe-sections.

3. In submerged pipe, the combination of two non-flexible pipe-sections having bell-
 10 shaped meeting ends of such relative diameter that one loosely engages the other, trunnions on the inner bell, seats on the outer bell engaged by the trunnions, caps arranged to hold said trunnions in their seats, a flexi-
 15 ble pipe-section having its ends in water-tight connection with seats inside the bell ends of the former pipe-sections, and upper and lower guard extensions constituting part of the outer bell, at least one of these exten-
 20 sions being detachable.

4. In submerged pipe, the combination of two non-flexible pipe-sections having bell-shaped meeting ends of such relative diameter that one loosely engages the other, trunnions on the inner bell, seats on the outer
 25 bell engaged by the trunnions, caps arranged to hold the trunnions in their seats, guide-ribs on said inner bell, guard extensions on said outer bell opposing the ribs, and a flexible pipe-section having its ends in water-
 30 tight connection with seats in the bell ends of the former pipe-sections.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wis-
 35 consin, in the presence of two witnesses.

MAX G. SCHINKE.

Witnesses:

N. E. OLIPHANT,

H. G. UNDERWOOD.