(No Model.)

R. SPEAR.

TRANSMITTING POWER.

No. 333,789. Patented Jan. 5, 1886.

Fig. 1.

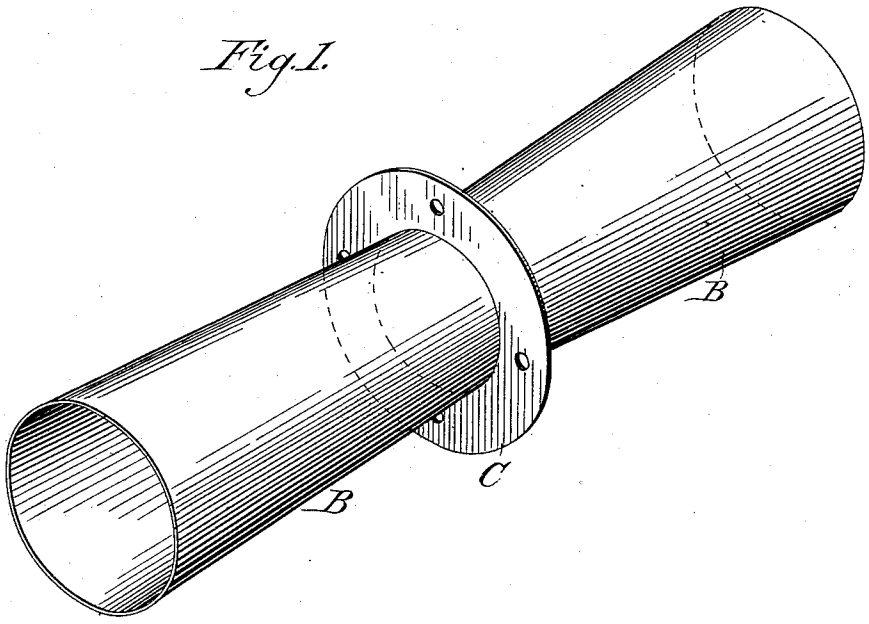
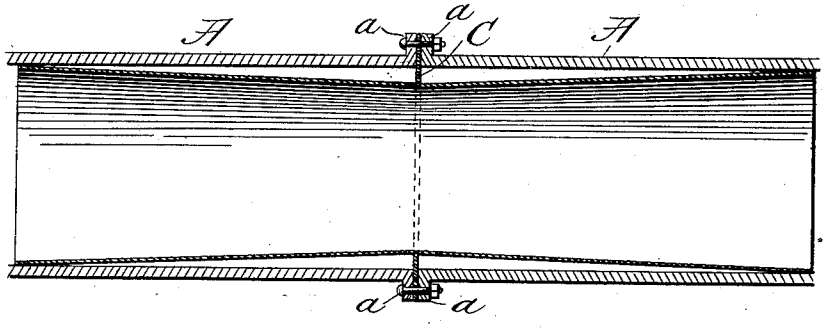


Fig. 2.



Attest:
F. H. Schott
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by John C. Tasker Atty

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

ROBERT SPEAR, OF NEW YORK, N. Y.

TRANSMITTING POWER.

SPECIFICATION forming part of Letters Patent No. 333,789, dated January 5, 1886.

Application filed May 19, 1885. Serial No. 166,038. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SPEAR, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Transmitting Power; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements upon the mode of transmiting power for which Letters Patent were granted to me October 5, 1869, No. 95,614, and May 17, 1870, No. 103,252; and the invention consists in so connecting the power-transmitting tubes, by the use of a smaller reducing or contracting device constructed of a peculiar and novel form, as to avoid all abrupt joints, thereby obviating frictional resistance and facilitating the passage of the fluid or air in either direction through the pipe, the diameter of the inserted reducer or diaphragm being diminished as compared with that of the main tube or tubes, and any degree of power, as desired, being thus capable of transmission with unabated force, as hereinafter set forth.

In the annexed drawings, illustrating the invention, Figure 1 is a perspective of my improved reducer or contractor, and Fig. 2 is a sectional view of the same and the tubing or conduit which contains it.

Like letters of reference designate like parts in both views.

A A represent tubes or pipes acting as a conduit for fluid or air. Their extremities are provided with externally-projecting flanges *a a*, by means of which they are adapted to be securely bolted together.

B B represent the conically-shaped portions of the reducer or contractor. This contractor has its least diameter at the middle point of its length, and is provided at this smallest portion with an externally-projecting circular flange, C. From the middle point the form of the reducer expands toward either end, having its greatest diameter at the extremities, which are constructed to fit closely within the bore of the transmitting-tubes. The flange C is adapted to be inclosed between the flanges *a a* of the pipes, so that the bolts which secure the pipes together will also fasten the reducer in an immovable position. Thus the flange C serves to keep the middle diameter of the tube always the same length, and the compression of this contracted part, which might naturally result from the action of the transmitted force, will be avoided.

It will readily be seen that a conduit using my reducer can contain no abrupt joints, for the conical parts B B, whatever be their thickness at the attaching-point of the flange C, will be made gradually thinner until the extremity is reached, and there the thickness will be inappreciable, as far as the creation of any obstacle to the passing liquid or air is concerned. I prefer, however, to construct the entire contractor of thin sheet metal. This will allow the ends to have a certain amount of spring or elasticity, so that when they are inserted into their respective pipes the tension of the metal will cause them to fit closely against the inner surfaces of the pipe.

A reducer of my construction inserted into a pipe will allow the fluid or air to pass unobstructed in either direction, as desired.

The length of the parts B B of the contractor is only what will allow of convenience in construction and admit the proper reduction in the tube-diameter to be effected; and this diameter of the middle part of the reducer, which is the measure of the reduction, is variable to correspond with the diameter of the pipe itself, and also with the length of the pipe-section, also the distance to the next joint. The reason of this is obvious when it is understood that the object of this arrangement is to allow the fluid to perform the peculiar function of its nature, which is to maintain its equilibrium.

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

1. A device for reducing the internal diameter of tubes or pipes at their joints, consisting of a tube the ends of which have a diameter equal to the diameter of the main pipe, and the middle portion having internal diam-

eter smaller than that of the main pipe, and provided with circular external flange, substantially as shown and described, and for the purpose specified.

2. The combination, with a conduit for the transmission of power, consisting of the main pipes A, having coupling-flanges *a*, of closely-fitting reducers or contractors of smaller middle diameter than that of the main pipes, and expanded at both ends to a diameter that equals the internal diameter of said main pipes, and provided with circular external flange, C, which interlock with the flanges of pipes A, substantially as shown and described, and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT SPEAR.

Witnesses:
FRED E. TASKER,
E. L. WHITE.