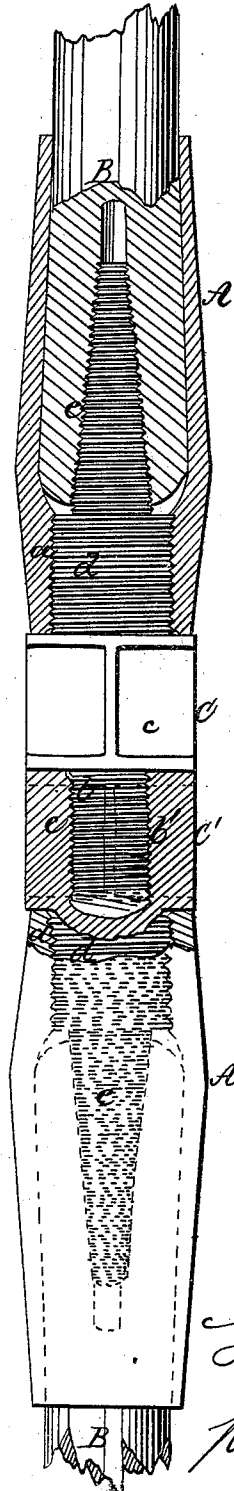


H. De Zavala.

Shaft Coupling.

Nº 106,673.

Patented Aug. 23, 1870.



Witnesses,

McCombs
Wm. Haynes

Inventor
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att.

United States Patent Office.

HENRY DE ZAVALA, OF NEW YORK, N. Y.

Letters Patent No. 106,673, dated August 23, 1870; antedated August 11, 1870.

IMPROVEMENT IN PUMP-ROD CONNECTIONS FOR DEEP WELLS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, HENRY DE ZAVALA, of the city, county, and State of New York, have invented a new and useful Improvement in "Pump-rod Joints for Artesian Wells," of which the following is a full clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and which represents a partly sectional longitudinal view of my improved pump-rod joint as applied to two sections or lengths (in part) of the pump-rod.

This, my improvement, which is particularly applicable as a rod-coupling to the pumps of oil-wells, includes the well-known device of a taper metallic socket to the adjacent ends of the rods or rod-sections to be united, with screw-coupling center-piece, to said sockets, and it further includes the well-known mechanical expedient of a wedge or taper plug for swelling out and securing the rod in the socket.

But, while thus using devices which of themselves, or apart from certain peculiarities of construction and particular combination, are old, my invention differs in very important respects from all other rod or pipe-couplings, the same consisting of a combination, with the tapering sockets, of a divided center-piece, arranged, either section, to screw one into the other, and each section or divided portion of said piece screwing into its corresponding socket, and being formed with a taper screw-plug extension which, on screwing the section of the center-piece into the socket, worms, or screws into the rod within the socket.

By this construction of coupling, the several objections incidental to the use of an undivided center-piece, and loose or separate wedges, are done away with, and numerous advantages obtained.

Referring to the accompanying drawing—

A A represent metallic sockets, fitted onto the ends of wooden pump-rods or rod-sections B B, and of a tapering or enlarged character at their ends, for the better retention of the rods therein, also having a screw-thread, *a*, cut in their outer ends.

C C' are the halves or sections of a divided center-piece, the one of which has a male-screw projection, *b*, that fits a female thread, *b'*, in the end of the other section, and each of which has an angular body or formation, *c*, for application of a wrench, and to facilitate the holding up of the rod or rod-sections in establishing connection.

Each section of the center-piece is also formed with a male thread, *d*, to fit within the female thread *a* of the wedging-socket, and is furthermore provided or formed with a conical screw-plug, *e*, that constitutes an integral part of said section.

From this description it will be seen that, on screwing either section of the center-piece into its socket, by the male thread *d* entering the female thread *a*, the conical screw-plug *e* of said section is made to worm its way into the wooden pump-rod, and, in doing so, to swell or spread it, so as to cause it to fill and bind within the tapering portion of the socket.

This conical plug, being of a screw-form or character, establishes a much better hold of or on the rod than does a plain wedge or plug, and, being part and parcel of the wedge itself, there is less liability of the rod getting loose by shrinking than where a smooth and separate wedge is used; also, when necessary to alter the length of a rod, or to insert a fresh one, it is only requisite to unscrew the socket from the center-piece, which brings the wedge or conical plug out also, while, where the rod is secured by a loose wedge, the unscrewing of the coupling leaves the wedge in the rod, which has to be sawed in two, and the portion remaining in the socket burned out, before the socket can again be used.

Furthermore, by the center-piece constructed as herein described, increased facility is afforded for putting the rods together and taking them apart; also, each rod-section, with its portion of the coupling attached, is complete in itself, at both or opposite ends, ready for attachment to another section, whereas, by an undivided center-piece, and loose wedge arrangement, only one end of a rod-section is or can be in a finished condition, so far as attachment of the coupling is concerned.

What is here claimed, and desired to be secured by Letters Patent, is—

The coupling or male and female screws C C', provided with parallel screws *d* and tapering screws *e*, for connecting them with the ferrules A, and at the same time expanding the rods within said ferrules, substantially as shown and described.

HENRY DE ZAVALA.

Witnesses:

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