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W. WERNER

1,608,873

SUCKER ROD GUIDE

Filed Dec. 13, 1924

Fig. 1.

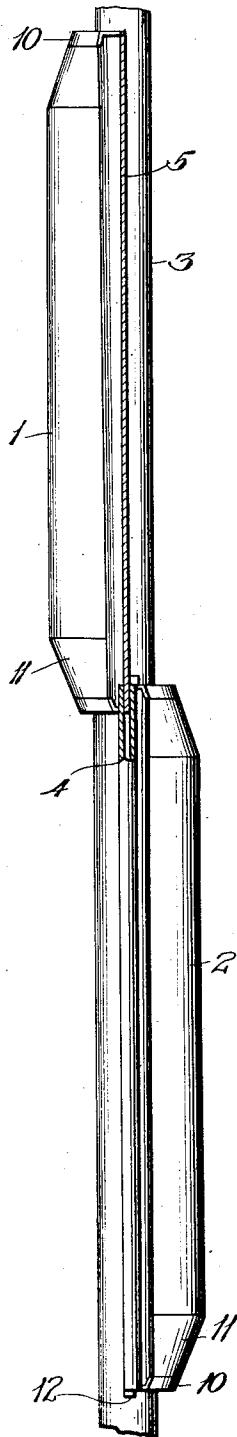


Fig. 2.

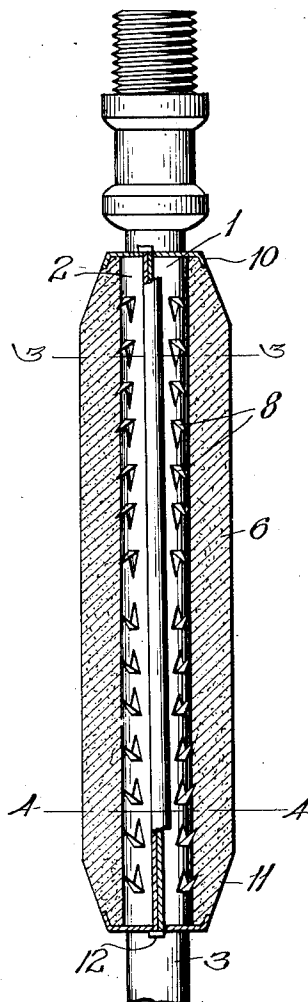


Fig. 3.

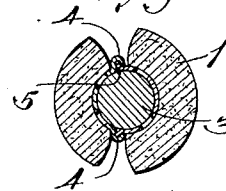


Fig. 4.

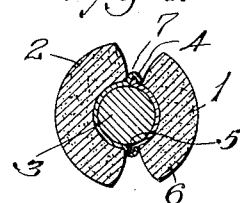
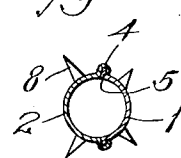


Fig. 5.



William Werner Inventor.

By Jesse R. Stone atty.

UNITED STATES PATENT OFFICE.

WILLIAM WERNER, OF MEXIA, TEXAS, ASSIGNOR TO MEXIA PLANING MILL COMPANY, OF MEXIA, TEXAS, A CORPORATION OF TEXAS.

SUCKER-ROD GUIDE.

Application filed December 13, 1924. Serial No. 755,786.

My invention relates to improvements in sucker rod guides to be employed upon pump rods during pumping operations to prevent wear upon the tubing.

5 It is an object of the invention to provide a sucker rod guide which may be made in a plurality of parts which may be easily clamped together about the sucker rod, as desired.

10 Another object is to provide a guide of the character described which may be firmly attached to pump rods of slightly varying diameter. It is also an object to construct a guide which will be of insulating material, thereby avoiding the difficulties sometimes arising from electrical disturbances set up by the friction between the metals.

15 It is another object to provide a sucker rod guide which will allow the passage therethrough of the fluid being pumped, and to connect the parts comprising the body of the guide in such manner that the attaching construction will not be exposed to wear.

Referring to the drawing herewith, Fig. 1 is a side elevation of my guide shown as being in position for assembly upon the rod, certain parts being broken away for clearness. Fig. 2 is a broken side elevation of a sucker rod showing my guide thereon with the body thereof in central longitudinal section, the attaching means being shown broken to better disclose the construction thereof. Figs. 3 and 4 are transverse sections of the planes 3—3 and 4—4, respectively, of Fig. 2. Fig. 5 is a transverse section showing the inner attaching shell upon which the guide is mounted. Like numerals of reference designate like parts in all the views.

20 In constructing my improved guide, I contemplate forming an approximately cylindrical shell of metal or other rigid material, and constructing upon the shell thus formed a body composed of some composition such as rubber, papier-mâché, or any other similar composition which can be moulded or cast upon the shell and allowed to set in that position to form the body thereof. The material should be of some electrical insulating material so as to prevent the setting up of electrical currents through friction.

25 I have shown in the drawing a shell of metal made up of two connecting parts, 1 and 2. These two parts are formed to interfit at their margins in such manner as to be

slidable longitudinally relative to each other so as to be clamped upon a sucker rod 3. In order to accomplish this clamping action, one part 2 is formed at its longitudinal margins with a curved portion 4 forming an inner groove to receive a flange or tenon 5 upon the cooperating part 1. This construction will be readily understood by references to the drawings. To accomplish the clamping action with this construction, the two halves of the cylindrical shell 1 and 2 are made smaller at one end than at the other; that is, the line of connection between the two halves is inclined slightly relative to the longitudinal axis of the sucker rod, as will be noted on examination of Figs. 1 and 2. Thus, when the parts are to be fitted together in clamping engagement about the sucker rod, the ends will be moved longitudinally together, as shown in Fig. 1, the small end of one engaging the large end of the other, and due to the tapering of the interfitting parts, when they are shoved together into the position shown in Fig. 2, they will be drawn against the sucker rod 3 tightly. The curve formed in the part 4, and the tongue 5 fitting therein, are curved somewhat outwardly away from the body of the shell so as to allow a certain amount of flexibility so that when they are clamped together there will be a resilient engagement between the shell and the sucker rod. This will adapt the device to be clamped to sucker rods of slightly varying diameter, as are now found in sucker rods manufactured by different companies, thus allowing the guide to be used on any ordinary type of sucker rod.

The body portion 6 of the guide is formed upon the shell just described in approximately cylindrical shape. As will be seen from Figs. 3 and 4, however, the body portion will be tapered from one end to the other so as to allow a slot or space 7 between the adjacent parts from one end to the other. This formation of the body portion allows access at all times to the joint formed between the connecting parts of the shell, and also allows a passage for liquid upwardly from the well during the operation of the pump. In order to hold the body portion firmly upon the shell, it is contemplated that the said shell will be provided with projections thereon around which the body portion may be moulded. I have shown the projections 8 on the shell as being formed by

cutting pointed openings in the shell, and bending the metal of the shell outwardly to form such projections in an obvious manner. These projections are inclined preferably toward the middle point of the shell so as to better provide against movement of the body portion thereon in either direction. While I have shown projections or prongs provided in this manner, I wish it understood of course that the surface of the shell may be roughened in any manner desired.

To also assist in maintaining the body portion upon the shell at 10 I provide a small ferrule over the tapered ends 11 of the body portion. Furthermore, in order to prevent movement of the two halves of the guide relative to each other after they have been assembled, I extend the metal on one of the parts at each end adjacent the margin to form a tongue 12, which, when the parts are in assembled position, may be bent over as shown in Fig. 2, to fit around the end of the adjacent section, and prevent movement of the same relative to the first mentioned part.

As will be obvious, the guide thus formed may be made very cheaply, and the two halves forming the guide may be assembled on the sucker rod in a very expeditious manner in any point along the rod where it is desired to secure the same. Although I have shown the body of the guide as being made up of some particular composition, it is obvious that it may be made of wood impregnated with water proofing material secured upon the shell in any desired manner, without departing from the spirit of the invention, and in either case the construction will be a cheap and economical one in that the means by which the guide is secured to the rod are not in contact with the tubing or other pipe in which it operates, but is protected therefrom in the manner shown. The guide may therefore be used in operation until the body portion itself is nearly worn away before it will be necessary to discard the guide.

The further advantages of the device will be apparent to one skilled in the art without further description.

What I claim as new, and desire to protect by Letters Patent is:

1. A guide of the character described comprising longitudinal sections shaped to fit about a rod, and an inner cylindrical shell to which said sections are secured, said shell being constructed to clampingly engage a rod.

2. A guide of the character described comprising longitudinal sections of non-metallic material, a longitudinally divided

metallic shell, means securing said sections to said shell, and cooperating means on adjacent edges of said shell adapted to slidably engage with each other to clamp said shell to a rod for the purpose described.

3. A guide of the character described comprising a shell longitudinally divided along lines slightly inclined from the longitudinal axis, marginal flanges on the longitudinal edges of one part, marginal grooves along the adjacent edges of the cooperating part, the two parts being thereby adapted to clampingly engage a rod, and guide sections secured upon said shell.

4. A guide of the character described comprising two longitudinal sections of non-metallic material each secured upon a semicylindrical shell section, tongue and groove connecting means along the meeting edges of said shell sections, said shell sections being smaller at one end than at the other, whereby the said tongue engaging in said groove will cause said shell sections to clampingly engage a rod when they are assembled in the manner stated.

5. A guide for rods comprising two longitudinal sections sector shaped in transverse section, tongue and groove connections along the meeting edges of said sections, whereby the sections may slidably engage with each other, said sections each being wider at one end than at the other for the purpose described.

6. A guide for rods comprising two longitudinal sections of electrically non-conducting material, semicylindrical shells upon which said sections are secured, and tongue and groove connections at the longitudinal edges of said shells to clamp said shells to a rod when slidably engaged.

7. A sucker rod guide comprising a plurality of longitudinal sections adapted to fit about a sucker rod and resilient tongue and groove means along the adjacent edges of said sections shaped to inter-fit, and serve as a clamping means to secure said sections frictionally upon said sucker rod.

8. A sucker rod guide comprising a plurality of longitudinal sections having grooves on their inner faces to fit about said rod, and connecting means along the meeting edges of said sections adapted to force said sections frictionally into contact with said sucker rod when said sections are moved longitudinally relative to each other into locking engagement with each other and said rod.

In testimony whereof I hereunto affix my signature this 6th day of December, A. D. 1924.

WILLIAM WERNER.