

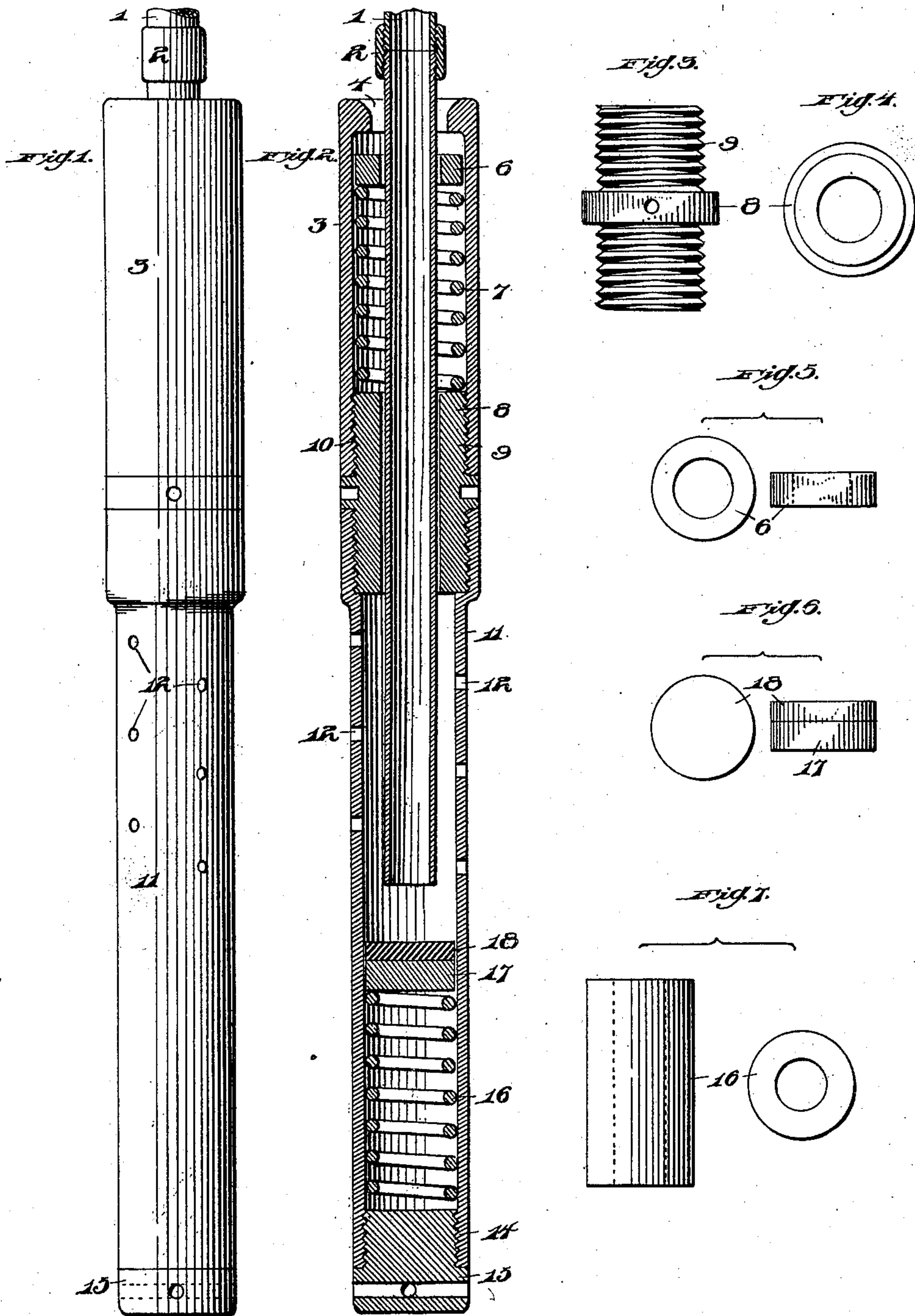
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G. F. TAIT.
TUBING PROTECTOR FOR OIL WELLS.

(Application filed Sept. 20, 1901.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE F. TAIT, OF McDONALD, PENNSYLVANIA.

TUBING-PROTECTOR FOR OIL-WELLS.

SPECIFICATION forming part of Letters Patent No. 690,676, dated January 7, 1902.

Application filed September 20, 1901. Serial No. 75,744. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. TAIT, a citizen of the United States of America, residing at McDonald, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Tubing-Protectors for Oil-Wells, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in tubing-protectors for oil-wells, and has for its object the provision of novel means whereby in case of a sudden jar the end of the tubing in an oil-well or
15 Artesian well will be cushioned, thereby preventing the stripping of the threads or the bending of the tubing.

It often occurs when operating oil or Artesian wells that the end of the tubing by reason of a sudden jar will become bent or otherwise injured; and it is the object of the present invention to overcome all such difficulties and to provide an anchor at the lower end of the tubing that will take up and effectively cushion the jar.

Another object of the present invention is to provide an anchor at the lower end of the tubing at the bottom of the well below the working barrel that will be extremely simple
30 in construction, strong, durable, and comparatively inexpensive to manufacture.

With the above and other objects in view the invention consists in the novel combination and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

Figure 1 is a side elevation of my improved tubing-protector for oil-wells. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a side elevation of the union or coupling. Fig. 4 is a top plan view thereof. Fig. 5 is a plan and side elevation of the upper sleeve arranged in the anchor. Fig. 6 is a top and side elevation of the washer. Fig. 7 is a side and top elevation of a modified form of the buffer.

In the drawings the reference-numeral 1

indicates an oil-well tubing, which is formed in sections and is coupled by means of a coupling 2. The reference-numeral 3 represents
55 a cylindrical upper casing forming a portion of the anchor, said casing having a central opening 4 formed therein, said opening having, preferably, a flared mouth.

The reference-numeral 6 represents an upper sleeve arranged in said casing, through which the tubing extends. A spiral spring 7 encircles said tubing between the lower face of the upper sleeve 6 and the upper face of the union 8, this union 8 carrying exterior
65 screw-threads 9, engaging screw-threads 10, formed in the lower portion of the interior walls of the casing 3. The union 8 also serves to couple the lower cylindrical section 11 of the anchor, said section having openings 12
70 formed therein to allow the oil to enter the anchor and the tubing 1. The lower extremity of the said section 11 is interiorly screw-threaded, as shown at 14, to receive the screw-threaded plug 15. Upon said plug is arranged
75 a spiral spring 16, which acts as a buffer and carries on its upper end a metallic washer 17 and a flexible washer 18 to cushion the end of the tubing 1.

The operation of my improved tubing-protector for oil-wells is as follows: In case there is a sudden jar of the tubing 1 the coupling 2 will ride into the upper casing 3, depressing the sleeve 6 and contracting the spring 7. Simultaneously with this operation the end
85 of the tubing will come in contact with the flexible washer 18, depressing the same and contracting the buffer-spring 16, thereby taking up the jar and preventing the stripping of the threads or the crinkling of the tubing,
90 as would otherwise result.

The many advantages obtained by the use of my improved device will be readily apparent from the foregoing description, taken in connection with the accompanying drawings.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a tubing-protector for oil and Artesian wells, the combination of tubing, cylindrical

casings surrounding the lower end of said tubing, a spring arranged in the upper end of said casing, a sleeve arranged upon said spring, a buffer-spring in the lower end of said casing, and washers arranged on the upper end of said spring, all parts being arranged and operated substantially as described and for the purpose set forth.

2. In a tubing-protector for oil and Artesian wells, the combination of tubing, a coupling secured on said tubing, a cylindrical casing having an enlarged opening formed therein at the upper end thereof, a union interposed in said casing having a central opening formed therein through which said tubing extends, a

spring arranged in the upper end of the said casing above said union, a sleeve arranged upon said spring, a screw-threaded plug secured in the lower end of the said casing, a buffer-spring arranged above said plug in said casing, and a washer arranged in said casing above said buffer-spring, all the parts being arranged substantially as described and for the purpose set forth.

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

GEORGE F. TAIT.

Witnesses:

JOHN NOLAND,
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