

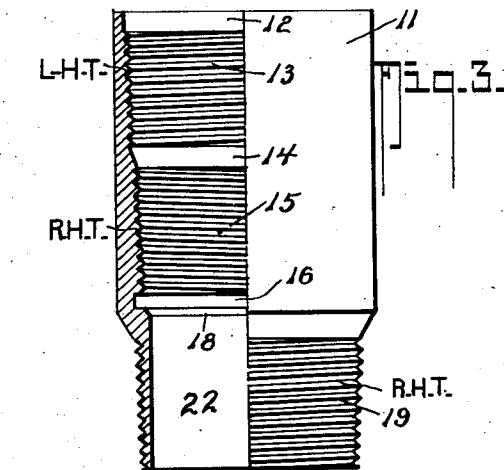
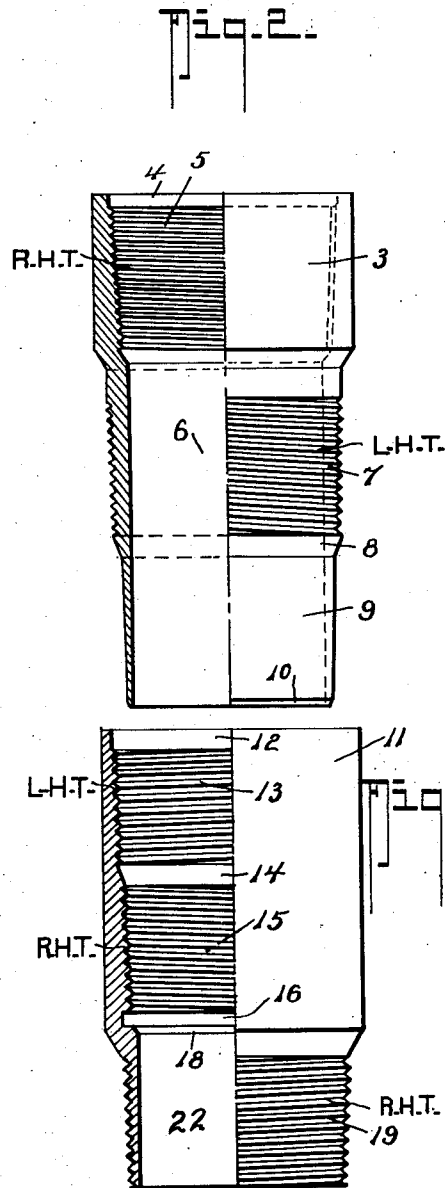
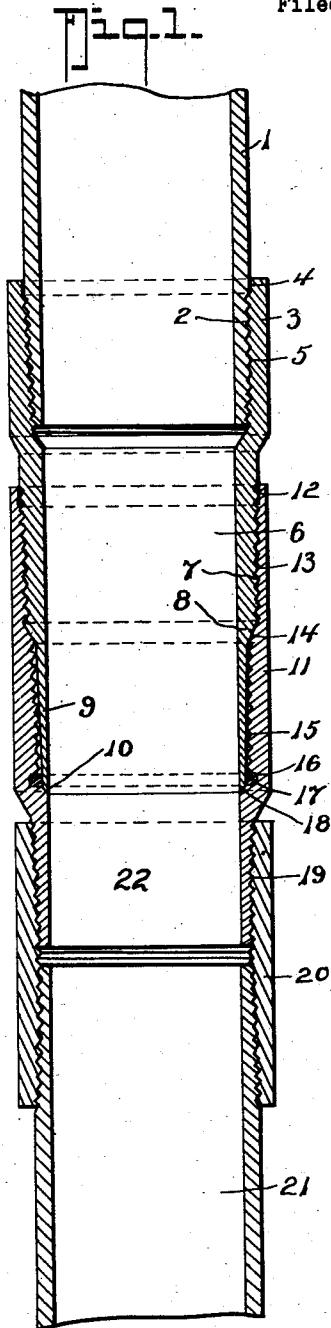
Feb. 8, 1938.

J. C. SINGLETON

2,107,716

WELL CASING SETTING AND BACKING-OFF COUPLING

Filed April 16, 1937



Inventor.

John C. Singleton
Albert E. Dieterich
and
By Theodore H. Rutley
Attorneys

UNITED STATES PATENT OFFICE

2,107,716

WELL CASING SETTING AND BACKING-OFF
COUPLINGJohn Christian Singleton, Vinton, La., assignor of
one-fourth to Ivy Cunniff, Lake Charles, La.

Application April 16, 1937, Serial No. 137,360

7 Claims. (Cl. 255—28)

My invention relates to the setting of casings in oil wells. It has heretofore been the general practice in setting a casing in a well to make up the last joint loose in the coupling so that when the casing has been allowed to set the desired time, the connection may be backed off easily. In such practice it often happens that the threads in the coupling become galled or crossed and difficulty is experienced in breaking the connection, often resulting in backing the casing off several joints below the desired place. To avoid this a tool that is known as a back-off tool is employed; this tool must be made up on a smaller size joint of pipe and run inside the casing below the place at which the casing is to be broken apart so as to hold the bottom joints from turning. This is troublesome and requires additional labor and time. If the threads are burred in coupling where the joint is broken out, it makes it hard to start new threads in it again.

My invention therefore has for its prime object to provide means to overcome the objections above noted.

Generally, the invention comprises a specifically designed right and left hand threaded casing setting tool having a thread protection guide skirt, and a special combination-coupling with two right hand casing threads and a special left hand thread to fit the setting tool and grooved to receive a rubber gasket ring to cooperate with the skirt in protecting the inside or top casing threads of the combination-coupling from dirt and injury.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends the invention still further resides in the novel details of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description, and then be particularly pointed out in the appended claims, reference being had to the accompanying drawing, in which:—

Figure 1 is a vertical longitudinal section of a casing with my invention in use.

Figure 2 is a half vertical section and half elevation of the casing setting tool.

Figure 3 is a view similar to Figure 2 of the combination-coupling.

In the drawing, in which like numbers of reference indicate like parts in all figures, 1 and 21 represent the top and adjacent sections of the well casing which are of the usual construction and have opposing ends right hand threaded.

To the lower one, 21, of the sections 1 and 21

is coupled, by means of a suitable collar 20, the combination-coupling 11 which constitutes an essential part of my invention. This coupling 11 is of three principal inside diameters, the greatest being provided with an internal left hand thread 13, the part of intermediate diameter having the internal (female) right hand casing thread 15, and the part of the least diameter having the external right hand casing thread 19.

The threaded parts 13 and 15 are separated by (preferably) a ground beveled area 14 acting as a seat to be engaged by a corresponding seat 8 on the casing setting tool. At the upper end the coupling 11 may have a smooth entrant wall 12. Just below the threads 15 is a groove 16 to receive a rubber packing ring 17 and below the groove 16 is a beveled seat 18 to be engaged by the corresponding end seat 10 of the setting tool.

The setting tool comprises a body having a bore of two diameters, the larger bore being provided with a right hand casing thread 5 (female). Below the larger end 3 of the tool there is provided a left hand (male) thread 7 to screw into the thread 13, there being a beveled seat 8 below this thread and a skirt 9 with the beveled end 10 below the seat 8. The bore 6 of lesser diameter is like unto that of the casing sections 1 and 21, and the bore of least diameter 22 of the combination-coupling 11. The entrant end of the tool 3 may be smooth as at 4 to facilitate assembling.

In using my invention, the combination-coupling is securely joined by the collar 20 to the last joint (21) or section of the casing and remains there. The tool 3 is screwed onto the lower end of the casing section 1 and tool 3 is then screwed left hand on left hand part of the combination-coupling, i. e., threads 7 are screwed onto threads 13. The casing is then run in the well.

After the casing has set the desired time, a strain is put on the casing and measurement taken to determine the length of space nipple to use between combination-coupling 11 and the casing head. The setting tool (Figure 2) is then backed out of coupling 11 by turning casing section 1 in a right hand direction. This leaves a clean new thread (15) into which to screw the space nipple (not shown). The larger bell-like part 12—13 serves as a guide so that the space nipple will easily enter the special coupling 11.

From the foregoing description, taken in connection with the accompanying drawing, it is thought that the construction, operation and ad-

vantages of the invention will be readily understood by those skilled in the art.

What I claim is:

1. In a well casing setting, the combination
5 with the top casing section of a combination-coupling secured thereto by a threaded connection of one direction, say right hand, said combination-coupling having a female casing thread
10 of the same direction as that of the threaded connection, and having above the female casing thread an enlargement with a female thread of a direction opposite to that of the aforesaid threaded connection, a setting tool comprising an upper portion, an intermediate portion and a skirt constituting a lower portion, said upper portion
15 having a female casing thread of the same direction as that of said threaded connection and said intermediate portion having a male thread of a direction corresponding to that of the enlargement of said combination-coupling, said skirt projecting into and protecting the female casing threads of said combination-coupling when said tool and coupling are assembled.
2. In a well casing setting, the combination
25 with the top casing section of a combination-coupling secured thereto by a threaded connection of one direction, say right hand, said combination-coupling having a female casing thread of the same direction as that of the threaded
30 connection, and having above the female casing thread an enlargement with a female thread of a direction opposite to that of the aforesaid threaded connection, a setting tool comprising an upper portion, an intermediate portion and
35 a skirt constituting a lower portion, said upper portion having a female casing thread of the same direction as that of said threaded connection and said intermediate portion having a male thread of a direction corresponding to that of
40 the enlargement of said combination-coupling, said skirt projecting into and protecting the female casing threads of said combination-coupling when said tool and coupling are assembled, said combination-coupling having a groove with
45 a ring-gasket at the lower end of its female casing thread to cooperate with said skirt to seal off the casing threads against dirt.
3. In the art of setting well casing, a combination-coupling and a setting tool having left
50 hand threaded connection with one another and right hand threaded connection with the adjacent ends of the well casing section, said coupling including a female casing thread and said tool including means to cover and protect said
55 female casing thread when said tool and coupling are assembled.
4. In the art of setting well casing, a combination-coupling and a setting tool having left

hand threaded connection with one another and right hand threaded connection with the adjacent ends of the well casing section, said coupling including a female casing thread and said tool including means to cover and protect said female casing thread when said tool and coupling are assembled, said means comprising a skirt on the tool extending above and below the female casing thread of the coupling and means at the ends of the skirt for sealing off the female casing threads of the coupling.

5. In the art of setting well casing, a combination-coupling and a setting tool having left hand threaded connection with one another and right hand threaded connection with the adjacent ends of the well casing section, said coupling including a female casing thread and said tool including means to cover and protect said female casing thread when said tool and coupling are assembled, said means comprising a skirt on the tool extending above and below the female casing thread of the coupling and means at the ends of the skirt for sealing off the female casing threads of the coupling, said sealing off means comprising beveled seat surfaces.

6. In the art of setting well casing, a combination-coupling and a setting tool having left hand threaded connection with one another and right hand threaded connection with the adjacent ends of the well casing section, said coupling including a female casing thread and said tool including means to cover and protect said female casing thread when said tool and coupling are assembled, said means comprising a skirt on the tool extending above and below the female casing thread of the coupling and means at the ends of the skirt for sealing off the female casing threads of the coupling, said sealing means including a flexible gasket carried by the coupling to embrace the skirt.

7. In the art of setting well casing, a combination-coupling and a setting tool having left hand threaded connection with one another and right hand threaded connection with the adjacent ends of the well casing section, said coupling including a female casing thread and said tool including means to cover and protect said female casing thread when said tool and coupling are assembled, said means comprising a skirt on the tool extending above and below the female casing thread of the coupling and means at the ends of the skirt for sealing off the female casing threads of the coupling, said sealing off means comprising beveled seat surfaces and a rubber ring-gasket embracing the lower end of the skirt and carried by said coupling.

JOHN CHRISTIAN SINGLETON.