No. 722,866. PATENTED MAR. 17, 1903.

P. H. MACK.

DRIVE HEAD FOR PIPE.

APPLICATION FILED DEC. 24, 1902.

NO MODEL.

Fig. 1.

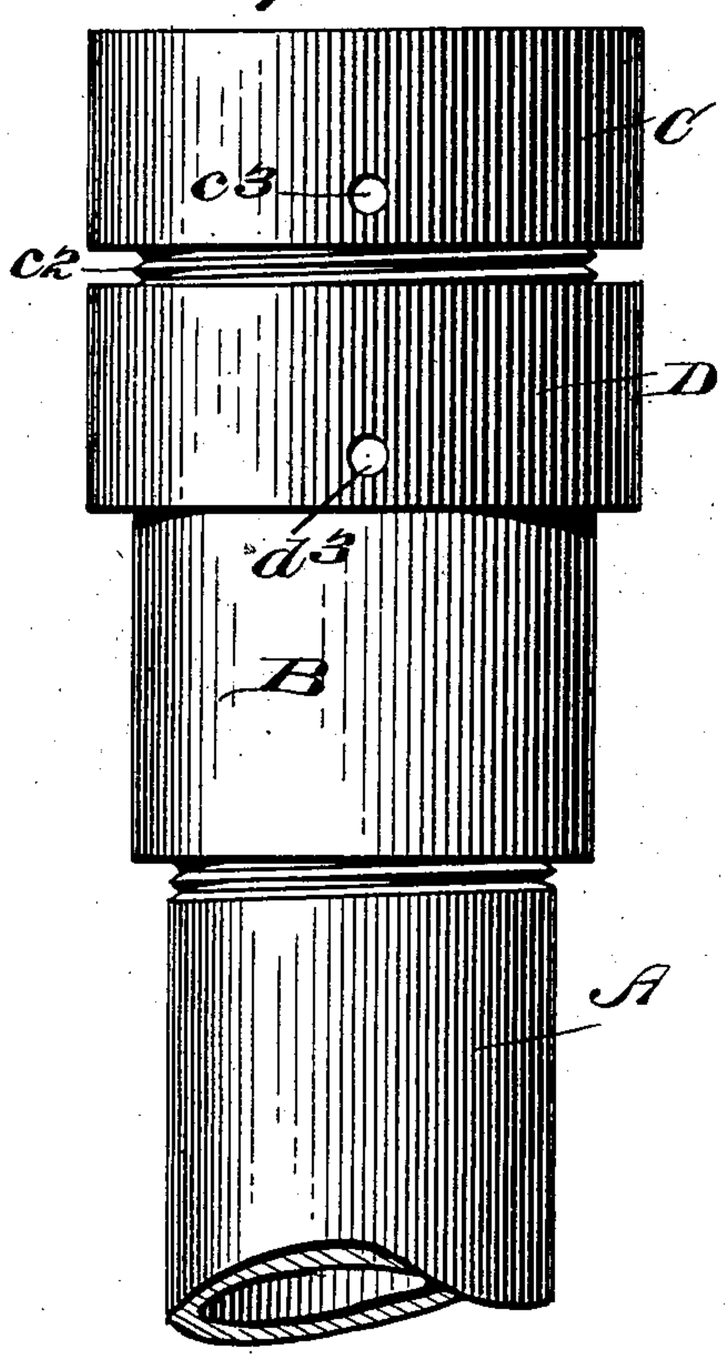


Fig. 2.

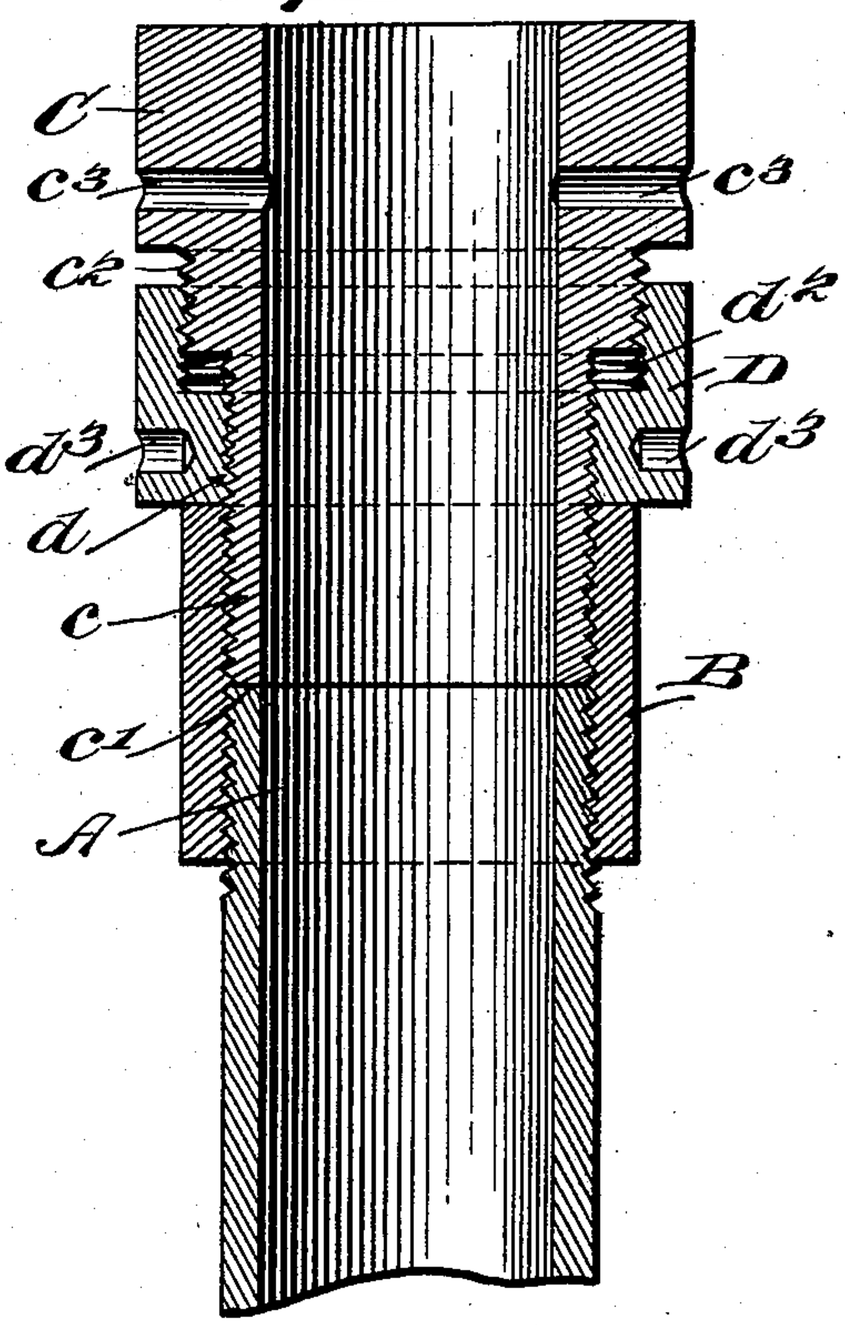


Fig. 3.

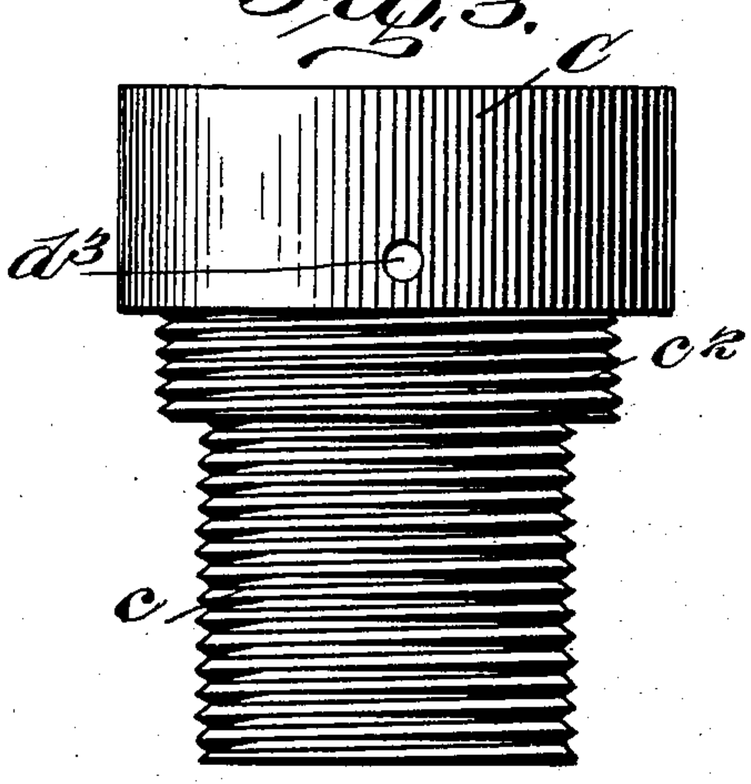
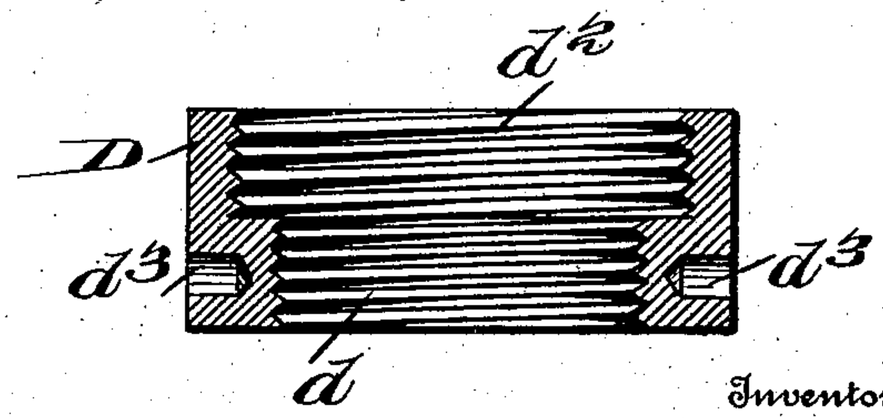


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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DRIVE-HEAD FOR PIPE.

SPECIFICATION forming part of Letters Patent No. 722,866, dated March 17, 1903.

Application filed December 24, 1902. Serial No. 136,475. (No model.)

To all whom it may concern:

Be it known that I, PATRICK H. MACK, a citizen of the United States, residing at Bradford, county of McKean, State of Pennsylvania, have invented certain new and useful Improvements in Drive-Heads for Pipes; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a view in elevation of a drive-head embodying my invention shown in position on the upper end of the drive-pipe and coupling. Fig. 2 is a central section of the parts shown in Fig. 1. Fig. 3 is a view in elevation of the drive-head, the jam-collar removed. Fig. 4 is a detached sectional view of the jam-collar.

Like symbols refer to like parts wherever they occur.

My invention relates to the construction of that class of devices commonly termed "drive-heads," employed in connection with drive-clamps for sinking the drive-pipe of deep wells or as a protection to the coupling in driving the tubing of driven wells, and has for its object to so connect or bridge the drive-head with the drive-pipe as to obviate any upsetting of the drive-head and injury to the coupling by the subsequent withdrawal of the drive-head.

In sinking driven tubing, and especially in sinking the drive-pipe of deep wells or oil-wells, the same is commonly done by means of heavy clamps, termed "drive-clamps," secured to the drill or auger stem, the blow thereof being received on what is termed the "drive-head," which is an annular body having a threaded shank adapted to engage the thread on the interior of the coupling, and the lower end of which shank engages or abuts on the upper end of the drive-pipe within the coupling. As the drive-head has to be removed for the addition of the successive lengths of pipe, the threaded shank or section of the drive-head is necessarily so formed as to be easily unscrewed from the coupling, and as a result of this there frequently occurs a greater or less upsetting of the lower end of the shank of the drive-head and the formation of a bur thereon, which bur tends to injure the thread of the coupling when the drive-head is withdrawn, and thus endangers the connection of the sections of the driven tube. Also the pipe and coupling of different manufacturers frequently differ to such an extent that a drive-head the shank of which will be a proper fit with one will be scant with the other, and in the latter case permit of movement which will induce the upsetting of the end of the shank hereinbefore referred to. To overcome this tendency to upsetting of the lower end of the drive-head shank, I combine with the threaded shank of the drive-head a jam-collar, adapted to engage the upper end of the coupling, thus bridging the drive-head to the drive-pipe, or, in other words, augmenting the threaded connection of the drive-head and drive-pipe, whereby the contacting ends of the drive-head shank and the drive-pipe are relieved of any upsetting force, and such a construction embodies the main feature of my invention.

It is evident that the first-named feature of my invention may be carried out by the application of a jam-collar to the well-known form of drive-head with threaded shank; but as in such cases the strain or force exerted on the threaded shank above the jam-collar would tend to the fracture of the drive-head shank at said point I prefer to increase the diameter of the drive-head shank at its upper portion, or, in other words, I form the drive-head shank with a plurality of externally-threaded concentric sections, and to chamber or enlarge the upper internal diameter of the jam-collar for the reception of the enlarged portion of the drive-head shank, and such a construction embodies a second feature of my invention.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A indicates the upper end of a section of drive-pipe; B, the coupling thereon; C, a drive-head, and D a jam-collar on the shank of the drive-head. The drive-head C has the usual threaded shank *c*, adapted to enter the coupling and engage by its lower end the upper end of the drive-pipe,

as at c', and said shank may be of uniform diameter up to its junction with the head proper, if desired; but preferably I increase the diameter of the shank c for some distance below the point where it joins the head proper, as at c^2, the pitch of the thread on said enlarged portion of the shank being the same as on the portion c.

c^3 indicates holes for the reception of a wrench-bar or spanner for rotating the head.

D indicates the jam-collar, with which the threaded shank c of the drive-head C engages. This jam-collar will be of an internal diameter and threaded, as at d, to correspond with the thread of the shank c of the drive-head, and in case the diameter of the drive-head shank is increased, as at c^2, the jam-collar will have its inner diameter correspondingly increased and threaded, as d^2. d^3 indicates holes for wrench-bar or spanner for rotating the jam-collar.

The drive-head being constructed substantially as hereinbefore pointed out will be used as follows: The coupling B being applied to the drive-pipe A, the shank c of the drive-head C will be screwed into the coupling until its lower end abuts the upper end of the drive-pipe, as at c', after which the jam-collar D is screwed down until it abuts on the upper end of the coupling B. The drive-head being applied to the drive-pipe, as above noted and as shown in Figs. 1 and 2, the force of the blow of the driving-clamps when received on the drive-head C will not only be delivered through the threaded portions of the drive-head shank and drive-pipe, which are immediately connected with the coupling B, but also through the threads of the shank which engage the threads of the jam-collar, and thence through the coupling, and the jam-collar and coupling will thus bridge over the blow from the shank of the drive-head to the drive-pipe and owing to the increased threaded connection, as well as the nature of the connection, will obviate any upsetting contact between the lower end of the drive-head shank and the upper end of the drive-pipe, thus preventing the formation of any bur on the drive-head shank, which would subsequently injure the coupling.

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

1. The combination with a drive-head having a threaded shank, of a jam-collar adapted to engage the coupling of a drive-pipe, substantially as and for the purposes specified.

2. The combination with a drive-head having a shank composed of a plurality of externally-threaded concentric sections, of a jam-collar having internal diameters corresponding with those of the shank, substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 20th day of December, 1902.

PATRICK H. MACK.

Witnesses:
WM. E. DYRE,
HUGH M. STERLING.