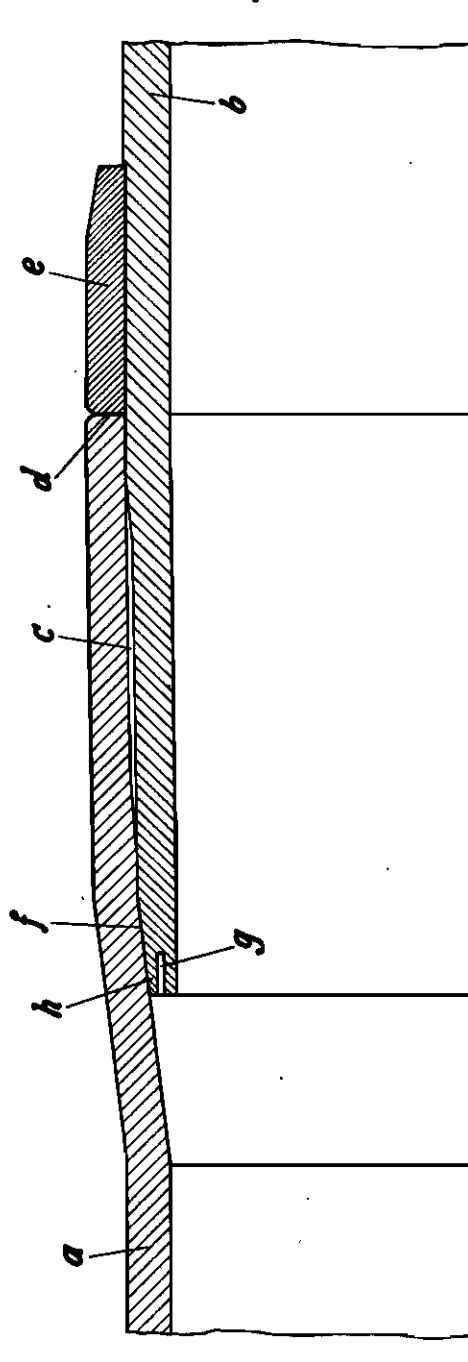


PUBLISHED
MAY 25, 1943.
BY A. P. C.

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CONNECTION FOR BORING TUBES
Filed April 16, 1940

Serial No.
329,945



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ALIEN PROPERTY CUSTODIAN

CONNECTION FOR BORING TUBES

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Alien Property Custodian

Application filed April 16, 1940

At deep boring, for instance for petrol, the bore holes attain ever greater depths. It has been ascertained that the tubes used for lining the bore holes no longer possess at the joints the solidity necessary for the continually increasing depths. The tubes are connected by screwing. The screw threads therefore are standardized, and preferably with flank angle from 55-60° and with 8-10 threads per inch. Such a screw thread possesses the advantage that, when two tube ends are screwed together, a tight connection is produced. This screw thread possesses, however, also certain inconveniences, which become effective particularly when the tubes are used for very deep bore holes. One of these inconveniences is, for instance, that when the tubes are retracted from the bore hole to be employed at another point, it is difficult to disconnect the tubes and to screw them together again. In most instances the screw threads are damaged or destroyed by so-called selzing, whereby the screw thread becomes useless, so that it is necessary to either repair the screw thread or to cut off the screw threaded end of the tube and to cut new screw threads.

One of the chief inconveniences of the screw thread described is, however, that the solidity of the connection is not great enough and it amounts in most instances not to above 50% of the solidity of the tube based on the quality numerals of the tube material.

Attempts have been made to obviate this inconvenience by departing from the prescribed screw thread profile and using a trapezoidal profile. This screw thread permits of repeated screwing of the connections without any serious danger of damaging of the screw thread by selzing. Also the solidity of the connection is substantially higher than otherwise. Such a screw thread has, however, the inconvenience that it does not ensure a tight connection so that it is necessary to use an additional packing consisting mostly of two conical faces which are tightly pressed the one against the other when the connection is screwed home. It is further necessary to avoid, that the connection is screwed beyond a certain limit of screwing up in order that the tube ends are not stressed beyond their stretching limit. This is attained in that the end face of the tube end having internal screw thread bears against a thickening of the tube end with external screw thread.

These conditions are usually fulfilled in that the tube ends are thickened by upsetting, the thickening amounting for instance to double the

5 wall thickness of the tube, and the length of the thickening being approximately double the screw-threaded length. This thickening of the tube ends requires a considerable surplus of work and is connected with high expenses. The quality of the material structure is further impaired by the upsetting work, so that the material in the thickened ends does no longer possess the same good quality properties as those in the smooth portion of the tube. The thickening of the tube ends further has the inconvenience that repairing on the bore fields is not possible in case the repairing makes it necessary to cut off the tube end, because the repair shops on the bore fields are not equipped with installations for upsetting the tube ends.

The object of the invention is to produce a connection for boring tubes with a widened tube end having trapezoidal or similar screw threads and two packing faces which effect packing of the tube ends, when they are being screwed together, and a bearing face on the tube end with external screw thread against which face the end of the coupling box bears tightly at the screwing together, no thickening of the tube ends being necessary.

In the only figure of the accompanying drawing the connection of boring tubes according to the invention is illustrated.

30 The two tubes to be connected the one with the other are designated by *a* and *b*. *c* designates the screw thread on the ends of the two tubes, said screw thread being of trapezoidal or similar cross-section. The end of tube *a* is widened and the end of tube *b* screwed-in so that the inner diameter of both tubes remains the same on the whole length. The widening of the tube end *a* is carried out corresponding to the conicity of the screw thread and to the packing face, so that the reduction of the wall thickness of tube *a* at the cutting of the screw thread and at the working of the packing face is not more than corresponds to the depth of the screw thread. The same is valid for the tube end *b* which is also calibrated according to the conicity of the screw thread. The thickening of the tube end *b* to produce the bearing face *d* is effected by fitting on a ring *e*. This ring can either be welded on or fixed on tube *b* in any other suitable manner. The two packing faces *f* are preferably of different conicity than the screw threads *c*. A slit *g* is provided in the end face of the end of tube *b* so that a lip-shaped extension *h* is produced which permits of elastic yielding of the packing face at the screwing together

of the connection. This yielding of the tube end is desirable in order that in any case screwing together of the tube ends is possible to such an extent that the end face of the widened portion of tube *a* bears against face *d* of the thickening ring *e* even if, owing to inaccuracy at the production, a tube with greater conical surface *f* is

screwed at the end to be inserted into a tube with smaller conical surface *f* at the end facing the coupling box. The bearing face *d* can be produced, instead by the ring *e*, in any other suitable manner, for instance by providing a bead which is produced from the wall of tube *b*.

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