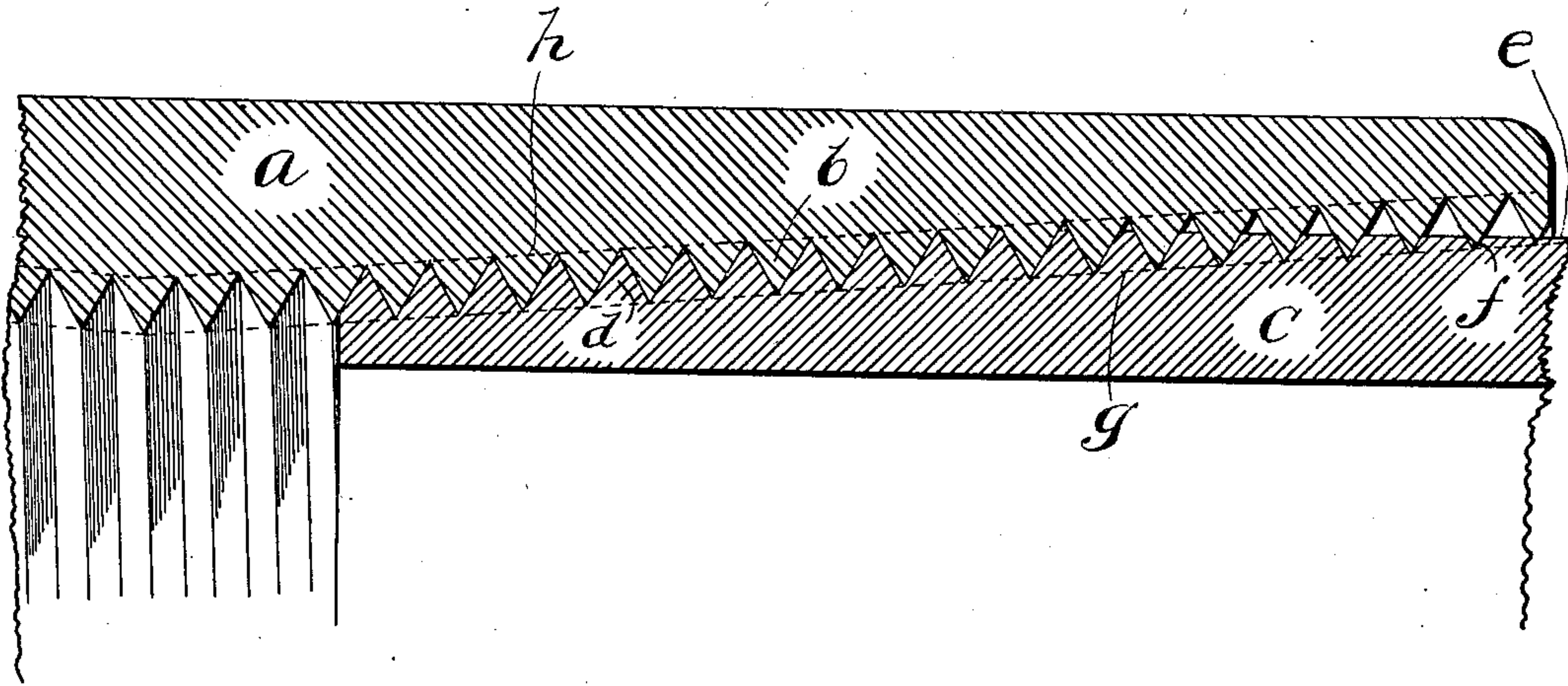


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SCREW COUPLING.

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929,027.

Patented July 27, 1909.



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UNITED STATES PATENT OFFICE.

GEORGE SCHUHMANN, OF READING, PENNSYLVANIA.

SCREW-COUPLING.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE SCHUHMANN, a citizen of the United States, and a resident of the city of Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Screw-Couplings, of which the following is a specification.

My invention relates to screw couplings generally, but more particularly to those employed in connecting oil well tubing and the like, in which the couplings are subjected to special strains due to the heavy weight depending from them and simultaneous vibratory or jarring action, the effects of both of which strains are ordinarily concentrated at the end of the threads as the weakest points in the connected tubing.

The object of my invention is to provide in a simple and effective way for eliminating these points of weakness, for supporting the screw threaded portion of the tubing so as to prevent injurious vibrating action, and for maintaining these conditions and a uniform strain upon the coupling sleeve notwithstanding frequent screwing and unscrewing of the parts.

Couplings have heretofore been made in which the male and female members have each been provided with a vanishing thread cut to a gradually-reducing depth on a conical surface so that the bottoms of successive convolutions lie in one tapering line while the tops of the threads lie in a line of different taper. This construction not only involves the cutting of a special form of thread upon both the male and female members, requiring more than ordinary labor and skill to provide a uniform contact of the threads throughout when the parts are in normal engagement, but owing to such differing tapers the repeated rescrowing together of the parts produces unequally distributed strains in the coupling.

My invention consists in forming an ordinary tapering thread in the female member of the coupling, and a corresponding ordinary thread upon the conical portion of the male member gradually vanishing upon the adjoining cylindrical portion of the latter with the bottom of the thread throughout lying on a straight line parallel with the line joining the tops of the full threads; a uniform taper of the threads upon both members being maintained as usual, and the connecting fe-

male member being extended beyond the conical portion of the male member so that the tops of its threads engage the vanishing thread upon the cylindrical body of the tube, thereby reinforcing the latter up to the uncut portion of the tube, as hereafter fully described and specifically pointed out.

The drawing is a diagrammatic cross-sectional view of a screw-threaded pipe coupling embodying my invention, the uniform taper of the threads being somewhat exaggerated.

The sleeve or female member *a* of the coupling, is provided interiorly, as usual, with a full conical thread *b*, extending its full length as shown though obviously the unthreaded body of the sleeve may be projected beyond the threaded portion, if desired, to guard the end of the thread as is commonly done.

The tube end or male member *c* of the coupling, is also provided as usual with a full conical thread *d* corresponding in form and taper with the interior thread *b* of the female member; but said thread, instead of ending more or less abruptly with the bottom of its end convolution below the cylindrical surface *e* of the body of the tube, is continued as a vanishing thread formed upon the cylindrical body of the tube until the vanishing bottom *f* of the thread, lying always on the straight line *g* parallel with the line *h* joining the tops of the full thread, is blended into the cylindrical surface *e* of the tube.

The threaded female member *a*, when screwed upon the male member *c*, is adapted to effect a perfect thread-contact when the end of the member *a* is projected beyond the conical portion of the member *c* so as to inclose the adjoining cylindrical portion of the tube with the top portions of the end convolutions of its thread engaging the vanishing thread on the cylindrical tube body; so that the latter is rigidly supported by the female member fully up to the uncut portion thereof whereby any vibratory action upon the weakened thread portion is prevented; while at the same time the full tensile strength of the unthreaded tube is retained to withstand longitudinal strains.

A single uniform taper being employed as usual upon both engaging members, not only is a perfect engagement of the threads throughout easily secured, but such engagement, with resulting equalized strains throughout, is insured at all times, no mat-

ter how frequently the joint may be unscrewed and rescrewed; any wear of the threads being uniformly taken up by the further projection of the female member over the cylindrical body of the tube with a continuing close engagement of its full threads with those on the male member to the blending point of the vanishing bottom *f* of the latter with the cylindrical surface *e* of the tube body. To provide for thus engaging the bottom *f* of the extended vanishing thread upon the male member, the length of the female member is made sufficiently greater than is ordinarily required to permit of its fully covering said vanishing thread. But my improvement involves no change in the usual size or structure of the pipe member end such as enlarging the same; or any objectionable departure from the ordinary thread-cutting operation or the thread-cutting tools commonly employed; yet it effectively secures the desired objects of maintaining the tensile strength of the pipe section and eliminating the usual vibratory strains at the terminus of the thread, while insuring a uniform fit of the threads how-

ever frequently the connections may be screwed and unscrewed.

What I claim is:—

1. In a screw coupling a male member having a full screw thread on a conical surface vanishing on an adjoining cylindrical surface, the bottoms of the thread convolutions throughout being on a straight line parallel with the tops of the full threads.

2. A screw coupling comprising a male member having a full screw thread on a conical surface vanishing on an adjoining cylindrical surface, the bottoms of the thread convolutions throughout being on a straight line parallel with the tops of the full threads; and a female member having a screw thread on a conical surface, the top portion only of which thread engages the vanishing thread on the cylindrical surface of the male member.

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

GEORGE SCHUHMANN.

Witnesses:

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