

E.E. & C.T. Packer,

Shaft Coupling,

No 55,895,

Patented June 26, 1866.

Fig. 2.

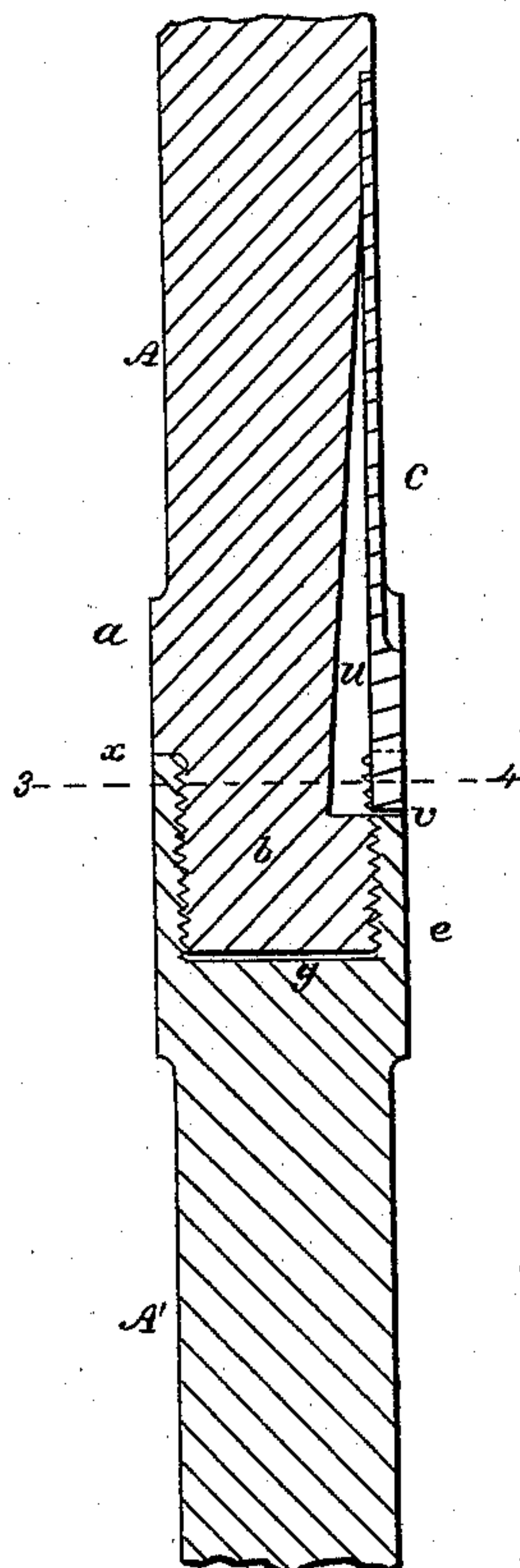


Fig. 1.

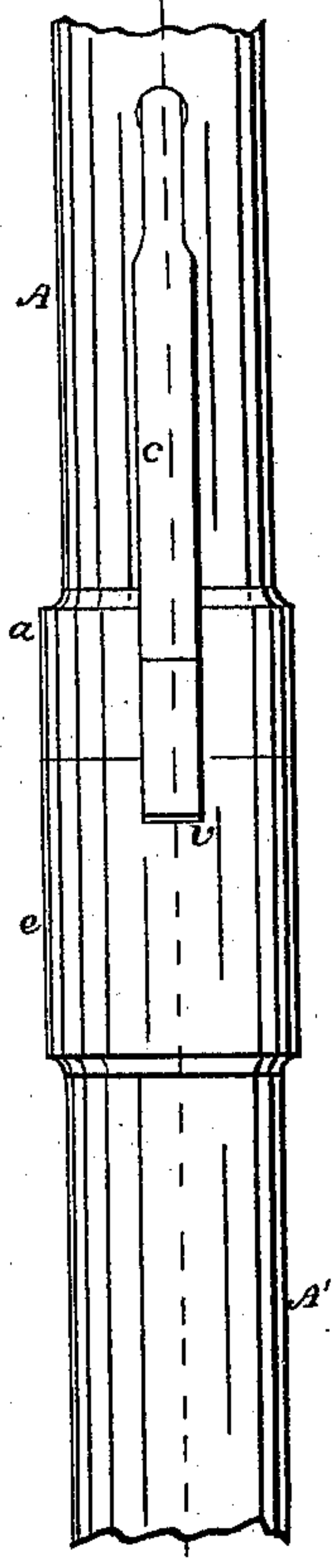


Fig. 3.

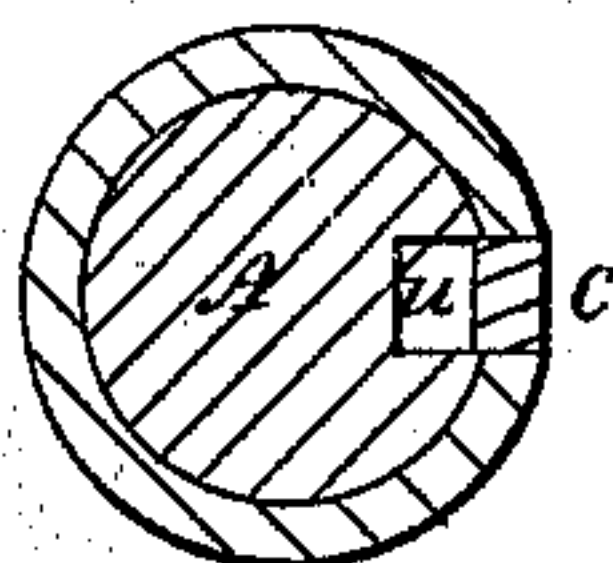
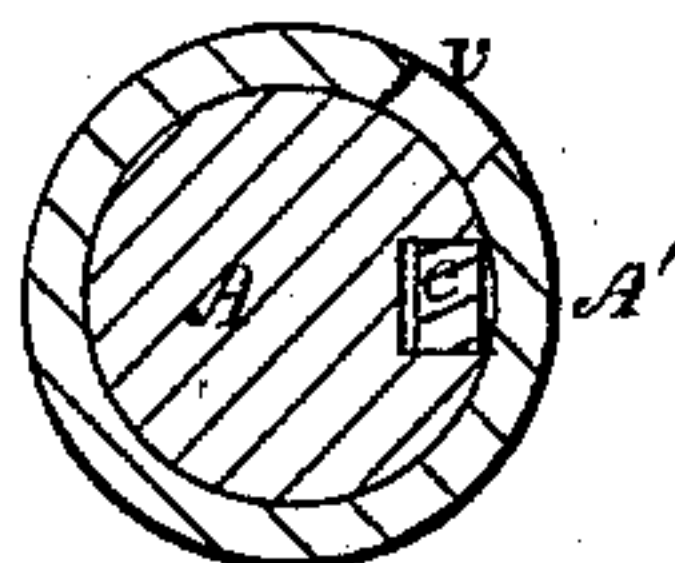


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

EDWARD E. PACKER AND CHARLES T. PACKER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO WM. E. LOCKWOOD.

IMPROVEMENT IN DRILL-COUPPLINGS.

Specification forming part of Letters Patent No. 55,895, dated June 26, 1866.

To all whom it may concern:

Be it known that we, EDWARD E. PACKER and CHARLES T. PACKER, of Philadelphia, Pennsylvania, have invented an Improved Coupling and Retaining Device; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Our invention consists of an external screw having a recess containing a spring-key, in combination with an internal screw having a recess adapted for the reception of the end of the said key, as fully described hereinafter, the whole forming a secure screw-coupling, especially applicable to drill rods and bolts which are subjected to violent jars.

In order to enable others skilled in the art to make and use our invention, we will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is an exterior view, showing the ends of two adjacent rods connected together by our improved coupling; Fig. 2, a vertical section on the line 1 2, Fig. 1, and Figs. 3 and 4 transverse sections.

A and A' are the ends of two rods, the former of which has an enlargement, *a*, terminating at a shoulder, *z*, on the portion *b* of the rod below which is cut a screw-thread adapted to an internal thread in an enlargement, *e*, which forms the termination of the rod A'. In the side of the rod A is a recess, *u*, and in the upper end of the rod A' is a recess, *v*, the two recesses being cut in the rods when the latter are screwed tightly together, so that one recess shall then coincide with and form a continuation of the other. In the recess *u* fits a spring-key, *c*, which is secured at its upper end only, its lower end projecting into the recess *v*. The recess *u* is of such a depth that when the key is depressed into the same its lower end will be below the surface of the rod and entirely removed from the recess *v*, the key, owing to its elasticity, rising to its former position (shown in Figs. 2 and 3) when the pressure is removed.

When the two rods are to be coupled together the key *c* is depressed by any suitable

instrument, and the end *b* of the rod A is introduced into the recess in the end of the rod A', when one of the rods is turned until the shoulder *z* is brought to bear firmly against the end of the rod A' and the recess *u* is in a line with the recess *v*.

The pressure applied to the key is now removed, when its lower end will at once spring outward and take its place in the recess *v*, the outer face of the key being flush with that of the two rods, as shown in Fig. 2.

In boring Artesian wells great difficulty has heretofore been experienced with the screw-couplings of the drill-rods, the constant jars to which they are necessarily subjected causing them to turn and their couplings to be unscrewed, an evil effectually obviated by the coupling above described, inasmuch as the rods cannot be disconnected without the preliminary step of first depressing the key, and this depression cannot be affected by the ordinary jars to which the rods are subjected.

The rods can be readily disconnected by unscrewing, after depressing the key *c*, until its end is removed from the recess *v*.

Although we have alluded to this device as applied to the rods of a well-boring apparatus, it will be apparent that it is equally applicable to bolts from which the nuts are liable to be loosened by continuous jarrings and to various other purposes of a similar character.

We claim as our invention and desire to secure by Letters Patent—

A section having an external screw-thread and a recess in which is a spring spline or feather, in combination with a section having a socket with an internal screw-thread and a slot adapted for the reception of the end of the said spline or feather, the whole being constructed substantially as and for the purpose specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

EDWARD E. PACKER.
CHAS. T. PACKER.

Witnesses:

CHARLES E. FOSTER,
JOHN WHITE.