

UNITED STATES PATENT OFFICE.

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TAPPET FOR DUPLEX STEAM PUMPING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 489,655, dated January 10, 1893.

Application filed July 28, 1892. Serial No. 441,502. (No model.)

To all whom it may concern:

Be it known that I, MOSES M. MOORE, a citizen of the United States of America, residing at Beloit, in the county of Rock and State of Wisconsin, have invented a certain new and useful Improvement in Tappets for Duplex Steam Pumping-Engines, of which the following is a specification.

In the accompanying drawings, wherein like reference-letters indicate like parts, Figure 1. is a vertical section of the engine, with the tappet-mechanism shown in side elevation; and Fig. 2. a vertical section of the tappet, in position on the valve-rod.

In steam-engines, the idea of adjusting the length of stroke of the steam-valve by means of an adjustable tappet-device is an old one; but the means adopted for carrying it into practice have been more or less objectionable—sometimes, by reason of their complexity and cost, and sometimes because they materially weaken the valve-rod, and render it liable to bend or break when in use.

The object of my invention is to produce a tappet-device suitable for the purpose, of simple and cheap construction, readily adjustable without the necessity of uncovering the steam-chest, and not tending in any way to weaken the valve rod.

To this end, my invention consists in the construction which I will now describe, and will more particularly point out in the claim hereto appended.

In the drawings, C. indicates the cylinder; P. the piston; P'. the piston-rod; S. the steam-chest; V. the steam-valve; V'. the valve-rod; L. the lever by which the piston-rod actuates the valve-rod; L'. the arm extending from lever L. to the tappet; and T., my improved tappet-device. The construction of the latter is the subject of this invention, and will be understood from the following description.

On the valve-rod V'. I fit a metal sleeve *t.*, securing it firmly to the rod by pins *a.*, or other suitable means. The ends of the sleeve

are screw-threaded externally, as shown at *t'*., and the intermediate portion smooth, and of uniform dimensions. On this sleeve fits a sliding tubular tappet-block *t².*, provided with a bored lug or lugs *t³.* for connection to the arm L'. On the screw-threaded ends of the sleeve, I screw, at each end, a stout nut *t⁴.*, having, preferably, a buffer *t⁵.* of leather or other suitable material, attached to its inner face. These nuts *t⁴.* can be locked firmly in any required position by means of jam-nuts *t⁶.*, or other equivalent nut-locking device. The length of valve-stroke is adjusted by setting the two nuts, *t⁴.* at greater or less distance apart, and the throw of the valve is adjusted by setting both nuts nearer to, or farther from, the valve.

I am aware that this device has been somewhat approximated in an old device in which the nuts screwed directly upon the valve-rod, which was screw-threaded for that purpose. The practical objections to the old device were that the screw-threading weakened the rod, and that the rod is so small as not to give suitable bearing-surface for the sliding tappet-head—both of which objections are, in my device, obviated by reinforcing the rod with the sleeve, and using the latter as an enlarged bearing.

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

The combination of the valve-rod with the sleeve *t.* fastened upon it, and externally screw-threaded at both ends; the nuts *t⁴.* screwed upon the sleeve, and provided with means for locking them in any adjusted positions; and the tappet-head *t².* fitting and sliding upon the sleeve between said nuts, and actuated from the piston; substantially as described.

MOSES M. MOORE.

Witnesses:

ROBT. TODD,
C. E. GOODWIN.