

(No Model.)

2 Sheets—Sheet 1.

J. H. DALES.

METHOD OF EFFECTING AUTOMATIC ADJUSTMENT OF CONNECTING
RODS, &c.

No. 568,666.

Patented Sept. 29, 1896.

FIG. 1

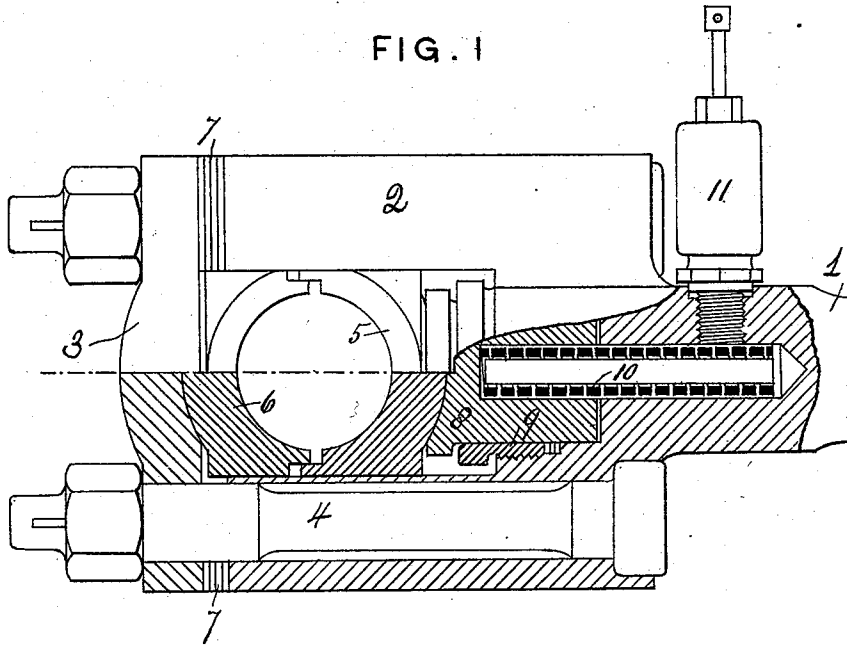
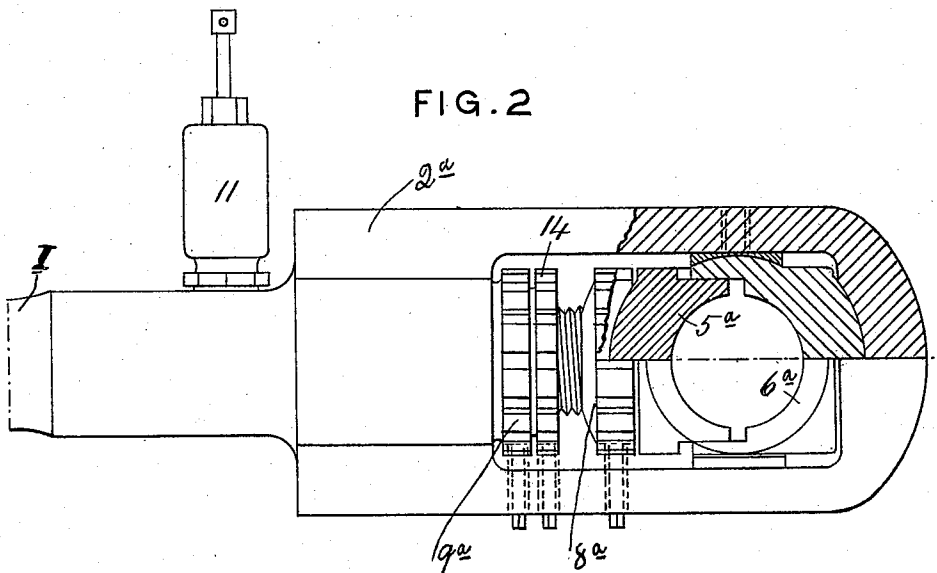


FIG. 2



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FIG. 3

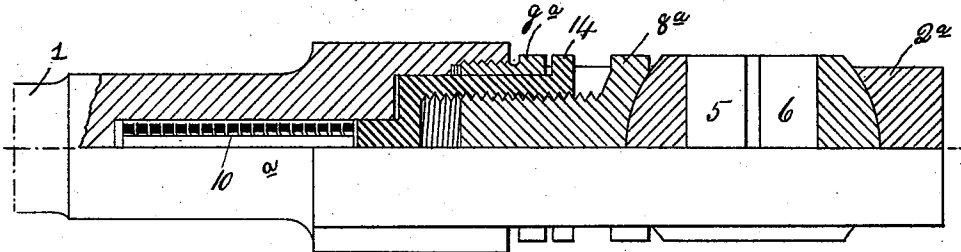
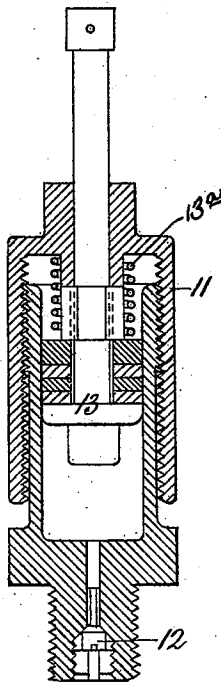


FIG. 4



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UNITED STATES PATENT OFFICE.

JOHN HANDSLEY DALES, OF LEEDS, ENGLAND.

METHOD OF EFFECTING AUTOMATIC ADJUSTMENT OF CONNECTING-RODS, &c.

SPECIFICATION forming part of Letters Patent No. 568,666, dated September 29, 1896.

Application filed March 24, 1896. Serial No. 584,650. (No model.) Patented in England May 17, 1894, No. 9,697, and in France June 28, 1894, No. 237,682.

To all whom it may concern:

Be it known that I, JOHN HANDSLEY DALES, civil engineer, a subject of the Queen of Great Britain, residing at Lofthouse Place, Leeds, in the county of York, England, have invented a new Method of Effecting the Automatic Adjustment of Connecting-Rods and other Bearing-Brasses, (for which I have obtained a patent in Great Britain, No. 9,697, bearing date May 17, 1894, and in France, No. 237,682, bearing date June 28, 1894,) of which the following is a specification.

The object of my invention is to effect the automatic adjustment of connecting-rods and other bearing-brasses, whereby the constant attention now necessary in adjusting bearing-brasses may be dispensed with, my invention being especially applicable to locomotive and other quick-speed engines.

In order that my said invention may be particularly described and ascertained, reference is hereby made to the accompanying drawings, in which similar figures of reference indicate corresponding parts.

Figure 1 is an elevation, partly in section, of the big end of a connecting-rod. Fig. 2 is a similar elevation of the small end of a connecting-rod. Fig. 3 is a plan view of Fig. 2, partly in section. Fig. 4 is a sectional elevation of the vessel 11, drawn to a larger scale.

Referring to Fig. 1 of the drawings, the numeral 1 represents a connecting-rod, 2 the head, and 3 the cap, which is secured to the head by bolts 4, provided with suitable confining-nuts. 5 6 represent the bearing-brasses, 5 being the automatically-adjustable brass, and 6 the outer or non-automatically-adjustable brass, the latter being set up for adjustment of centers by removing or inserting liners 7. 8 is a hydraulic or oil ram by which the working stress on the brass 5 is supported. Hydraulic packing 9 is fitted to the ram. For the purpose of forcing the ram from the cylinder, which is formed in the body of the rod, a sufficiently powerful coil or other spring 10 is placed in a suitable recess or hole either in the rear of the ram or in the body of the rod, or in both, as shown. The effect of this spring is to thrust the ram onto the back brass and the brass onto the bearing-neck on the pulling stroke of the rod when there is no working stress on the back brass. The outward action of the ram, as described, draws into the cylinder a full charge of liquid from

the vessel 11, and, as the vessel 11 is provided with a back-pressure valve 12, which prevents the return of the liquid when the working stress comes onto the brass, the latter is locked in position and the imprisoned liquid sustains the load. In this manner the brasses are automatically adjusted, stroke by stroke, making up for any leakage which may take place past the ram-packing or otherwise. The liquid in the vessel 11 is prevented from churning and becoming aerated and unduly elastic by a piston 13, pressed by spring 13^a, Fig. 4.

In Figs. 2 and 3 of the drawings is illustrated the small end of the rod, and in these figures the reference-numeral 1 indicates the connecting-rod; 2^a, the head; 5^a and 6^a, the bearing-brasses; 8^a, the hydraulic or oil ram; 9^a, the hydraulic packing, and 10^a the ram-spring. This end of the rod is secured in a manner similar to the large end illustrated in Fig. 1, except that a powerful screw 14 is inserted in the ram for the purpose of extending the ram end for closing up the working brasses after they are inserted in the rod-seats.

The bearing-brasses at both ends of the rod are preferably formed spherical, so that in case the engine motion is out of truth the bearings will work without binding when they are adjusted close up.

I claim—

1. In a device for automatically adjusting engine-brasses, the combination with a hydraulic or oil ram, a spring therefor, whereby one of the brasses is pressed forward to take up wear, of a vessel for containing liquid for supplying the ram, a spring-pressed piston therefor and a non-return valve, substantially as described.

2. In a device for automatically adjusting engine-brasses, the combination with a hydraulic or oil ram, a spring therefor, whereby one of the brasses is held to its work and enabled to take up wear, of a vessel for containing liquid for supplying the ram, a spring-pressed piston therefor and a non-return valve, substantially as described.

Dated 10th day of March, 1896.

JOHN HANDSLEY DALES.

Witnesses:

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WALTER J. SKERTEN.