(No Model.)

M. N. LYNN & G. N. WHEELER.

STEAM ENGINE.

No. 315,643. Patented Apr. 14, 1885.

Fig. 1.

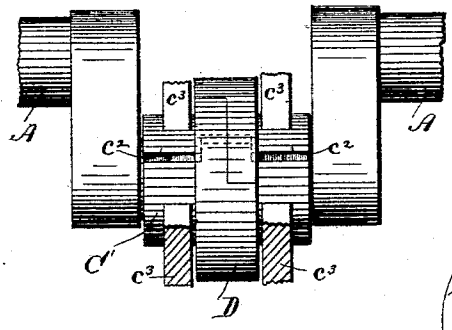


Fig. 3.

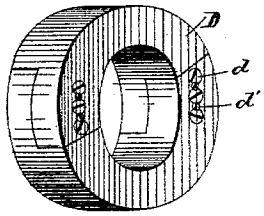


Fig. 2.

Fig. 4.

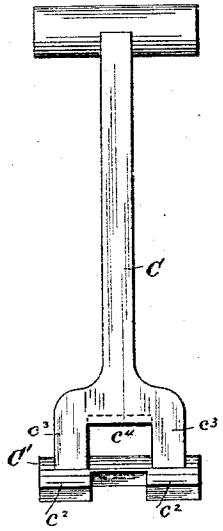


Fig. 5.

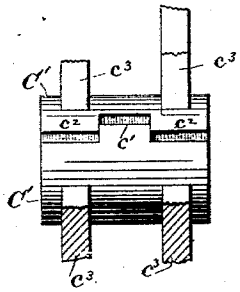
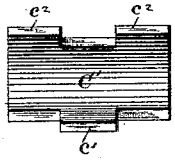


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

MIRABEAU N. LYNN AND GEORGE N. WHEELER, OF AKRON, OHIO, ASSIGNORS TO THE AMERICAN ELECTRIC HEADLIGHT COMPANY, OF INDIANAPOLIS, INDIANA.

STEAM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 315,643, dated April 14, 1885.

Application filed December 23, 1884. (No model.)

To all whom it may concern:

Be it known that we, MIRABEAU N. LYNN and GEORGE N. WHEELER, both of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Steam-Engines; 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, forming a part of this specification, and to the figures and letters of reference marked thereon.

Our present invention pertains more especially to that class of multiple-cylinder engines wherein several pistons are employed to actuate a single main driving-shaft; and it consists, essentially, in the means devised for connecting and applying the several pitmen directly to and upon a single crank, all as hereinafter more fully described, and pointed out in the claims.

In the drawings, Figure 1 is a side view, and Fig. 2 an end view, with a portion of the shaft broken away, of a crank-shaft, illustrating the application thereto of three pitmen. Fig. 3 is a detail showing one form of sectional collar; Fig. 4, one pitman detached; and Fig. 5, the pitmen applied to the crank, the retaining-collar being omitted. Fig. 6 is a bottom plan view of the yoke.

Similar letters of reference in the several figures indicate the same parts.

In the drawings, the letter A designates a main driving-shaft, B the crank or wrist pin applied thereto or formed thereon in any well-known manner, and C the pitmen, two or more in number, forming the connection between the crank-shaft and the several pistons or piston-rods.

In the present instance we have illustrated our invention as applied to a three-cylinder engine, the actuating parts whereof may be of any well-known and approved style.

The several pitmen C for transmitting motion from the piston-rods to the crank are each provided with a head or yoke, C′, which is fitted and applied directly to the crank or wrist pin B. The several yokes C′ are so proportioned relative to the diameter of the crank or wrist pin B as to cover substantially its entire surface, leaving a sufficient space between each yoke to permit the necessary independent lateral motion or oscillation of the pitman incident to the rotation of the crank and the resulting changes in the angle of the pitman. The advantages thus secured are numerous and obvious to those skilled in the art. The thrust of the pitman is at all times directed toward the center of the crank or wrist pin without the intervention of other mechanism, the bearing secured is firm and extended, and each pitman acts entirely independent of the others.

In order to retain and maintain the several yokes in their proper relative position upon the crank, they are furnished with interlocking projections—such, for example, as are shown at c' c^2—the tongue c' on one yoke fitting between the projections c^2 on the adjacent yoke.

The several yokes being applied to the crank, as described, it is essential to the proper operation of the device that some means be employed for retaining the yokes in contact with the crank to prevent their being displaced or thrown off, and for this purpose we prefer to employ a ring or collar, D, arranged to embrace the several yokes, and thereby retain them at all times in contact with the crank or wrist pin. The collar D is made in two sections to facilitate its application, the proximate end of the sections being formed with a lap-joint and secured together by screws or bolts d, to the heads of which it is desirable to apply some kind of locking device—such as screws d'.

The retaining ring or collar D may be applied to both ends of the yokes; but we prefer to employ a single collar, which is fitted to embrace the central portion of the yoke, in which case the pitman C is united to the yoke C′ by two arms, c^3, an opening or space, c^4, to receive the collar D, as shown. By thus attaching the yoke to the pitman not only is ample provision made for the reception of the retaining-collar, but the proper bearing of the yoke upon the crank through its entire length is secured.

We claim as our invention—

1. In combination with the crank or wrist pin, the two or more pitmen provided with semi-annular yokes and applied to the crank,

as described, the sectional ring or collar embracing said yokes and passing through slots or openings therein, as at c^4, substantially as described.

2. In combination with the crank or wrist pin, a series of pitmen, each provided with a semi-annular yoke having interlocking shoulders or projections, substantially as described.

3. In combination with the crank or wrist pin, a series of pitmen, each provided with a semi-annular yoke and interlocking shoulders or projections, the said yokes being applied directly to the crank, and retained in place by a ring or collar, substantially as described.

MIRABEAU N. LYNN.
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Witnesses:
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F. C. BRYAN.