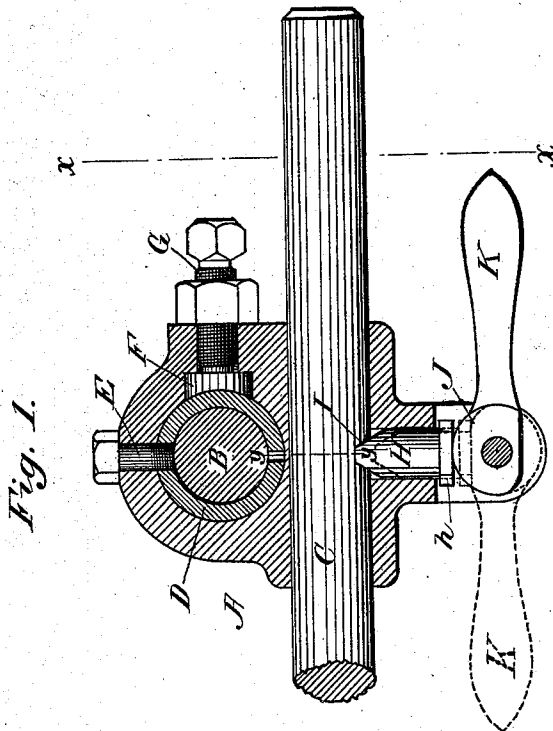
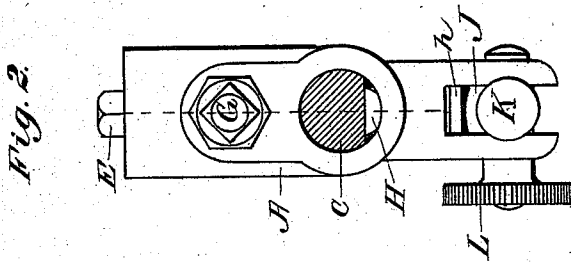


(No Model.)

S. S. BABBITT & A. RANDOLPH.
ECCENTRIC HOOK FOR STEAM ENGINES:

No. 413,641.

Patented Oct. 29, 1889.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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ECCENTRIC-HOOK FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 413,641, dated October 29, 1889.

Application filed July 25, 1889. Serial No. 318,640. (No model.)

To all whom it may concern:

Be it known that we, SEWARD S. BABBITT, of Allegheny, and ALFRED RANDOLPH, of Pittsburgh, both in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Eccentric-Hooks for Steam-Engines, of which the following is a full, clear, and exact description.

Our improvement consists in a device whereby the eccentric-rod which operates the steam-valves of an engine may be more conveniently and rapidly connected with and disconnected from the slide or rocker-arm.

In the drawings accompanying this specification, Figure 1 is a side view of our device, the hook itself being shown in section. Fig. 2 is a side view on the line *xx* of Fig. 1, above and below the rod C, and a section on the line *yy*.

In both figures like letters of reference are used.

A is a block of metal constituting the body of the hook, which has two cylindrical holes, one above the other, the upper one receiving a pin B, which projects from the slide or rocker-arm which operates the valves, and being at right angles to the lower hole, through which passes the eccentric-rod C of the steam-engine, which is of the usual construction and performs its ordinary functions. Within the upper hole is placed a split-ring bushing D, which is prevented from turning by means of the screw E. On one side of the pin-hole is a circular recess, in which is placed a bearing-block F, the inner face of which is curved so as to rest against the bushing, in contact therewith, so that by turning the screw-bolt G, which is tapped into a hole in the side of the block A, the bushing may be readily adjusted.

In the under side of the block A is a hole to receive the cam-bolt H, the end of which is beveled or V-shaped, so as to enter a correspondingly-shaped slot or notch I in the under side of the eccentric-rod C. This bolt H fits loosely in its hole in the block A, so that it may drop by its own gravity when not supported by the cam J. If preferred, a slight spiral spring may be placed around the bolt H, above its head *h*, bearing against the face

of the block A, or placed in a suitable enlargement of the hole, so as to prevent the bolt from sticking and force it down when released by the cam. The cam J is pivoted in a slot on the under side of the block A, as shown in Fig. 1, and has a handle K, by which it is operated, which may be weighted so as to be sufficiently heavy to cause it to drop into a vertical position when not clamped in a horizontal one. A clamping-screw L enables the engineer to set the handle of the cam in a position to release the bolt H and permit it to drop out of the slot in the eccentric-rod C. One side of the cam J is flattened, as shown in Fig. 1, so that when the cam-handle K is turned half round into a horizontal position (shown by dotted lines in Fig. 1) the bolt H is released and has room to drop far enough to clear the notch in the eccentric-rod C.

The operation of our device is as follows: When it is desired to detach the rocker-arm of the engine from the eccentric which operates it, the engineer simply reverses the handle K, bringing the flat side of the cam upward, as shown by dotted lines in Fig. 1. The cam-bolt H then drops and the eccentric-rod is free to move independently of the eccentric hook or block A. As the operative face of the cam J is so shaped as to hold up the bolt H in its position in the notch I, or pressing up against the eccentric-rod C, excepting when its flattened face is turned toward the head *h* of the cam-bolt, it is necessary to fasten the handle K in the position of the dotted lines in Fig. 1 by means of the clamp L. When it is desired to connect again the eccentric-rod C with the hook A, all that is necessary is to turn the clamp-screw L, so as to permit the handle K to drop, which it does by its own weight, causing the beveled bolt H to press up against the surface of the eccentric-rod C, when it will immediately catch into the notch in the latter, thus communicating the motion of the eccentric-rod to the hook A. The handle K may then be raised to the position of the full lines in Fig. 1 and clamped in that position by the screw L, to prevent any accidental detachment of the hook and eccentric-rod.

It will be obvious to any one accustomed to

working steam-engines the steam-valves of which are operated by means of eccentric-rods that the operation we have described is more simple and rapid than that resulting from the use of the ordinary eccentric-rod hook.

It is not absolutely necessary, although we consider it very desirable, that the cam-bolt H should be bevel-edged, or that the eccentric-rod C should be correspondingly notched, as the edge of the bolt might be curved to correspond with the curve of the rod, and the pressure of the cam might be made, by means of an eccentricity on its face, to connect the rod and hook with a sufficient degree of firmness; but in that case it might be difficult to make the connection always at the proper point; hence the advantage of the beveled bolt and notch in the rod.

We claim—

1. In combination with the eccentric-rod and rocker-arm or valve-slide of a steam-engine, a block having a cavity to receive the rocker-arm pin and means of attaching it thereto, a bore for receiving the eccentric-rod, and a bolt and cam for rigidly connecting or disconnecting at pleasure the eccentric-rod and rocker-arm or slide-valve, substantially as described.

2. The combination, as an eccentric-rod

hook, of a block A, having a cavity for the pin of the rocker-arm or slide-valve and means for attaching it thereto, a bore for the eccentric-rod, and a cam J and cam-bolt H, operated by said cam, and a handle K for operating the cam, substantially as described.

3. The combination, as an eccentric-rod hook, of a block A and means of attaching the same to the rocker-arm or slide-valve of a steam-engine, such block having a bore to receive the eccentric-rod, with a cam-bolt entering said bore, and a cam having a weighted handle, constructed and arranged substantially as described.

4. The combination of the eccentric-rod and rocker-arm or valve-slide of a steam-engine, a block A, having means of attachment to such rocker-arm or valve-slide, a bore to receive the eccentric-rod, a bevel-pointed cam-bolt entering said bore, and a cam to operate said bolt, substantially as and for the purposes described.

In testimony whereof we have hereunto set our hands this 9th day of July, A. D. 1889.

SEWARD S. BABBITT.
ALFRED RANDOLPH.

Witnesses:

W. B. CORWIN,
JNO. K. SMITH.