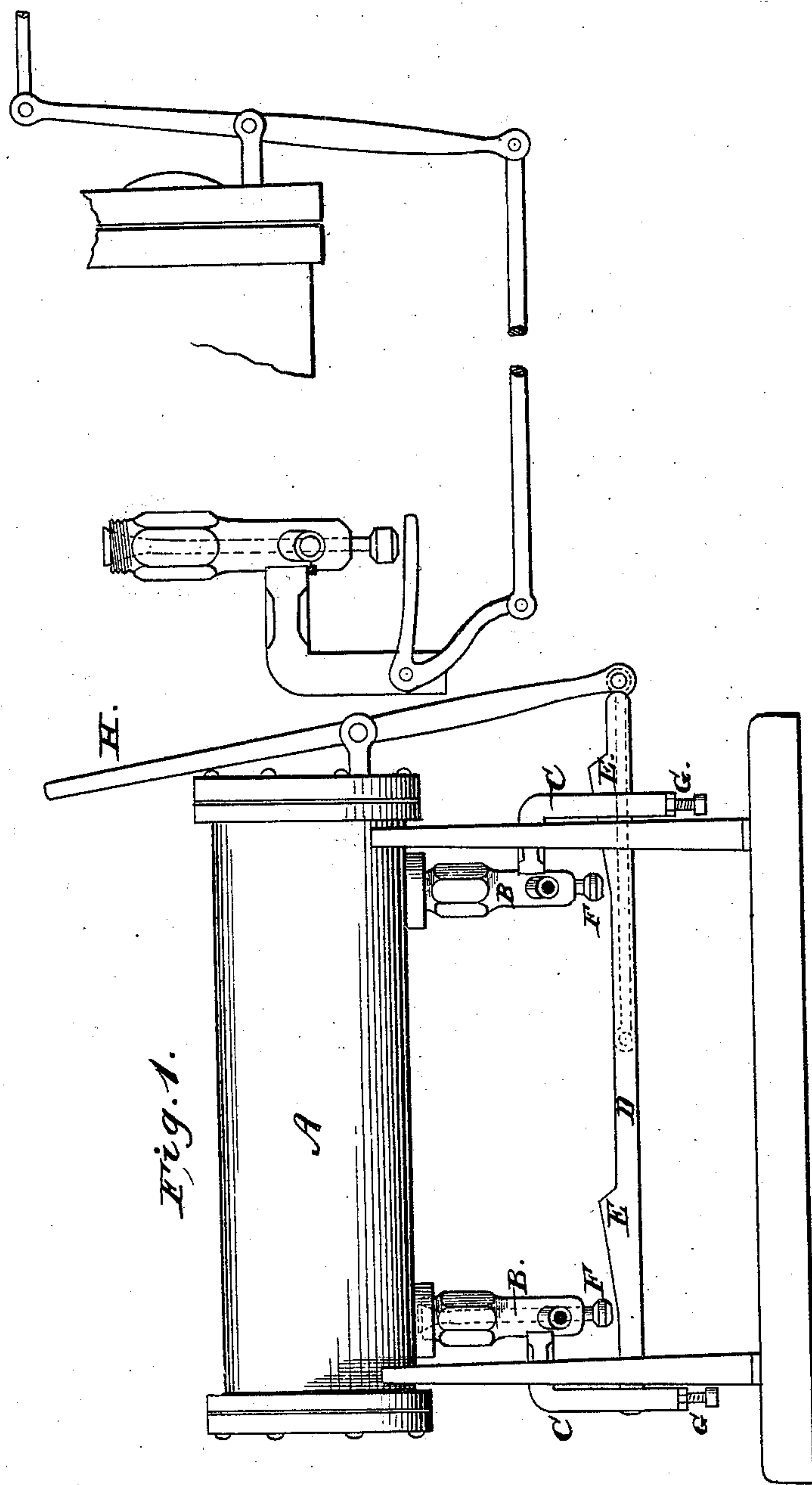


W. H. Woods.
Steam Trap.

N^o 93,509.

Patented Aug. 10, 1869.



Witnesses.

E. B. Derby

E. B. Derby

Inventor.

Wm H. Woods.

By his atty E W Smith.

United States Patent Office.

WILLIAM H. WOODS, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 93,509, dated August 10, 1869.

IMPROVEMENT IN DEVICES FOR OPERATING COCKS OF STEAM-CYLINDERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, WILLIAM H. WOODS, of San Francisco, in the county of San Francisco, and State of California, have invented certain new and useful Improvements in Devices for Working Steam-Cylinder Cocks; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing an improved attachment for working the cocks to steam-cylinders, so that, by one movement, they may be opened and closed without the necessity of the engine-driver leaving the cab or front of the boiler, in order to operate them.

My invention is applicable to all locomotive-engines, as well as stationary, or land and marine engines, and may be employed with good results and much economy in the saving of time and labor.

In order to accomplish my object, I make use of a bar, having an inclined edge, that is placed under the cylinder, and moves back and forth, in slotted pending arms, by means of connecting-rods, extending to the front of the engine or boiler, the pressure upon the lower end of the cock or valve being regulated by a screw and set-nut.

The operation of the incline or eccentric-bar is such, that when in position, the valve of the cock is held to its seat, at the top of the incline, and, by moving the bar in an opposite direction, the valve drops in a manner corresponding with the pitch of the angle of inclination, and allows the steam in the cylinder to escape, and by reversing the motion the cocks are closed, and the valves are held to their seats again.

Referring to the drawings—

Figure 1 is a side elevation of a cylinder with my device attached.

The figures in red, on the same sheet, exhibit another device, by means of which the same object may be accomplished. But I have adopted the one described, as the most simple and effective for the purpose set forth.

A represents the steam-cylinder, which may be supported and attached to the engine in the usual way and manner.

The discharge-cocks B B have no screw-connection with the band, to hold the valve to its seat, but are kept in position by the incline on the bar. At one side of the cock are attached vertical arms, C C, provided with slots, in which moves the bar by which they are worked.

The incline-bar D slides back and forth edgewise in the slotted arms, and the inclines E E are formed near each end, with foot or points in one direction.

The valves F F, of the cock, are placed above the bar, and on a line with the inclines, so that moving the bar in one direction, the valves are pressed home to their seats, and by moving it in an opposite direction to the base, or nearer to the foot, according to the angle of inclination, the valves drop from their seats, and permit the escape of the steam from the cylinder.

Set-screws and check-nuts G G, are placed in the ends of the slotted arms C C, to regulate the pressure on the incline-bar and valves, so that they will open and shut at the same instant.

To the centre of the bar is attached a connecting-rod, from the end of which extends an upright arm, H, which may be pivoted to the cylinder-head, and a connecting-rod extends from this upright arm to the cab of the locomotive, within reach of the engine-driver.

The cocks may be operated at both sides of the locomotive, by the connecting and extension-rods, upon a common transverse bar or rod, placed across the engine. The manner, however, for working the incline-bar, will readily suggest itself to any practical engineer.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

The inclined bars D, slotted arms C C, set-screws G G, and valves F F, arranged as described, and operating in the manner and for the purpose set forth.

In witness whereof, I have hereunto set my hand and seal.

WILLIAM H. WOODS. [l. s.]

Witnesses:

C. W. M. SMITH,
H. S. TIBBEY.