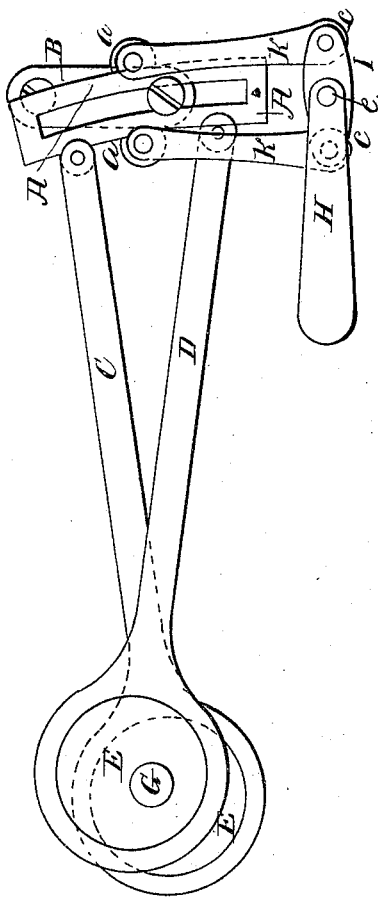


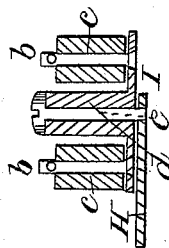
*N. P. Sterens,*  
*Steam-Engine Valve-Gear.*  
*N<sup>o</sup> 52,766. Patented Feb. 20, 1866.*

*Fig: 1.*

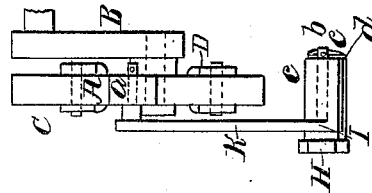


*Witnesses:*  
*Frederick Curtis*  
*G. H. Washburn.*

*Fig: 3.*



*Fig: 2.*



*Inventor:*  
*Nathan P. Sterens.*  
*by his Attorney.*  
*R. H. Eddy.*

# UNITED STATES PATENT OFFICE.

N. P. STEVENS, OF LOWELL, MASSACHUSETTS.

## IMPROVED LINK-MOTION FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. 52,766, dated February 20, 1866.

### *To all whom it may concern:*

Be it known that I, NATHAN P. STEVENS, of Lowell, in the county of Middlesex and State of Massachusetts, have invented an Improved Link-Motion or Mechanism for Steam-Engines; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation; Fig. 2, an end view of it.

In the said drawings, A is the link, and B the valve-crank or lever operated by the said link. C D are eccentric connection-rods; E F, the eccentrics; G, the shaft of such eccentrics, the whole being constructed, arranged, and applied together in the usual manner. With these and the arm H, for raising or lifting and lowering or depressing the link, I have combined a new mechanism for supporting it, the said mechanism consisting of a rocker or short lever, I, and two legs, K K. The said legs are arranged in front of the link and are jointed to ears *a a*, projecting from it, in manner as shown in the drawings. Each of the legs has a cylindrical foot, *c*, extending from it at a right angle and at its lower part and with respect to the link, in manner as shown in Fig. 2.

Journals *b b*, projecting from the rocker I, go through and bear in the feet *c c*, in manner as

shown in Fig. 3, which is a horizontal section of the rocker and the feet of the legs. Furthermore, the rocker has a projection, *d*, extending back from its middle and so as to receive the joint-pin *e*, by which the rocker is connected with the lifter H.

The purpose of my improvement is to maintain the link in its due relation to the rods C D and the lifter H, or prevent it from tipping so as to wear its joints or connections irregularly, as it is apt to do when connected to the lifter-arm by a single rod or in the mode heretofore usually employed.

My improvement has been found in practice to be highly useful, as it completely supports the link and brings the force required for its movement to act so direct with respect to the link as to preserve it in a vertical plane while in action.

I claim—

The arrangement and combination of the rocker I and the two legs K K with the link A and the lifter H thereof, the whole being constructed substantially in manner and so as to operate as specified.

N. P. STEVENS.

Witnesses:

R. H. EDDY,  
F. P. HALE, Jr.