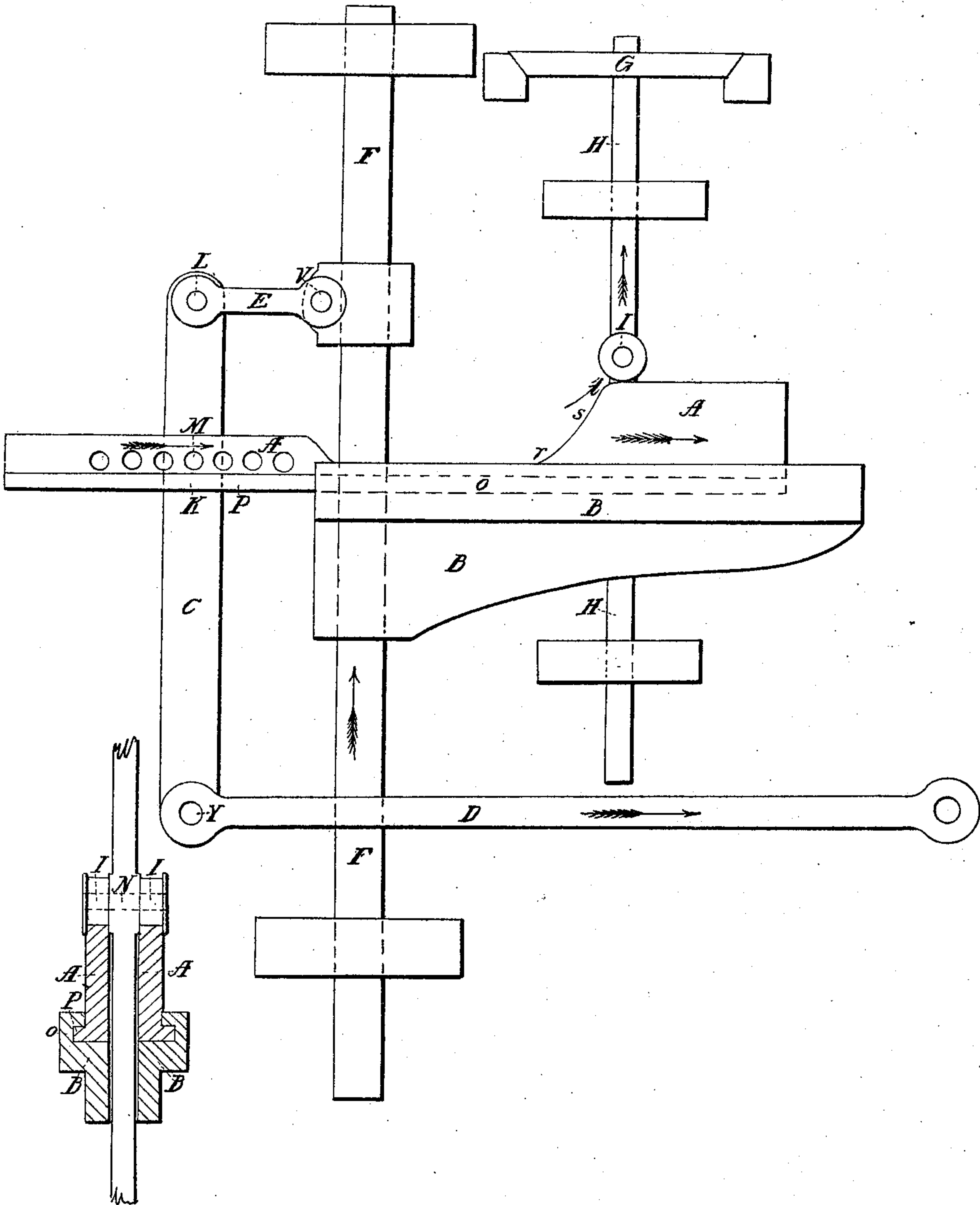


*H. Allen,
Steam-Engine Valve-Gear.*

Patented Aug. 29, 1848.



UNITED STATES PATENT OFFICE.

HORATIO ALLEN, OF NEW YORK, N. Y.

CUT-OFF.

Specification of Letters Patent No. 5,745, dated August 29, 1848.

To all whom it may concern:

Be it known that I, HORATIO ALLEN, of New York, N. Y., have invented new and useful Improvements in Cut-Offs, of which
5 the following is a specification.

The combination which I have invented to form a cut off for steam engines will be readily described by reference to the drawing annexed hereto.

10 F is the lifting rod which is to be raised as usual by the toe on the rock shaft.

G is the steam valve and H the valve stem.

B is an arm fastened on the lifting rod F. On the arm B is placed the sliding piece A
15 the two being adequately connected by the groove *o* and tongue P. On the valve stem H are fastened on suitable centers the two friction rollers I, I'. When the parts are properly adjusted as represented in the
20 drawing, the rollers I, I', just clear the upper straight surface of the sliding piece A, when the valve is in its seat.

As thus far described, the valve G would, on motion being given to the engine have
25 the same motion as the lifting rod F.

To provide for the return of the valve to its seat, sooner than the lifting rod returns to its state of rest, is the object of this invention.

30 The surface *r, s, t*, of the sliding piece A is made about of the shape represented in the drawing.

The vertical lever C is connected with the lifting rod by the link E and centers at L
35 and V as represented.

By means of a pin at M the sliding piece A is connected with the vertical lever C.

The rod D is connected with the lower end of the vertical lever C by a pin at Y. The rod D receives a reciprocating motion, derived from any part of the engine having a motion coincident with that of the piston, and of such range as may be necessary.

If we suppose the engine in motion, and the parts to have the motions indicated by
45 arrows, it will be perceived that as the lifting rod F rises, the sliding piece A will have a motion along the arm B and that the surface *t, s, r*, will be brought under the rollers I, I', and that consequently the valve will be
50 lowered as fast as and when the surface *t, s, r*, will permit. The point of stroke at which the surface *t, s, r*, will allow the valve to return to its seat, will depend on the point of
55 connection between the piece A and the vertical lever C. By changing the pin which connects these to any other hole in A a change in the point of restoring the valve to its seat will necessarily follow.

What I claim is—

60 The introduction of the sliding piece A in combination with the arm B and rollers I, I', on the valve stem and with a motion coincident with that of the piston the sliding piece having a descending surface by means of
65 which the valve is allowed to return to its seat before the end of the stroke, substantially as described herein.

New York, Aug. 17, 1848.

HORATIO ALLEN.

Witnesses:

D. G. WELLS,
J. H. STILLMAN.