

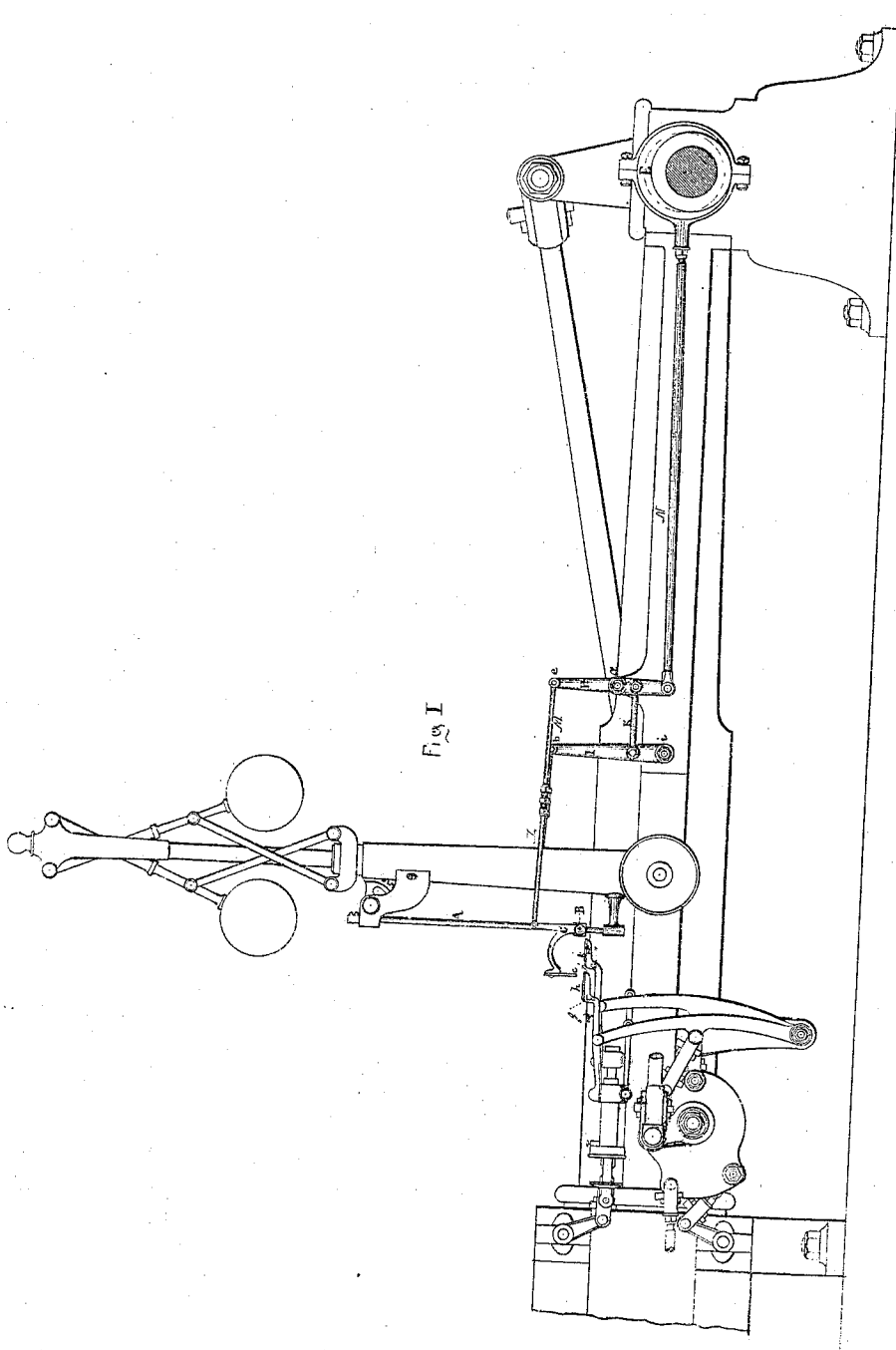
H. Mohr,

2, Stocks, Steeb. 1

Cut Off Valve.

No. 106497.

Patented Aug 16. 1870.



Witnesses.

Chas. A. Schell, Washington D.C.
E. J. Sommer.

Inventor.

Hermann Mohr

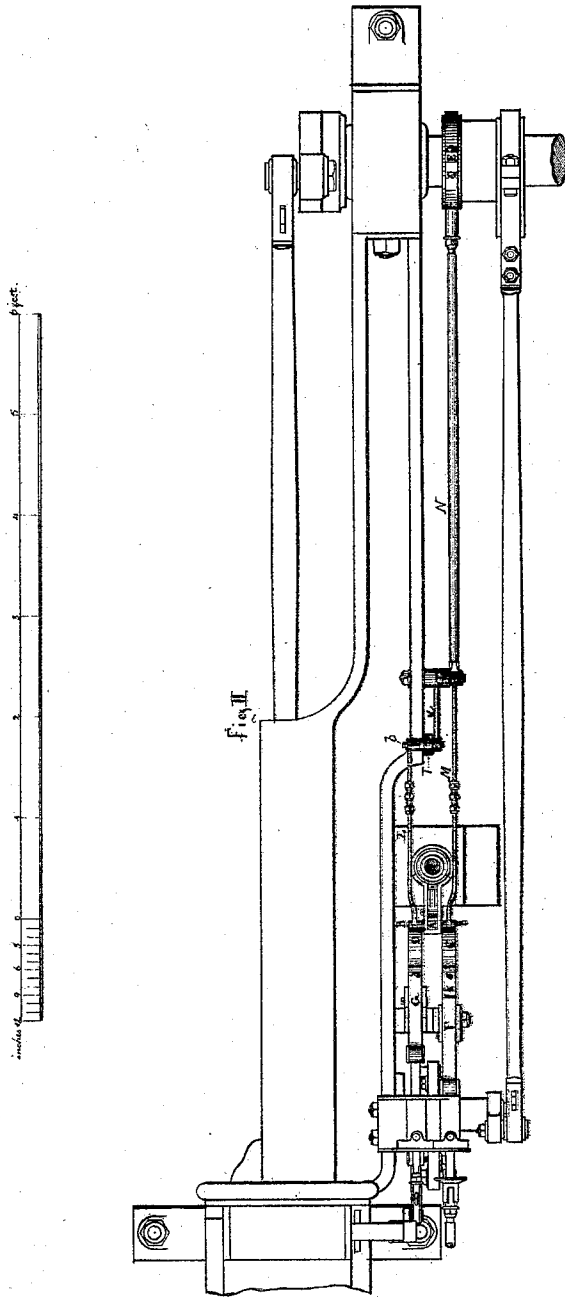
H. Mohr,

2, Sheets, Sheet 2.

Cut Off Valve.

No. 106497.

Patented Aug. 16, 1870.



Witnesses.
Chas. H. Holt
E. J. Sommer.

Inventor.
Hermann Mohr

United States Patent Office.

HERMANN MOHR, OF NEW YORK, N. Y.

Letters Patent No. 106,497, dated August 16, 1870

IMPROVEMENT IN STEAM-ENGINES.

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, HERMANN MOHR, of the city, county, and State of New York, have invented certain Improvements in Steam-Engines, for working steam expansively, of which the following is a specification, reference being had to the accompanying drawings.

As many of the steam-engines constructed to work steam expansively, when set in motion, work with a full head of steam until sufficient speed is obtained to bring the governor to act on the valve-catches, and, therefore, require to be set in motion with great care and attention; and as the effect of the action of the governor on the valve-catches is to cut the steam off at once, often leaving insufficient surplus power for heavy work, either temporary or at short intervals, I have sought to overcome these difficulties by a novel construction and arrangement of mechanical devices, especially applicable to and designed as an improvement on the Corliss steam-engine, for working steam expansively, and others that may be of a similar construction.

In the drawings—

Figure I is a front elevation of my improved engine.

Figure II is a plan of the same.

A is a vertical rod, moving by means of a segment or a lever, with the box of the governor up and down, but in a reversed direction, when the former moves up the latter moves down, &c.

C and D are two liberating devices or pieces, which turn round pins B, fastened on the rod A, and are connected with an eccentric, E, by means of several little rods L, M, and N, and the levers H and I.

These pieces C and D are working upon the valve-catches F and G.

The levers H and I are connected by the rod K in such a manner that the points *b* and *c* have an equal motion, but reciprocal.

Lever H has its fulcrum at *a*, and lever I at *i*.

These pieces C and D are moved by an eccentric, E, which is fastened to the main shaft, and their motion is conformable to that of the piston in the cylinder.

The motion of the points *c* and *d* of the pieces C and D round the pins B must be equal in length to the whole motion of the rod A.

Supposing the rod A can be moved up or down two inches, then the eccentric E must move the points *c* or *d* also two inches.

When the rod A is in its highest position, the pieces C and D will throw the valve-catches out at the end of the piston-stroke, and when the rod A is in its lowest position, the points *c* and *d* do not

come higher than the inclines *f* and *g* of the valve-catches, in order to throw them out, and to permit the valve to return just before the valves would open the steam-ports.

As to the valve-catches themselves, they must have a certain shape, suitable for the pieces C and D to work upon them in the correct manner. The position of the small inclines *f* and *g* is of the greatest importance.

They must be adjusted so that, with the rod A in its lowest position, the points *c* and *d* will just strike them and throw the valve-catches out of action at the proper time after the valves begins to open the steam-ports.

The distances of *h* on the catches must be at least three-fourths of the whole stroke of the rod A, to give the catches sufficient time to catch the valve-stems.

To compensate for the slight irregularities which are produced by the circular motions, the horizontal top *k* of the catches must be slightly curved.

All other parts of the Corliss steam-engine are not affected by the application of my improvement.

It will thus be seen that, by means of my improvement, several important advantages are secured.

The engine can be set in motion without any unusual care or attention on the part of the engineer.

The expansion, when starting the engine, increases gradually, and may be changed, as desired, by the action of the governor.

As this expansion may be increased or changed, the engine becomes more economical and convenient for establishments in which temporary surplus power is required.

When, for instance, two of these improved engines are working coupled, should one of them at any time become unfit for service, the other can be made to do the entire work, which, under ordinary expansion, was performed by both.

It will be further noticed that the governor of my improved engine, in connection with the mechanism for regulating the expansion, works with a variable speed, according to the variable speed of the piston, so that, by a certain change of the position of the governor, the steam-admission period is shortened or lengthened a given amount, irrespective of the degree of expansion under which the engine may be worked, and in this way it will be seen that the expansion is changed with the speed of the piston.

It is obvious that other mechanical devices may be constructed and arranged for combining the motion of the piston and the governor, so as to change the degree of expansion, and hence I do not confine myself to any specific construction and arrangement of devices; but

Having thus described my invention,
What I do claim is—

1. As an improvement in the Corliss engine, for working steam expansively, the liberating devices C and D, when constructed and arranged to be actuated by the speed of the piston and the position of the governor, substantially as herein described and for the purpose set forth.
2. In combination with the piston, main-shaft, and

governor, the rod A, devices C D, rods L, M, N, and K, and eccentric E, when constructed and arranged to operate substantially as and for the purpose set forth.

HERMANN MOHR.

Witnesses:

CHAS. A. SCHOTT,
E. F. SOMMER.