

No. 860,402.

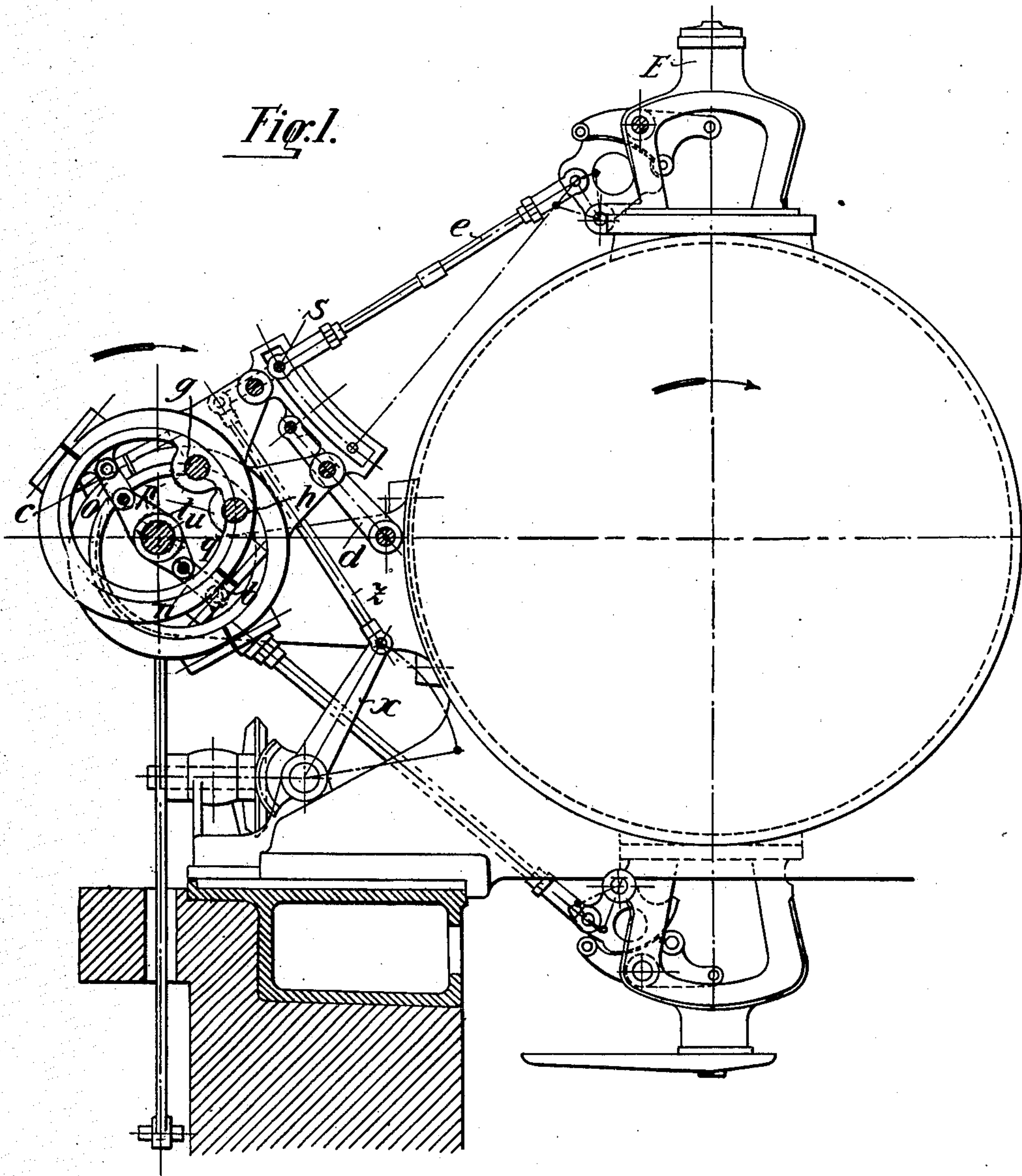
PATENTED JULY 16, 1907.

J. F. MEYJES.
VALVE GEARING.

APPLICATION FILED FEB. 16, 1907.

2 SHEETS—SHEET 1.

Fig. 1.



witnesses:

J. B. Kessler
W. D. Kessler

Inventor
Johannes F. Meyjes
By
James L. Norris
att'y

No. 860,402.

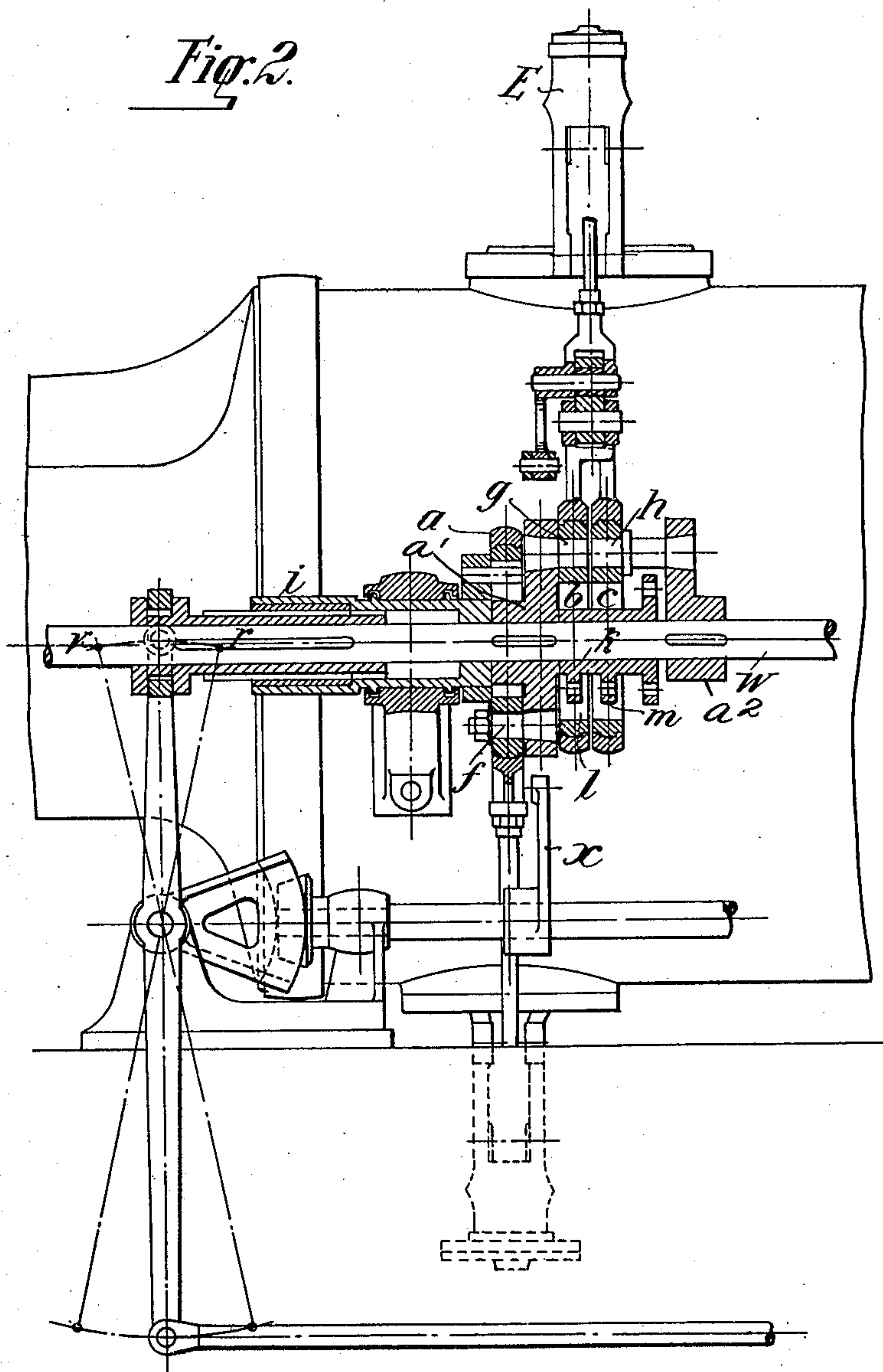
PATENTED JULY 16, 1907.

J. F. MEYJES.
VALVE GEARING.

APPLICATION FILED FEB. 18, 1907.

2 SHEETS—SHEET 2.

Fig. 2.



witnesses:

~~W. B. Kessler~~
C. J. Kessler

Inventor

Johannes F. Mey-jes

By

James B. Norris
1766

UNITED STATES PATENT OFFICE.

JOHANNES FRANZISCUS MEYJES, OF ZWEIBRÜCKEN, GERMANY.

VALVE-GEARING.

No. 860,402.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed February 16, 1907. Serial No. 357,711.

To all whom it may concern:

Be it known that I, JOHANNES FRANZISCUS MEYJES, a subject of the King of Bavaria, residing at Zweibrücken, Pfalz, Bavaria, Germany, have invented certain new and useful Improvements in Reversible Variable-Expansion Valve-Gearing, of which the following is a specification.

This invention relates to reversible valve-gearing and has for its object to obtain any desired variation in the admission or cut-off independently of the release or exhaust during running of the engine.

The ordinary valve-gears in which slide-valves are employed, with early cut-off, give too much compression or cushioning and a too early release or exhaust. It is therefore advantageous to keep the beginning and end of the exhaust constant and, at the same time, in controlling the admission or cut-off, to provide for variations in the load by making corresponding alterations in the admission or cut-off during running. Valve-gears are already known, in which this problem is solved by means of two slide-valves. The present invention provides a new solution of this problem. The reversing lever remains, whereby a motion-block, from which the admission or cut-off is controlled, is moved in a slotted link and the exhaust-eccentric is turned on the shaft, during running, into its end position, so that the compression or cushioning and the release or exhaust thus remain constant. The point at which cut-off takes place or the time during which steam is admitted to the cylinder is however adjusted by turning the two admission-eccentrics without moving the motion-block. The turning of the two latter eccentrics is effected by a separate lever or by a governor. When this motion is not provided, the engine can be immediately controlled by the said reversing lever alone, even during running.

In the drawings—Figure 1 is an end view of the invention; and Fig. 2 is a side view thereof.

For this purpose, there is mounted on the side or countershaft *w*, in addition to an eccentric *a* which drives the exhaust-valve directly, two eccentrics *b* and *c*, the straps of which are pivotally connected to a slotted link carried by a rocking lever *d*. To the adjustable motion-block *s* of this slotted link is pivotally attached the rod *e* of the admission-valve *E*. Said eccentrics *a*, *b* and *c* oscillate about fixed points or pivot-pins *f*, *g* and *h* respectively which are arranged on arms *a'* and *a''* mounted on the shaft *w* so as to turn therewith and projecting in opposite directions therefrom. The position and throw of the eccentric *a* are controlled by means of a sleeve *i*, which is rotatable on the shaft *w* and which has an arm coupled by a connecting rod to said eccentric. The position and throw of the eccentrics *b*, *c* are controlled by means of a sleeve *k* which extends through the said eccentrics and has two lever-like arms *l* and *m*, to which the ec-

centrics are coupled by means of short connecting-rods *n* and *o*. The shaft *w* receives its motion from an engine suitably connected therewith. If now the reversing lever be moved out of the position *v* for example, into the position *r*, the rectilinear motion of the sleeve *i* is converted by means of screw threads into a rotary motion, and thereby the exhaust eccentric *a* is brought from the forward position *v* into the backward position *r* or into any desired intermediate position (Fig. 3). At the same time, however, the motion-block *s*, which is positively connected to the reversing lever in any suitable manner (in the present case by means of the lever *x* and connecting rods *z*), and thus also the admission-valve *E*, are brought from the position corresponding to forward motion to that corresponding to backward motion, together with the sleeve *i*. Then by turning the sleeve *k*, during running, by means of a hand lever or by means of the governor, the two admission-eccentrics *b* and *c* can be turned in opposite directions relatively to each other so that their centers are brought, for example, from the positions *p*, *q* into the positions *t*, *u*, these motions taking place quite independently of the motion of the reversing lever and its connected parts above mentioned. The motion-block *s* thus receives a short travel with large angles of advance and thereby controls the admission or cut-off, i. e. the time during which steam or other working fluid is admitted to the cylinder.

What I claim is:—

1. Reversible valve-gearing for fluid-pressure engines, comprising a countershaft, an exhaust-eccentric on said countershaft, means for turning said eccentric relatively to said countershaft, an exhaust valve actuated by said eccentric, two admission-eccentrics on said countershaft, means for turning said eccentrics relatively to said countershaft, a link driven by said admission-eccentrics, a motion-block carried by said link, an admission-valve actuated by said motion-block, and means for simultaneously adjusting said exhaust-eccentric and said motion-block.

2. Reversible valve-gearing for fluid-pressure engines, comprising a side- or countershaft, an exhaust-eccentric pivotally mounted on said countershaft at a point eccentric to said shaft and to said eccentric, a sleeve rotatably mounted on said countershaft, a coupling between said sleeve and said eccentric, a sleeve axially movable on said shaft, screw-threads connecting said rotatable sleeve and said axially-movable sleeve, a hand-lever rotatably connected to said axially-movable sleeve, two admission-eccentrics pivotally mounted on said shaft at points eccentric to said shaft and to said eccentrics, a second sleeve rotatably mounted on said countershaft, couplings between said second rotatably mounted sleeve and said admission-eccentrics, a link driven by said admission-eccentrics, a motion-block carried by said link, an admission-valve actuated by said motion-block, and gearing connecting said motion-block and said hand-lever.

3. Reversible valve-gearing for fluid-pressure engines, comprising a countershaft, an exhaust-eccentric pivotally mounted on said countershaft, a sleeve rotatably mounted

on said countershaft, a coupling between said sleeve and
said eccentric, a sleeve axially movable on said shaft,
screw-threads connecting said rotatable sleeve and said
axially-movable sleeve, a hand-lever rotatably connected
5 to said axially-movable sleeve, two admission-eccentrics
pivotaly mounted on said counter-shaft, a second sleeve
rotatably mounted on said countershaft, couplings be-
tween said second rotatably mounted sleeve and said ad-
mission-eccentrics, a link driven by said admission-eccen-

trics, a motion-block carried by said link, an admission- 10
valve actuated by said motion-block, and gearing connect-
ing said motion-block and said hand-lever.

In testimony whereof I have hereunto set my hand in
presence of two subscribing witnesses.

JOHANNES FRANZISCUS MEYJES.

Witnesses:

GEORG GROSSHAUS,
LUITPOLD QUELL.