J. E. YODER.

VALVE GEAR.

APPLICATION FILED MAR. 24, 1908.

898,543.

Patented Sept. 15, 1908

Fig. 2.

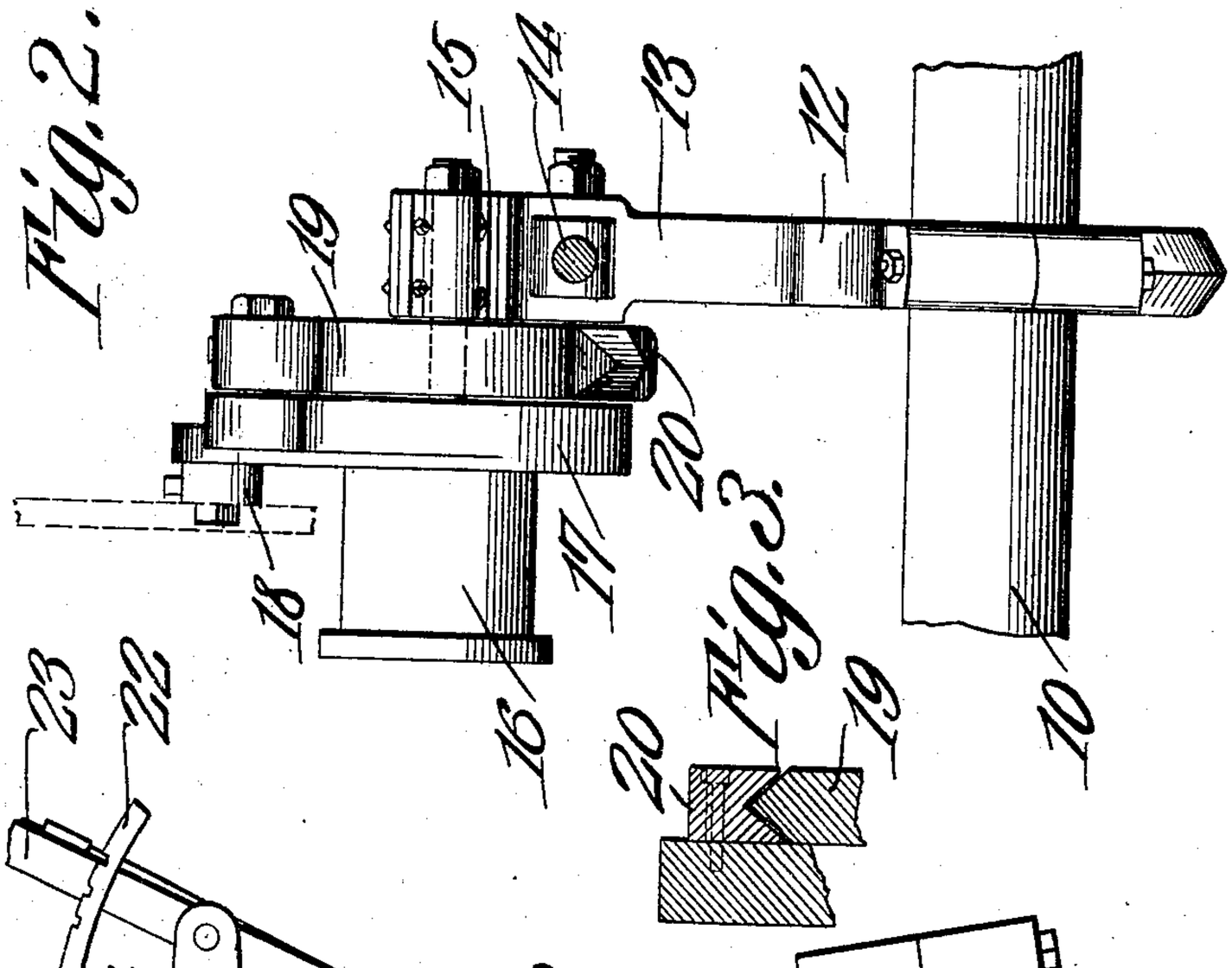

Fig. 3.

Fig. 1.

Witnesses

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UNITED STATES PATENT OFFICE.

JACOB E. YODER, OF HAVEN, KANSAS.

VALVE-GEAR.

No. 898,543. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed March 24, 1908. Serial No. 422,992.

To all whom it may concern:

Be it known that I, JACOB E. YODER, a citizen of the United States, residing at Haven, in the county of Reno and State of Kansas, have invented a new and useful Valve-Gear, of which the following is a specification.

This invention relates to engines, and its object is to provide an improved form of valve gear for engines of the reciprocating type.

The invention consists in certain novel features of construction, arrangement of parts, and combination of details, hereinafter fully described, shown in the accompanying drawings, and specifically claimed.

In the drawings: Figure 1 shows the invention in side elevation. Fig. 2 is an end view of the invention, and Fig. 3 is a detail section through the link block and guide.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The numeral 10 indicates the shaft of an engine whereon is mounted an eccentric 11. At 12 are shown the usual front and back eccentric straps. Extending outward from the front strap is an eccentric blade 13.

Attached to the blade 13 is a valve rod 14 connected to the valve stem by any suitable means not deemed necessary to be here shown. The blade 13 is further provided with bearings 15 extending outward from the blade as indicated in the various figures. There is provided a trunnion 16 whereon is mounted an arm 17 and in the form herein shown this arm is integral with the trunnion and it is to be observed that the same may be made separately should it be desired. Upon one side of arm 17 is a lug 18. At the end of the arm is pivotally mounted a shifting arm 19 the outer end whereof is formed in the arc of a circle concentric with the pivot pin. Mounted adjacent the outer end of the arm 19 is a guide 20 the inner surface whereof is arranged to receive the outer end of the arm 19. This guide 20 is provided with means for adjustment as indicated at 21. A quadrant 22 is held in any desired position upon the engine and a reverse lever 23 is arranged to coact with said quadrant being connected to the lug 18 by a link 24.

In the operation of this device it will be readily seen that the shifting of the reverse lever 23 from one end of the quadrant to the other changes the position of the valve when the eccentric is in the same position.

It is obvious that many minor features of construction and arrangements of parts may be made without departing from the principle of invention.

I claim:—

1. In a valve gear, a trunnion, an arm extending therefrom provided with pivotal means at the outer end thereof, an arced guide concentric with said pivotal means, and a shifting arm pivoted to said arm provided with an end adapted to travel in said guide.

2. In a valve gear, a trunnion, an arm extending therefrom provided with pivotal means at the outer end thereof, an adjustable arced guide concentric with said pivotal means, and a shifting arm pivoted to said arm provided with an end adapted to travel in said guide.

3. In a valve gear, a trunnion, an arm extending therefrom adapted to connect with a reverse lever, a second arm extending therefrom at approximately right angles to the first mentioned arm provided with pivotal means at the outer end thereof, an adjustable arced guide concentric with said pivotal means, and a shifting arm pivoted to said arm provided with an end adapted to travel in said guide.

4. In a valve gear, a shaft, a trunnion, an arm extending therefrom adapted to connect with a reverse lever, a second arm extending therefrom at approximately right angles to the first mentioned arm provided with pivotal means at the outer end thereof, an adjustable arced guide concentric with said pivotal means, and a shifting arm pivoted to said arm provided with an end adapted to travel in said guide.

5. In a valve gear, a shaft, a trunnion, an arm extending therefrom adapted to connect with a reverse lever, a second arm extending therefrom at approximately right angles to the first mentioned arm provided with pivotal means at the outer end thereof, an adjustable arced guide concentric with said pivotal means, in combination with a shifting arm pivoted to said second arm provided with an end adapted to travel in said guide, and a pivot formed at or near said end, and means carried by said shaft connected to said shifting arm adapted to actuate said first mentioned arm.

6. In a valve gear, a shaft, a trunnion, an

arm extending therefrom adapted to connect with a reverse lever, a second arm extending therefrom at approximately right angles to the first mentioned arm provided with pivotal means at the outer end thereof, an adjustable arced guide concentric with said pivotal means, in combination with a shifting arm pivoted to said second arm provided with an end adapted to travel in said guide and a pivot formed at or near said end, means carried by said shaft connected to said shifting arm adapted to actuate said first mentioned arm and a means to change the position of said end in said guide.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JACOB E. YODER.

Witnesses:
F. P. HETTINGER,
GEO. S. TIFFANY.