

J. E. WHITTAKER.
SPEED REGULATOR.
APPLICATION FILED JULY 28, 1909.

944,394.

Patented Dec. 28, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

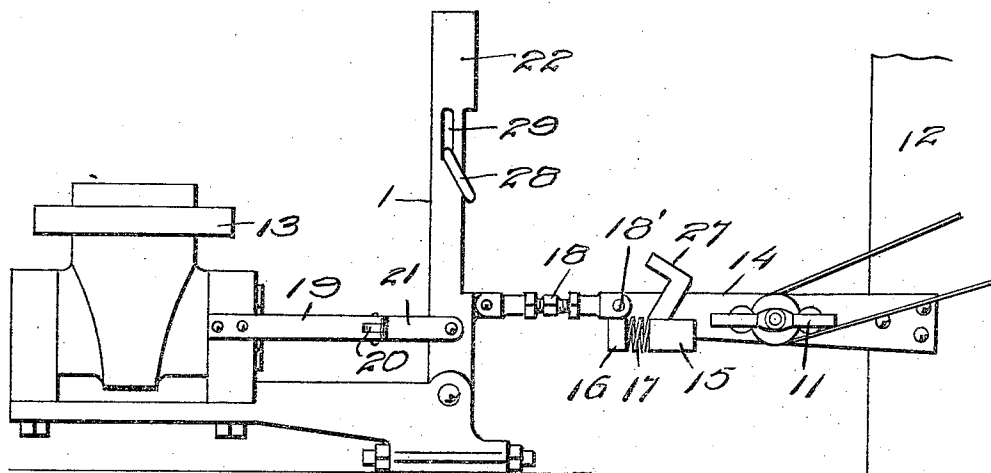
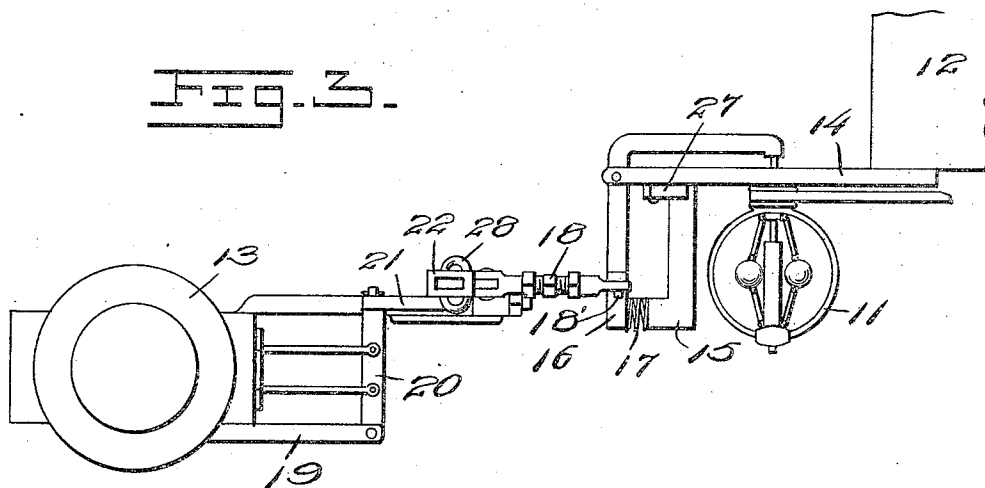


Fig. 3.



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2 SHEETS—SHEET 2.

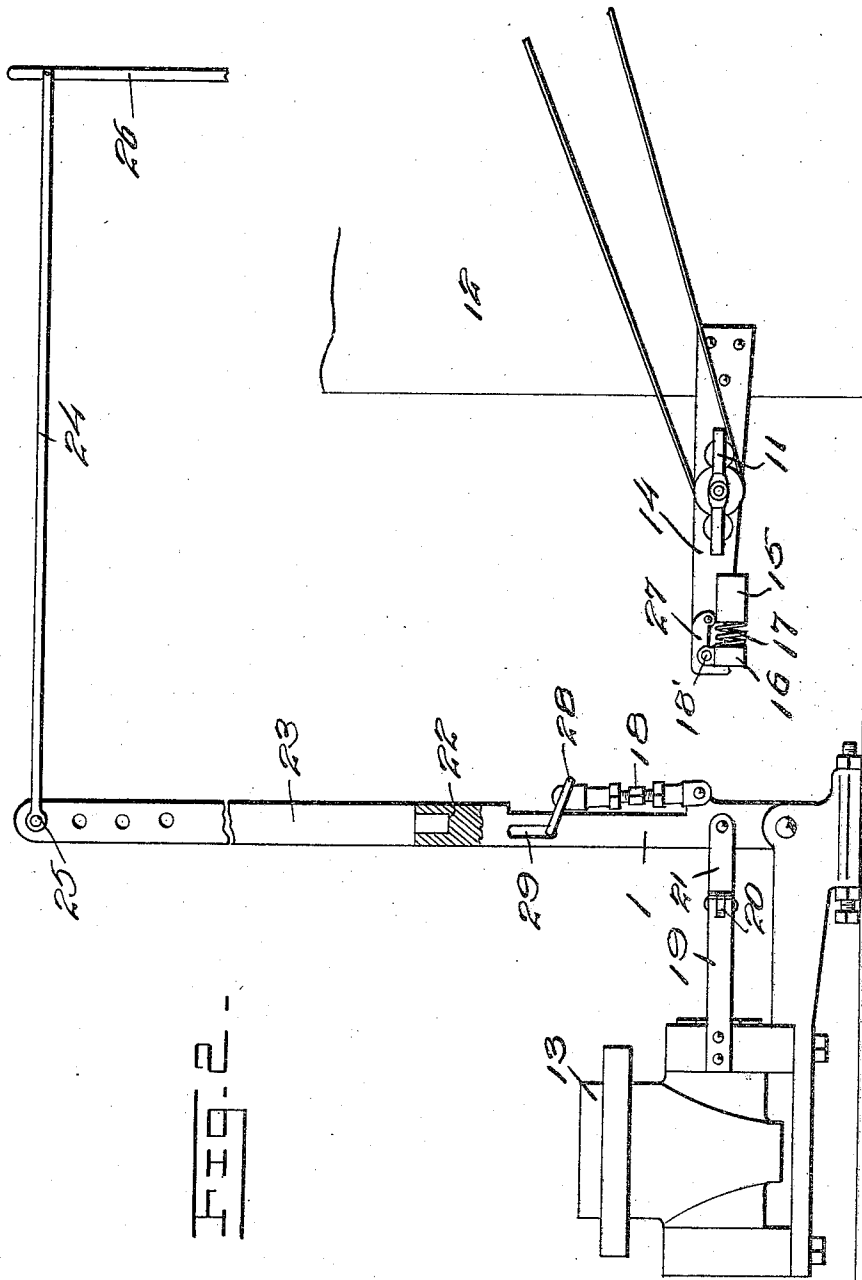


FIG. 2.

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UNITED STATES PATENT OFFICE.

JOHN EDWARD WHITTAKER, OF HOLLIDAYS COVE, WEST VIRGINIA.

SPEED-REGULATOR.

944,394.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed July 28, 1909. Serial No. 510,096.

To all whom it may concern:

Be it known that I, JOHN EDWARD WHITTAKER, a citizen of the United States, residing at Hollidays Cove, in the county of Hancock and State of West Virginia, have invented certain new and useful Improvements in Speed-Regulators, of which the following is a specification.

This invention relates to new and useful improvements in speed regulators, and more particularly to a device of this character which is designed to be operated by the action of a suitable governor connected to the fly wheel of the engine, said governor controlling the admission of gas or other actuating fluid to a plurality of reciprocating valves.

The primary object of my invention is to provide means by which the regulator bar may be readily connected or disconnected to the governor of the engine.

Another object is to provide an oscillating regulator mounted between the governor and valves and so connected therewith that the same may be manually actuated when desired.

A further object is to provide suitable means for connecting the regulator to the governor, whereby it may be instantly disconnected without stopping the operation of the engine, and a suitable operating lever connected to the regulator for manually operating the same.

With these and other objects in view, the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claims, it being understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a part of this specification and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevation of my improved regulator, showing the parts connected in position for pumping. Fig. 2 is a similar view, the regulator being disconnected from the governor, and an operating lever attached thereto. Fig. 3 is a top plan view of my improved regulator.

In the oil regions gas engines are employed for the pumping of the oil from the wells, and at times it is desirable that the governor which controls the admission of

gases to the valves of the engine, should be disconnected therefrom and a lever connected to the valve stems and to a derrick in which an operator is stationed to operate said lever to pull or remove the tubing and rods from the oil wells. To effect this change it is necessary to completely stop the operation of the engine, and it is often found to be extremely difficult to again start the same.

It is the object of my invention to simplify and improve the construction of devices of this character, whereby the above change may be accomplished while the engine is in operation. To this end I employ a vertically disposed regulator bar 1, which is pivotally mounted between the governor 11 which is secured to the bed of the engine 12, and the reciprocating valves 13. The engine 12 may be of any ordinary construction and the fly wheel thereof is connected by an endless band with the governor 11.

To the outer end of the supporting arm 14 of the governor, a transversely positioned arm 15 is secured, or if desired may be integrally formed therewith. This arm is positioned inwardly of the extremity of the bar 14 in which a transverse arm 16 is pivoted and is normally disposed in horizontal relation to the arm 15. A spiral spring 17 is disposed between the outer ends of the arms 15 and 16 and tends to normally maintain the arms in parallel spaced relation. The arm 16 is extended beyond the pivotal point thereof and is longitudinally disposed and connected to the governor shaft. Pivoted to the arm 16 and to the regulator 1 is a turn-buckle 18. A bar 19 is secured to the valve casing, and extends longitudinally beyond the end of the same, and has pivoted to its extremity the transversely disposed bar 20. A link 21 is pivoted to the free end of the bar 20 and to the regulator 1. The valve stems of the valves 13 are also pivotally connected to the bar 20 and are adapted to be actuated thereby.

The base plate of the valves 13 is extended to provide a mounting for the regulator 1. As shown in the drawings the member 1 is pivoted to the enlarged extremity of this base plate and remains connected thereto at all times. The upper end of the member 1 is formed with a socket 22 to receive the operating lever 23. The upper extremity of this lever is provided with a plurality of openings, to which a connecting rod 24

may be secured by means of the removable attaching bolt 25. The rod 24 extends to a derrick in which an operator is stationed, and is there connected to a pivotally mounted lever 26 by which the lever 23 may be oscillated and controlled at the will of the operator.

As shown in the drawings, when the regulator 1 is disconnected from the governor, a dog or latch plate 27 may be positioned upon the outer face of the arm 16, to prevent any movement thereof. This dog is hinged upon the supporting bar 14, and when the parts are connected for pumping it will be vertically disposed so as to allow of the free pivotal movement of the arm which is caused by the governor 11.

In the operation of the device, when it is desired to use the engine for pumping purposes, the regulator 1 is connected to the valve 13 and the governor 14 as illustrated in Fig. 1 of the drawing. It will be noted that the turn-buckle 18 is connected to the transverse arm 16 by means of the pin 18'. Thus when the engine is in operation the centrifugal action of the governor balls will oscillate the arm 16 which in turn will impart an oscillatory motion to the regulator bar 1. The oscillation of this bar will move the transverse arm 20 and reciprocate the valves 13 to perform the pumping operation.

When it is desired to use the device for pulling tubes or rods from the well, the pin 18' is removed and the turn-buckle 18 thus disconnected from the governor arm 16. The turn-buckle is now thrown upwardly into parallel relation with the regulator 1, and secured in such position by means of a link 28 which is movable in a vertical slot 29 formed in the bar 1. This operation is effected while the engine is still in motion, the pin being easily removed without danger to the operator. The lever 23 is now placed in the socket 22 of the bar 1, and connected with the operator's lever 26 as before described. The oscillation of the lever 23 and consequently of the bar 1 is thus under the control of the operator, and the device may now be employed for the removing of tubes or other objects as may be desired. It will be understood, however, that my improved regulator may be employed for various analogous purposes and is not limited to use with any particular construction of engine.

By employing such a construction as above described, it will be obvious that much valuable time may be saved, as the various elements may be quickly assembled and disassembled in position to perform the several operations, without the necessity of stopping the action of the engine. Experience has demonstrated that this is the greatest fault to be found in the use of the present construction of engine, and manner of associating the several coöperative elements.

By means of my improved regulator attachment, the change may be quickly made without any unnecessary loss of time, or danger to the operator in the disconnection of the parts. Thus the work will be greatly facilitated, and when the regulator has been thus disconnected from the engine, the engine may be utilized for various other purposes and will not require the great loss of time and trouble of again starting the same.

From the foregoing it will be seen that I have provided a regulator which is of extremely simple construction, and which may be efficaciously employed for a large variety of purposes. It is also very positive in its action, highly durable in use and extremely inexpensive to manufacture.

What is claimed is:

1. In a device of the character described the combination with an engine and reciprocating valves operated thereby, a bar secured to the valve casing, a transversely extending arm pivoted thereto, a vertically positioned oscillating regulator bar pivotally mounted between the engine and valves, a centrifugal governor mounted upon said engine, said bar being connected to the governor and to said transverse arm, and a manually operated lever removably connected to the upper end of said regulator bar.

2. In a device of the character described, the combination with an engine and reciprocating valves operated thereby, a bar secured to the valve casing, a vertically positioned oscillating regulator bar pivotally mounted between the engine and valves, an arm connected to said bar, a link pivoted to the end of said arm and to the regulator bar, a centrifugal governor mounted upon said engine, an arm connected thereto and oscillated thereby, and a turn-buckle removably connected to said arm and to the regulator bar.

3. In a device of the character described, the combination with an engine and reciprocating valves operated thereby, a bar secured to the valve casing, a transversely extending arm pivoted to said bar, an oscillating regulator bar pivotally mounted between the engine and valves, a link connected to said bar and arm, a centrifugal governor supported upon said engine, an oscillatory arm connected to and operated by said governor, a link pivoted to said regulator bar and removably connected to said oscillating arm, and a link carried by said regulator bar to support the turn-buckle when disconnected from said arm.

4. In a device of the character described, the combination with an engine and reciprocating valves operated thereby, a transversely extending arm pivotally supported by the valve casing and connected to the valve stems, a vertically positioned regulator bar pivotally mounted between the engine and valves, a link connecting said bar to

said transverse arm, a governor mounted upon said engine to control the operation of said valves, a turn-buckle pivoted to said regulator bar and removably connected to said governor, said turn-buckle being raised to a vertical position when disconnected and retained in such position by means of a link carried by said bar, and a socket formed on the upper extremity of said bar, and a lever removably positioned in said socket for manual operation.

5. In a device of the character described the combination with an engine and reciprocating valves operated thereby, a regulator bar pivotally mounted between the engine and valves, a governor mounted upon said engine, an oscillating arm connected to said governor and actuated thereby, a pivoted latch plate adapted to hold said arm against

oscillatory movement, a transverse arm pivotally supported upon the valve casing and connected to said regulator bar, said arm being adapted to reciprocate the valves, a turn-buckle pivoted to said bar and adapted to have detachable engagement with the oscillating governor arm, a link carried by the regulator bar and adapted to hold said turn-buckle in elevated position, a socket formed upon the upper end of said bar, and a lever removably positioned in said socket to manually reciprocate said valves.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN EDWARD WHITTAKER.

Witnesses:

C. M. WASHABAUGH,
H. E. MOOREHEAD.