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J. J. FRASER

SAFE CONTROL AND SIGNAL FOR PUMP OPERATING MECHANISM

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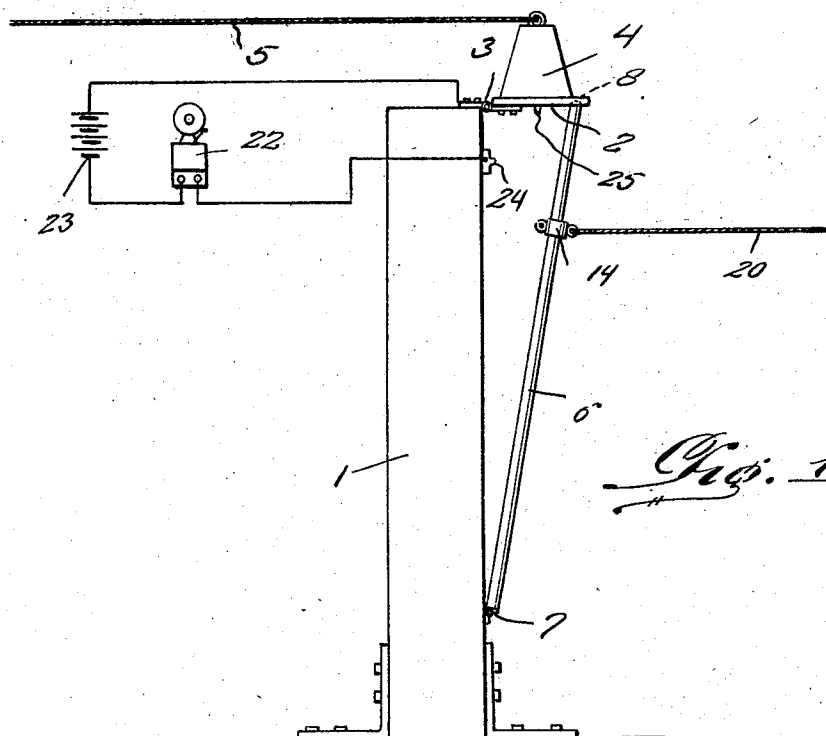


Fig. 1.

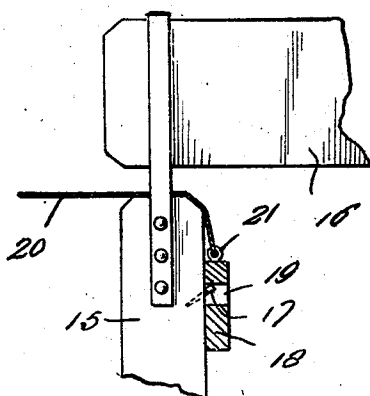


Fig. 2.

Inventor
J. J. Fraser,

By *Clarence A. O'Brien*
Attorney

UNITED STATES PATENT OFFICE.

JOHN JAMES FRASER, OF CAMDEN, ARKANSAS, ASSIGNOR OF FORTY-FIVE PER CENT
TO HENRY E. FARABEE, OF CAMDEN, ARKANSAS.

SAFE CONTROL AND SIGNAL FOR PUMP-OPERATING MECHANISM.

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This invention relates to a highly novel means for automatically stopping the engine which controls the operation of the pumping mechanism when a part of the mechanism becomes inoperative.

A further object is to provide means whereby an audible signal is automatically actuated simultaneously with the operation of the engine control apparatus.

A still further object of the invention is to provide a device of the above mentioned character, which will eliminate the necessity of a constant attendant at each pumping well thereby economizing the cost of operating a pumping rig and furthermore assuring the maximum production.

A still further object of the invention is to provide a device of the above mentioned character, which is simple in construction, inexpensive, strong and durable and furthermore adapted for the purposes for which it is designated.

Other objects and advantages of this invention will become apparent during the course of the following description.

In the accompanying drawing forming a part of this specification and in which like numerals designate like parts throughout the same:

Figure 1 is a side elevation of the standard showing the weighted member supported thereon in its normal inoperative position and the engine control cable connected to the weighted member, and

Figure 2 is a fragmentary detail of the upper portion of the pitman and the beam of a pumping rig showing the manner in which the cable which is attached to the weighted member supporting means is held in engagement with the pitman.

In the drawing, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates a supporting standard which is preferably placed in the engine room adjacent the engine throttle, motor switch or other apparatus used in cutting off the operation of the engine (not shown) and which provides a means for operating the pump rig. A shelf or the like shown at 2 is hingedly supported on the top of the standard 1 as at 3 and supports thereon the weight 4. The engine control cable which is connected to the means for cutting off the

engine at one end has its opposite end connected to the weight 4 and is indicated at 5.

An arm 6 is universally hinged on the lower portion of the standard 1 as illustrated at 7 and the upper end thereof is adapted to seat in a suitable notch or recess or the like shown at 8 which is formed in the bottom of the shelf 2 whereby the shelf and the weighted member 4 carried thereby will be normally supported in an inoperative position thereby rendering the engine control cable 5 idle and permitting the operation of the engine during the pumping of the well.

The pitman and beam associated therewith are of any well known form of pumping rig and are illustrated at 15 and 16 respectively in the drawing with reference more particularly to Figure 2. A pin 17 is driven into the pitman 15 adjacent the upper end thereof and a small portion thereof extends outwardly from the side of the pitman and provides a means for normally supporting the weight 18 thereon, the weight being provided with an opening 19 for receiving the outwardly extending portion of the pin. A wire 20 is secured at one end to the weight 18 as illustrated at 21 and the opposite end of the wire is fastened to the collar 14 which is mounted on the shelf supporting arm 6. Normally when the pitman and beam of the pumping rig are operating properly, the weight 18 will be supported against displacement from the outer end of the pin 17.

Should the pumping rig in any way become inoperative, so that the pitman and the beam associated therewith cannot properly function, the weight 18 will become dislodged from the pin 17 due to the jarring action imparted to the pitman. Such jarring action may be caused by reason of the pitman coming in contact with an obstruction in the well. This will cause a pull to be exerted on the wire 20, and as a result, the shelf supporting arm 6 will be moved out of engagement with the shelf, and the weight 4 will thereby automatically swing downwardly exerting a pull on the engine control cable 5 and the latter in turn will cut off the engine.

Simultaneous with the cutting off of the operation of the engine which operates the pumping rig, an audible signal will be operated, and to this end I provide an electric

bell 22 which is arranged in a suitable electric circuit 23, the stationary contact 24 being mounted on the standard 1 adjacent the upper end thereof, the shelf 2 carrying a contact 25 which is adapted for engagement with the contact 24 to close the circuit to the bell when the shelf supporting arm 6 is disengaged from the shelf and the weight 4 causes the shelf to swing downwardly.

The operation of the audible signal will thereby indicate to the operator of the pump that the engine which operates the pumping ring has been cut off and that attention must be given to the pumping mechanism. The provision of a device of the above mentioned character, will save considerable expense and labor and will at all times be positive and efficient in its operation.

While I have shown the preferred embodiment of my invention, it is to be understood that various changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention and the scope of the appended claims.

Having thus described the invention, what I claim is:—

1. A device of the class described comprising a supporting standard, a shelf hinged on the upper end of said standard, a weight carried by said shelf, an engine control cable

associated with said weight, an arm hingedly supported at its lower end on said standard, the upper end of said arm engaging said shelf and normally holding the same in an inoperative position, whereby the engine control cable is idle, and means for disengaging the upper end of said arm from said shelf whereby the shelf is automatically swung downwardly by said weight and actuates the cable to cut off the engine.

2. A device of the class described comprising a supporting standard, a shelf hinged to the upper end of the standard on one side thereof, said shelf having a notch formed in the bottom of the outer end portion thereof, a weight carried by the shelf, an engine control cable associated with said weight, an arm hingedly supported at its lower end on said standard, the upper end of said arm engaging in said notch for normally holding the shelf in a raised position, whereby the engine control cable is idle, and a pull cable connected to said arm for disengaging the upper end thereof from the detent in the shelf whereby the shelf is automatically swung downwardly by said weight, and simultaneously actuates the first mentioned cable to cut off the engine.

In testimony whereof I affix my signature:

JOHN JAMES FRASER.