June 28, 1927. 1,633,813

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OIL WELL CONTROLLED FIRE EXTINGUISHER

Filed Sept. 17, 1926

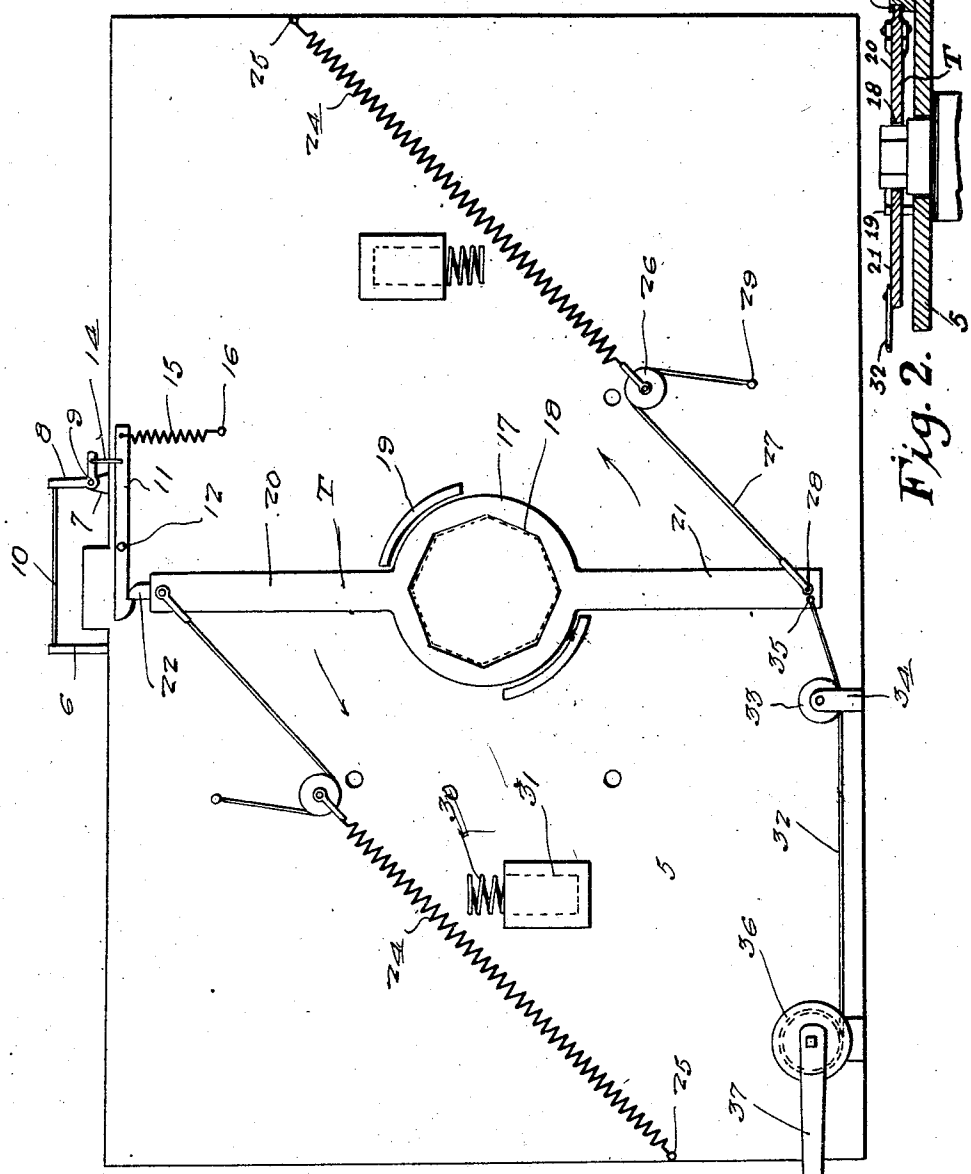


Fig. 1.

Fig. 2.

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Patented June 28, 1927. 1,633,813

UNITED STATES PATENT OFFICE.

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OIL-WELL-CONTROLLED FIRE EXTINGUISHER.

Application filed September 17, 1926. Serial No. 136,151.

The present invention relates to a device for automatically shutting off flowing oil wells which have accidentally caught on fire just after they have been drilled into the production.

An important object of the invention is to provide a device of this nature which is exceedingly simple in its construction, inexpensive to manufacture, thoroughly efficient and reliable in operation, and otherwise well adapted to the purpose for which it is designed.

With the above and other objects in view, as will appear as the description proceeds, the invention resides in certain novel features of construction and in the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the drawing:—

Figure 1 is a top plan view of the apparatus embodying the features of my invention.

Figure 2 is a transverse sectional view through the apparatus.

Referring to the drawing in detail, it will be seen that the numeral 5 denotes a plate which in the present instance is rectangular in formation merely by way of preference. A lug 6 extends from one edge of the plate and a smaller lug 7 extends from the same edge of the plate in spaced relation to the lug 6. A bell crank lever 8 is pivoted as at 9 on the lug 7 and a fuse 10 is disposed between the lugs 6 and 7. A latch 11 is pivoted as at 12 on the plate 5 and has a link connection 14 with the bell crank 8.

A spring 15 is engaged with one end of the latch 11 and anchored as at 16 on the plate 5 and normally tends to move the latch 11 to a released position, the bell crank 8 and fuse 10, however, holding said latch 11 in an engaged position.

The letter T denotes generallly a tool which has an intermediate portion 17 with a hexagonal opening 18 for engagement with the operating portion of a valve. The exterior edge of the intermediate portion 17 is rounded and guided in arcuate members 19 rising from the plate 5. Arms 20 and 21 radiate from the intermediate portions 17.

A reduced extension 22 is formed at the terminal of the arm 20 and is engaged by the latch 11 as shown in the drawing. A pair of springs 24 are anchored as at 25 to the plate 5 and have mounted at their free ends, sheaves or pulleys 26. Cables 27 are engaged as at 28 with the ends of the arms 20 and 21 and are trained over the sheaves 26 and are anchored as at 29. These springs normally have a tendency to pull the cables so as to swing the tool T to close the valve, but the latch 11 prevents this as long as the fuse 10 is intact.

Spring buffers 30 are mounted in keepers 31 provided on the plate 5 and the arms 20 and 21 come into engagement therewith when the springs 24 move the tool to its valve closing position. A cable 32 is trained over a pulley 33 journaled in a bracket 34 on the plate and is engaged with the extremity of the arm 21 as at 35. This cable 32 is windable on a drum 36 mounted in any suitable manner on the plate and operable by a crank 37. It will thus be seen that after the fuse 10 has been destroyed by fire, the spring 15 is free to rock the latch 11 so as to release it from engagement with the reduced extension 22, so that the tool will be rotated in a counter-clockwise direction for shutting off the valve because of the springs 24.

When the valve is thus shut off and it is desired to open the valve, this may be accomplished by turning crank 37 and winding the cable 32 on the drum 36, thereby resetting the parts when a new fuse is put in place.

It is thought that the construction, operation, and advantages of my invention, will now be clearly understood by those skilled in this art without a more detailed description thereof. The present embodiment of the invention has been disclosed in detail merely by way of example, since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description.

It will be quite apparent that numerous changes in the details of construction, and in the combination and arrangement of parts may be resorted to without departing from the spirit or scope of the invention as as hereinafter claimed, or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:—

1. A device of the class described including a plate, a valve shut-off tool rotatable above the plate and adapted to operatively engage a valve, means associated with said tool tending to swing it to shut off the

valve, a latch associated with said tool for holding it in its valve open position, means tending to release the latch from engagement with said tool, and fuse means for holding said latch in an engaged position with said tool.

2. A device of the class described including a plate, a tool movably mounted above the plate, means associated with the tool tending to dispose it in one position, a spring releasable latch engageable with the tool for normally holding it in another position, a bell crank rockably mounted on the plate, a connection between the bell crank and the latch, and a fuse associated with the bell crank for holding said latch in its tool-engaging position.

3. A device of the class described including a plate, a tool movably mounted above the plate, means associated with the tool tending to dispose it in one position, a spring releasable latch engageable with the tool for normally holding it in another position, a bell crank rockably mounted on the plate, a connection between the bell crank and the latch, a fuse associated with the bell crank for holding said latch in its tool engaging position, and means on the plate for re-setting the tool.

4. A device of the class described including a plate, a tool including an intermediate portion for engaging with a valve and rotatable above the plate and arms radiating from the intermediate portion, springs, pulleys on the springs, one end of the springs being anchored to the plate, cables trained over the pulleys and having ends anchored to the plate and the other ends engaged with the extremities of the arms and tending to rotate said tool and operate the valve, and fuse controlled latch means associated with one of the arms to hold the tool in inoperative position.

5. A device of the class described including a plate, a tool including an intermediate portion for engaging with a valve and rotatable above the plate and arms radiating from the intermediate portion, springs, pulleys on the springs, one end of the springs being anchored to the plate, cables trained over the pulleys and having ends anchored to the plate and the other ends engaged with the extremities of the arms and tending to rotate said tool and operate the valve, a latch pivotally mounted on the plate and engageable with one of the arms to hold the tool in inoperative position, a spring associated with said latch tending to disengage the same from the arm, a bell crank rockable on the plate, a link connecting the bell crank with the latch, and fuse means for holding the bell crank in a position to hold the latch in engagement with said last mentioned arm.

6. A device of the class described including a plate, a tool including an intermediate portion for engagng with a valve and rotatable above the plate and arms radiating from the intermediate portion, springs, pulleys on the springs, one end of the springs being anchored to the plate, cables trained over the pulleys and having ends anchored to the plate and the other ends engaged with the extremities of the arms and tending to rotate said tool and operate the valve, a latch pivotally mounted on the plate and engageable with one of the arms to hold the tool in inoperative position, a spring associated with the latch tending to disengage the same from the arm, a bell crank rockable on the plate, a link connecting the bell crank with the latch, fuse means for holding the bell crank in a position to hold the latch in engagement with said last-mentioned arm, a cable engaged with the other arm, and a drum rotatable on the plate on which the last-mentioned cable is windable for moving the valve to its normal position after it has been operated.

In testimony whereof I affix my signature.

TED BENJAMIN HAWLEY.