

L. W. ROGERS.

CUT-OFF.

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1,283,916.

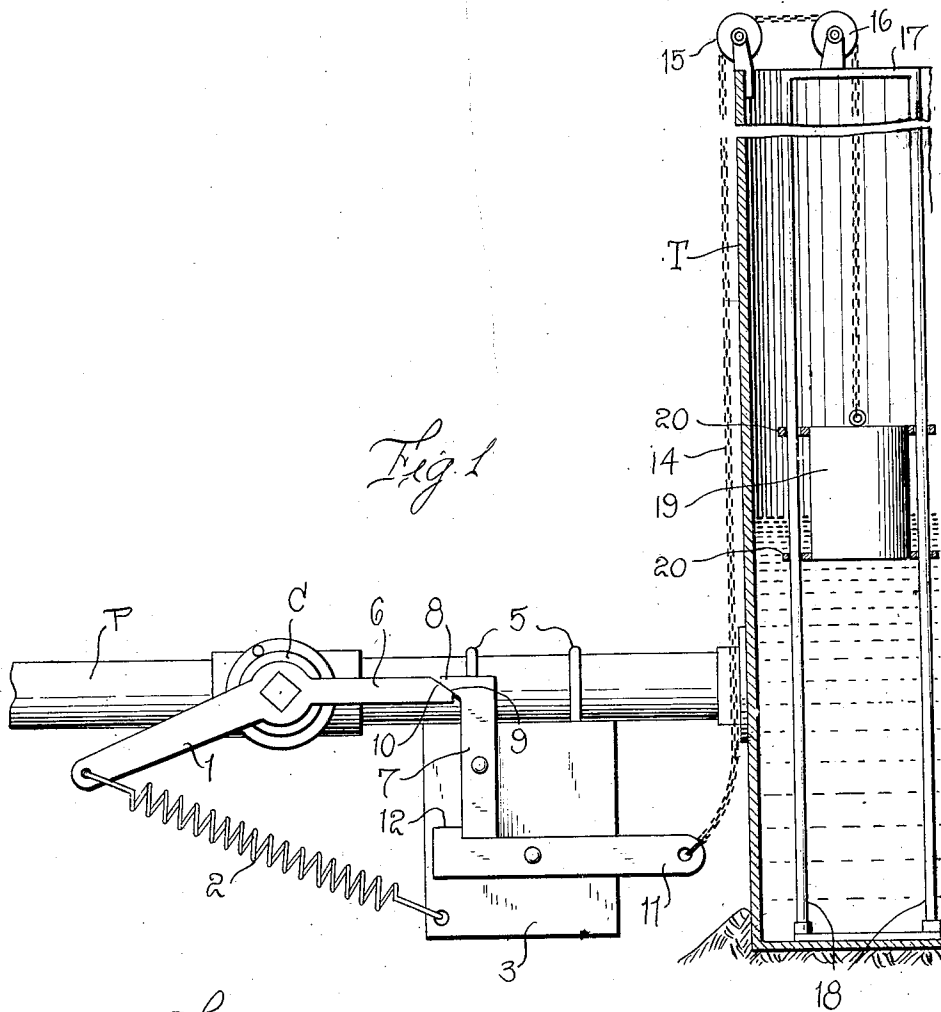
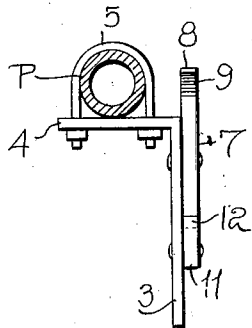


Fig. 2



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CUT-OFF.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LAWRENCE W. ROGERS, a citizen of the United States, residing at Beland, in the county of Muskogee and State of Oklahoma, have invented certain new and useful Improvements in Cut-Offs, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in cut-offs and has relation more particularly to a device of this general character interposed in a pipe line leading from an oil tank or the like and it is an object of the invention to provide a novel and improved means under control of the fluid within the tank whereby the cut-off is automatically thrown into closed position when the level of the fluid has dropped to a predetermined point or such fluid has been substantially entirely withdrawn from within the tank.

It is also an object of the invention to provide a novel and improved means coacting with a cut-off or stop interposed in a pipe line leading from a tank or the like and which consists of a member serving to automatically throw the cut-off or stop into closed position upon release of a latch coacting with the cut-off or stop and which latch is released through the medium of the buoyant member floating upon the fluid within the tank.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved cutoff whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth. The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a somewhat diagrammatic view partly in elevation and partly in section illustrating a cut-off constructed in accordance with an embodiment of my invention; and

Fig. 2 is a view partly in section and partly in end elevation, with certain parts omitted, of my improved cut-off as herein included.

As disclosed in the accompanying drawings T denotes a storage tank for oil of a

conventional type and which has leading therefrom a pipe line P through which the oil is to be drawn from within the tank through the medium of a pump (not shown) as is well known. Coacting in a well known manner with the pipe line P at a point in close proximity to the tank T is a cut-off or stop of a conventional type and which serves to close the pipe line P when the tank T is substantially emptied of its contents.

It is now the general practice for a leaseman to manually close the cut-off or stop when the tank is substantially emptied, but it is my purpose to provide means whereby the cut-off or stop will be automatically thrown into closed position when the tank T is substantially emptied and for which purpose the core or plug C of the cut-off or stop is provided, exteriorly of the line P, with the operating arm 1 to the outer end portion of which is suitably anchored an extremity of a retractile member 2 and the opposite end of said member 2 is suitably secured to a casting 3. As herein disclosed the retractile member 2 comprises a conventional coil spring possessing the requisite tension to impart the necessary turning movement to the core or plug C to throw the same into closed position and which requires substantially a one-quarter revolution of said core or plug.

The casting 3 as herein disclosed embodies a plate having its upper marginal portion defined by a flange 4 underlying the pipe line P and which has secured thereto the cleats 5 straddling the line P and whereby the casting 3 is supported in proper position by the pipe line P.

The extended portion of the core of plug C is also provided with a rock arm 6 extending in a direction away from the arm 1 and which arm 6 occupies substantially a horizontal plane when the core or plug C is in open position to permit the desired flow through the line P. Pivottally engaged intermediate its length with the outer face of the casting 3 is a vertically disposed latch bar 7 having its upper end provided with a forwardly directed lip or extension 8 having its under edge beveled as at 9 to overlie the beveled end 10 of the arm 6. The latch bar 7 when held in substantially a vertical position coacts with the arm 6 to hold the core or plug C against movement under the influence of the retractile member 2.

11 denotes a substantially horizontally disposed bar pivottally secured at a predeter-

mined point intermediate its length to the outer face of the casting 3 and below the latch bar 7. The forward end portion of the lever 11 is provided with an upstanding lug 12 which overlies the forward edge of the lower portion of the bar 7 when the lever 11 is in its normal or substantially horizontal position. It will therefore be self-evident that the lever 11 serves to maintain the bar 7 or more particularly the lip or extension 8 thereof in locking engagement with the arm 6.

As herein disclosed the rear end portion of the lever 11 terminates beyond the casting 3 and secured to said extended portion of the lever 11 is an end portion of a flexible member 14 preferably a chain. The member 14 passes upwardly and is disposed over the guide pulleys 15 and 16. The guide pulley 15 is mounted at the top of a wall of the tank T while the pulley 16 is supported by the cross member 17 connecting the upper end portions of the vertically disposed guide rods 18 arranged within the tank T and extending substantially the entire height thereof.

The opposite extremity of the member 14 is secured to the buoyant member or float 19 positioned between the guide rods 18 and provided with the diametrically opposed out-standing ears 20 through which the rods 18 are loosely directed and whereby the buoyant member or float 19 is positioned for vertical movement in a fixed line of travel.

When the tank T is filled with oil the buoyant member or float 19 is positioned adjacent the top of the tank and portions of the member 14 rest upon the ground exteriorly of the tank. As the oil is withdrawn from the tank through the line P the float 19 will descend with the level of the oil and when the tank T is substantially emptied of its contents, the weight of the float 19 will serve to rock the lever 11 to disengage the lug 12 from the lower end portion of the latch bar 7. Upon this release the retractile member 3 will automatically throw the core or plug C into closed position and thereby prevent the pump from drawing air through the line P and which would otherwise retard the pumping operation in connection with other tanks. When the tank T has been refilled the core or plug C of the cut-off or

stop is manually thrown into open position and the latch bar 7 and lever 11 re-set.

From the foregoing description, it is thought to be obvious that a cut-off constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

In combination with an oil tank, a pipe line leading therefrom, and a core of a stop interposed in said line, a plate supported directly by and depending from the pipe line adjacent the stop, an arm extending from the core exteriorly of said line, said arm being substantially parallel with the adjacent portion of the line when the core is in open position, a second arm extending from the core exteriorly of the line and disposed in a direction away from the first named arm, a retractile member secured to the outer end portion of the second arm and the plate to throw automatically the core into closed position, a vertically disposed latch bar pivotally engaged with the plate and coacting with the free end portion of the first named arm for holding the core against movement under the influence of the retractile member, a normally horizontal lever pivotally engaged with the body below the latch bar and coacting with the lower end portion of the latch bar for holding said latch bar in operative engagement with the first named arm of the core, a buoyant body arranged within the tank and rising and falling with the level of the fluid therein, and a flexible connection between said buoyant body and the lever.

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

LAWRENCE W. ROGERS.

Witnesses:

JAY A. ANDERSON,
MARTHA H. BROWN.