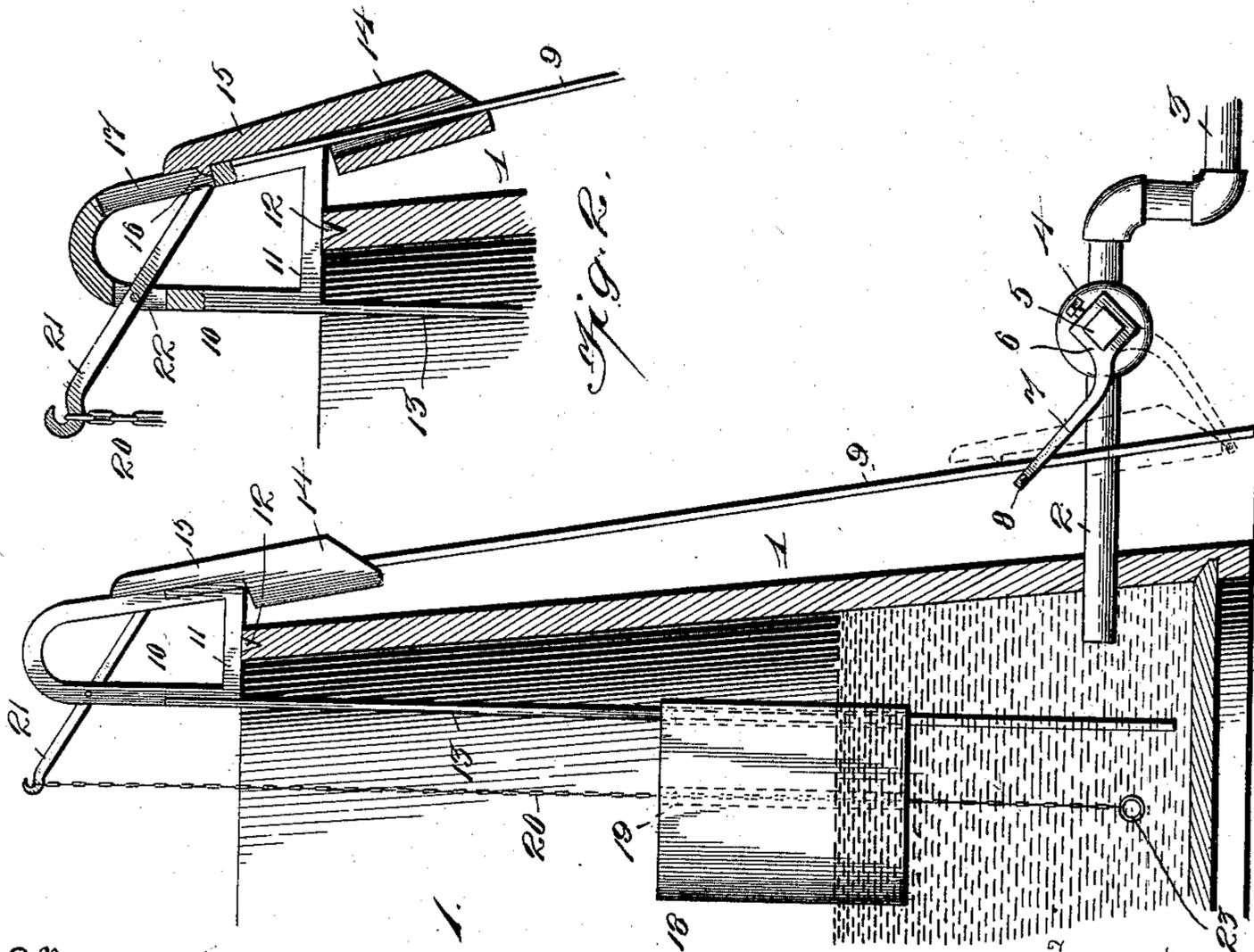
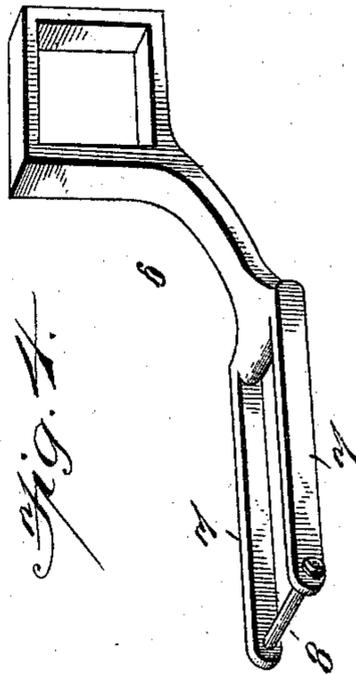
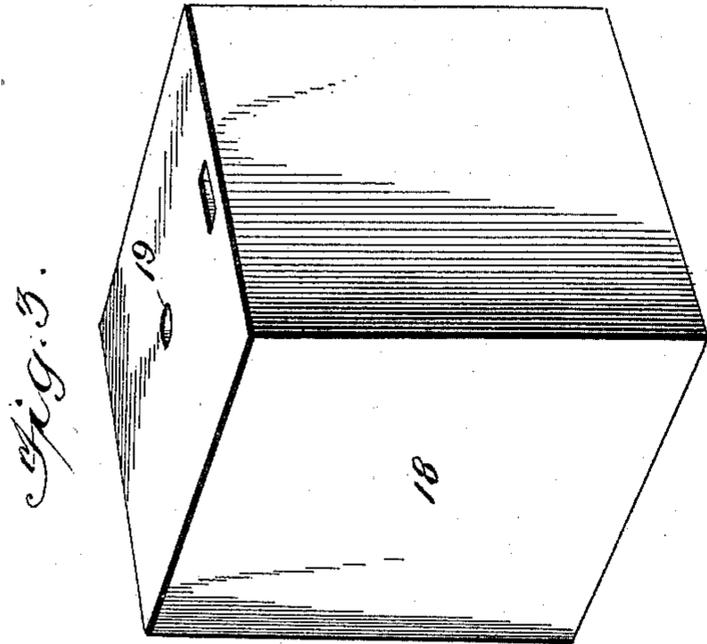


(No Model.)

N. GUYER, J. P. KELLY & A. KISSELL.
AUTOMATIC CUT-OFF FOR OIL TANKS.

No. 603,985.

Patented May 10, 1898.



Witnesses
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Fig. 1.

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UNITED STATES PATENT OFFICE.

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AUTOMATIC CUT-OFF FOR OIL-TANKS.

SPECIFICATION forming part of Letters Patent No. 603,985, dated May 10, 1898.

Application filed June 26, 1897. Serial No. 642,494. (No model.)

To all whom it may concern:

Be it known that we, NELSON GUYER, JOHN P. KELLY, and AARON KISSELL, of Cygnet, in the county of Wood and State of Ohio, have
5 invented certain new and useful Improvements in Automatic Cut-Offs for Oil-Tanks; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in
10 the art to which it appertains to make and use the same.

This invention relates to improvements in oil-tanks, and more especially to providing a device therefor by which the valve in the discharge-pipe is automatically cut off when the
15 oil in the tank reaches a certain level.

In the process of handling petroleum-oil it is customary to discharge the tanks in which it is stored by a pipe-line extending to a station, where it is run into tanks or shipping-cases for transportation, the oil being drawn by a suction-pump at the station, and as the suction-pump is connected to a number of storage-tanks the emptying of one below the
20 inlet end of the discharge-pipe will cause the station-pump to take air, and consequently stop the delivery from the other storage-tanks. Usually there is no one at the storage-tanks to manipulate the valves in the discharge-pipes at the proper time, for the gager, after measuring the tank and turning the valve, leaves and does not return until the tank is entirely emptied, thus permitting of the accident herein related. Our invention effectually provides against the oil in the tank being discharged below the outlet-pipe, and for this purpose the parts are arranged to automatically operate the valve when a predetermined level has been reached.
35

The invention consists in the particular construction and combination of the parts, providing a simple and effective apparatus for closing the discharge-pipe when the oil in the tank reaches a certain level.

45 In the following specification we have entered into a detail description of our invention, reference being had to the accompanying drawings and to numerals thereon, which designate the different parts, and what we

consider to be the novel features of construction are specifically set forth in the appended claims. 50

In the drawings forming part of this specification, Figure 1 is an elevation showing the application of our invention, a storage-tank being shown in section. Fig. 2 is a detail sectional view through the tripping device for the operating-weight. Fig. 3 is a detail view of the weight. Fig. 4 is a detail view of the lever which is connected to the valve-plug in the discharge-pipe. 60

Referring more particularly to the drawings, wherein like numerals of reference indicate similar parts throughout the several views, 1 designates the storage-tank, which is constructed in the usual manner, ordinarily of wooden staves with iron bands, and into this tank extends a discharge pipe or nipple 2, which connects with the pipe-line 3, leading to the pump at the station or point from which the oil is shipped. At the outer end of the nipple 2 is a valve 4, which regulates the discharge of oil from the tank, said valve having the usual plug 5, the outer end of which is squared to receive the key or turning-handle 6. 75

In carrying out our invention the turning-handle 6 is bifurcated at its free end, presenting parallel members 7 7, the outer ends of which are connected by a bolt 8. Through the bifurcated end of the lever extends a guide-rod 9, which is bolted at its upper end to a bracket 10, having a base or cross-piece 11, with a depending spur 12. At the side of the bracket opposite that to which the guide-rod 9 is secured is bolted a second guide-rod 13, which depends vertically when the bracket is in position, and in applying the bracket it rests upon the upper edge of the tank and is held thereon by driving the spur into one of the staves. In position the guide-rod 13 depends vertically within the tank, while the guide-rod 9 extends parallel with the inclined side of the tank and through the handle of the valve. Upon the rod 9 is mounted a sliding weight 14, having an upwardly-projecting member 15, with a lug engaging the lower wall of a slot 17, formed in the outer part of 85 90 95

the supporting-bracket. The larger portion of this weight has an opening through the same, through which the rod passes, and it is intended that the said weight should be sufficient to operate the handle and close the valve when it is released. When the parts are arranged for operation, this weight is supported in connection with the bracket by engaging the slot therein, and in order to trip the operating-weight at the proper time a float 18 is loosely mounted upon the guide-rod 13 and has a vertical opening 19 through the same for the passage of a chain 20, the upper end of which is connected to a trip-lever 21, pivoted within a slot 22 therefor in the bracket, the other end of the lever bearing against the upper end of the weight. The chain 20 has adjustably connected thereto a ring 23, which is so positioned with respect to the float and discharge-pipe that when the former engages the ring it will trip the lever 21, releasing the weight, which falls upon the handle of the valve and operates the same to cut off the discharge-pipe.

From the foregoing description, in connection with the accompanying drawings, the construction and operation of our improved automatic cut-off for storage-tanks will be readily understood, and it will be apparent that by employing this device a positive operation of the same would be effected when the oil reaches a certain level within the tank, and in order to prevent the oil descending below the level of the discharge-pipe the ring 23 is properly located to trip the lever when the level of the oil is immediately above the inlet end of the discharge-pipe. This device will effectually prevent the uncovering of the discharge-pipe and will hold the valve closed until the device is ready to be again set. By the use of this automatic valve-closer the tank will not need attention after the valve has been opened to discharge the oil in the tank, and it will prevent an accident should the tank be neglected during the operation of discharging the same.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an automatic cut-off for storage-tanks, the combination with a weight and a valve adapted to be operated by the falling of the weight, of means for holding the weight in elevated position, a float within the tank, and means operated by the float to release the weight, substantially as set forth.

2. In an automatic cut-off for storage-tanks, the combination with the valve in the discharge-pipe, of a handle connected to the valve, a float located within the tank, a weight adapted to strike the handle of the valve, and means operated by the float to release the weight, substantially as shown and for the purpose set forth.

3. In an automatic cut-off for storage-tanks, the combination with the valve in the discharge-pipe having a handle, of a float located within the tank, a trip-lever connected to the float, and a weight supported by the bracket and adapted to be struck by the trip-lever, substantially as shown and for the purpose set forth.

4. In an automatic cut-off for storage-tanks, the combination with the valve in the discharge-pipe and handle for operating the same, of a bracket or frame and weight supported thereby, a trip-lever engaging the weight, and a float within the tank connected to the trip-lever, substantially as shown and for the purpose set forth.

5. In an automatic cut-off for storage-tanks, the combination with the valve in the discharge-pipe and handle connected to the valve, of a bracket supported upon the tank and having guide-rods, a weight mounted upon one of the guide-rods and having a lug engaging the shoulder formed by the lower end of the slot in the bracket, a trip-lever mounted within the bracket to engage the weight, and a float sliding upon the other guide-rod and connected to the trip-lever, substantially as shown and for the purpose set forth.

6. In an automatic cut-off for storage-tanks, the combination with the valve in the discharge-pipe and handle connected to the valve, of a bracket secured to the upper end of the tank and having depending guide-rods, a weight mounted upon one of the guide-rods to strike the handle of the valve, said weight having a lug which engages the bracket, a trip-lever adapted to release the weight, a float located within the tank upon the other guide-rod, and a chain connected to the trip-lever and operated by the float, substantially as shown and for the purpose set forth.

7. In an automatic cut-off for storage-tanks, the combination with the valve in the discharge-pipe and handle connected to the valve, of a bracket supported upon the tank and having guide-rods, a sliding weight mounted upon one of the guide-rods and provided with a lug which engages the bracket, the handle of the valve projecting within the path of the weight, a trip-lever pivoted within the bracket and adapted to release the weight; together with a float located within the tank upon the other guide-rod, said float having a vertical opening through the same, a chain extending from the trip-lever through the opening in the float, and a ring adjustably connected to the chain, substantially as shown and for the purpose set forth.

8. In an automatic cut-off for storage-tanks, the combination with the discharge-pipe and valve, of a handle connected to the plug of the valve and having a bifurcated end, a bracket supported upon the tank and having

a guide-rod which depends within the bifur-
cated end of the handle, a weight sliding upon
the guide-rod and having a lug which engages
the bracket, a trip-lever pivoted within the
5 bracket and adapted to release the weight,
and a float mounted within the tank and con-
nected to the trip-lever, substantially as
shown and for the purpose set forth.

In testimony whereof we have signed this

specification in the presence of two subscrib- ing witnesses.

NELSON GUYER.
JOHN P. KELLY.
AARON KISSELL.

Witnesses:

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H. FENBERG.