March 10, 1925. 1,529,585

T. F. GAMESON ET AL.

AUTOMATIC FEED CONTROL FOR LIQUID STORAGE SYSTEMS

Filed Feb. 14, 1924

Fig. 1.

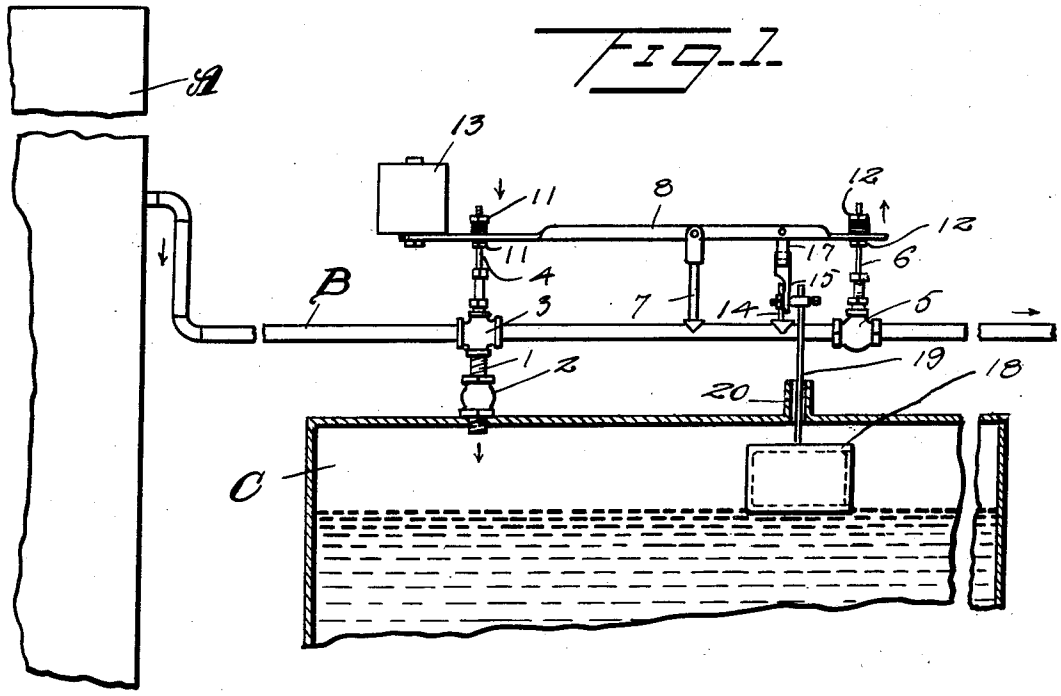


Fig. 2.

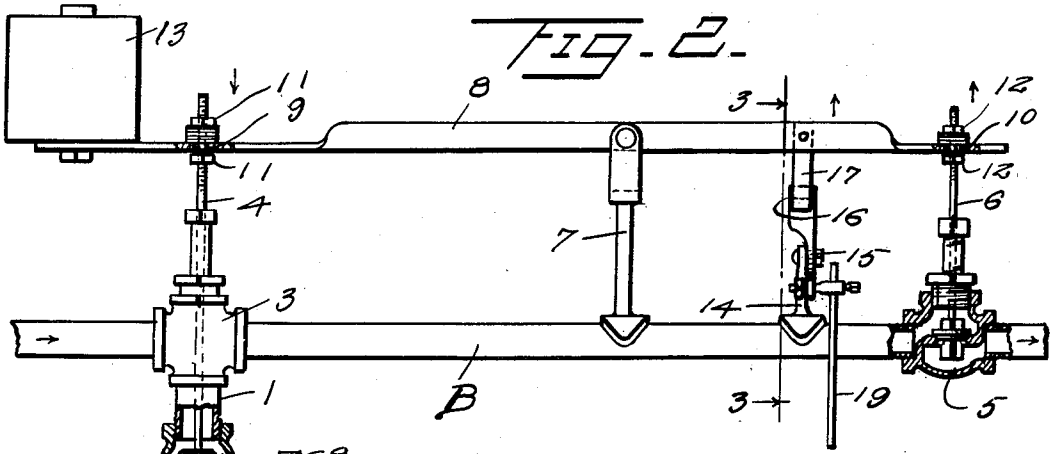


Fig. 3.

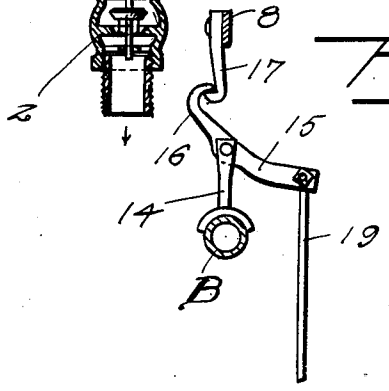
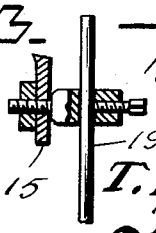


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS F. GAMESON AND THOMAS F. DAVIS, OF WILSON, OKLAHOMA.

AUTOMATIC FEED CONTROL FOR LIQUID-STORAGE SYSTEMS.

Application filed February 14, 1924. Serial No. 692,799.

To all whom it may concern:

Be it known that we, THOMAS F. GAMESON and THOMAS F. DAVIS, citizens of the United States, residing at Wilson, in the county of Carter and State of Oklahoma, have invented certain new and useful Improvements in Automatic Feed Controls for Liquid-Storage Systems; 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 the art to which it appertains to make and use the same.

The invention relates to the filling systems of liquid storage tanks and particularly to storage of crude oil from wells and other sources.

It is the practice in oil fields where oil is stored preparatory to shipment to have a plurality of storage tanks connected by a pipe line from the tanks located adjacent to the well, and having connections from this pipe line to each of the storage tanks each connection being controlled by a valve and a valve is also provided in the tank line so that the flow of oil may be cut off in the pipe line and directed into the storage tank by proper manipulation of the valves, and when the tank is filled flow is discontinued to the individual tank and flow leads through the pipe line to other tanks. The system now in vogue requires the attention of two or more men to insure continuous movement of the oil to the storage tanks for economical utilization of the system, as it is necessary that the tank being filled be closely watched to prevent overflow and loss of the oil.

The invention involved in this application provides automatic means for controlling the height of the liquid in each individual storage tank so that when the valve is left open to the tank and the valve closed to prevent flow through the pipe line the flow will continue into the individual tank until a predetermined height is reached when the valve to the tank will be automatically closed and the valve in the pipe line opened to prevent overflow of the liquid in the tank.

The invention will be described in detail hereinafter and will be found illustrated in the accompanying drawing in which:

Figure 1 is a view showing the tank at the well and the pipe line leading therefrom and the storage tank connected to the pipe line with the automatic feed control in position,

Figure 2 is a view partly in section of the valve control apparatus,

Figure 3 is a cross section on the line 3—3 of Figure 2, and

Figure 4 is a detail of the means for securing the float to the latch lever.

Referring to the drawing in which similar reference characters will be used to designate corresponding parts in the several views, the oil flow tank from the well is designated A, the pipe line therefrom B and a storage tank is designated C.

A branch pipe 1 connects the pipe line B with the storage tank C and a valve 2 is located in said branch line 1, the stem of the valve extending upwardly through the coupling 3, said stem being designated 4, and projecting above the coupling 3. 5 indicates another valve located in the pipe line on the side of branch line 1 remote from tank A, and has a valve stem 6 extending upwardly above the valve casing.

7 indicates a standard supported on pipe B intermediate of the valve stems 4 and 6, and 8 indicates a lever pivotally mounted on the standard 7 and having openings 9 and 10 adjacent its two ends to receive valve stems 4 and 6 respectively. Valve stems 4 and 6 have their extremities threaded and adjusting nuts 11 and 12 are threaded onto said valve stems 4 and 6 respectively. 13 is a weight on the end of lever 8 to actuate said lever normally into position to close the valve 2 and to open valve 5.

14 is another standard erected on pipe line B and 15 a lever fulcrumed on said standard and having one of its ends formed with a hook 16 to engage hook 17 secured to lever 8. 18 is a float having a stem 19 pivotally mounted on the lever 15 at the end remote from the hook 16, and 20 is a tubular guide secured in the top of storage tank C for the stem 19.

As shown in the drawing, Figure 1, the pipe line B is extended beyond valve 5 to supply other storage tanks similar to tank C and having a feed device similar to the device herein above described to automatically cut off the flow of oil or other liquid to the tank when a predetermined height in the tank has been reached.

It will be understood that in the operation of the invention, when it is desired to

fill one of the tanks C, the lever 8 is adjusted so that hook 16 engages hook 17 thus opening valve 2 to permit the flow of the liquid to the tank and closing valve 5 to cut off the flow. The liquid will then flow into the tank C until the tank is filled and the float 18 will be raised releasing hook 16 from engagement with hook 17. The lever 8 will then be actuated by the weight 13 to close valve 2 and shut off the feed of the liquid to the tank C and permit the flow through the tank line beyond valve 5.

What is claimed is:

In combination with a pipe line for liquid adapted to supply a plurality of storage tanks, a branch pipe connecting said pipe line with an individual tank, a normally closed valve in said branch pipe, a normally open valve in the pipe line, a lever suitably fulcrumed and arranged to actuate said valve, a hook secured to said lever, another lever suitably fulcrumed and having a hooked end to engage the hook on the lever to hold the lever in normal position, and a float located in the tank and connected with the last mentioned lever.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS F. GAMESON.
THOMAS F. DAVIS.

Witnesses:
R. L. JOLLIFF,
R. E. HOLLIMAN.