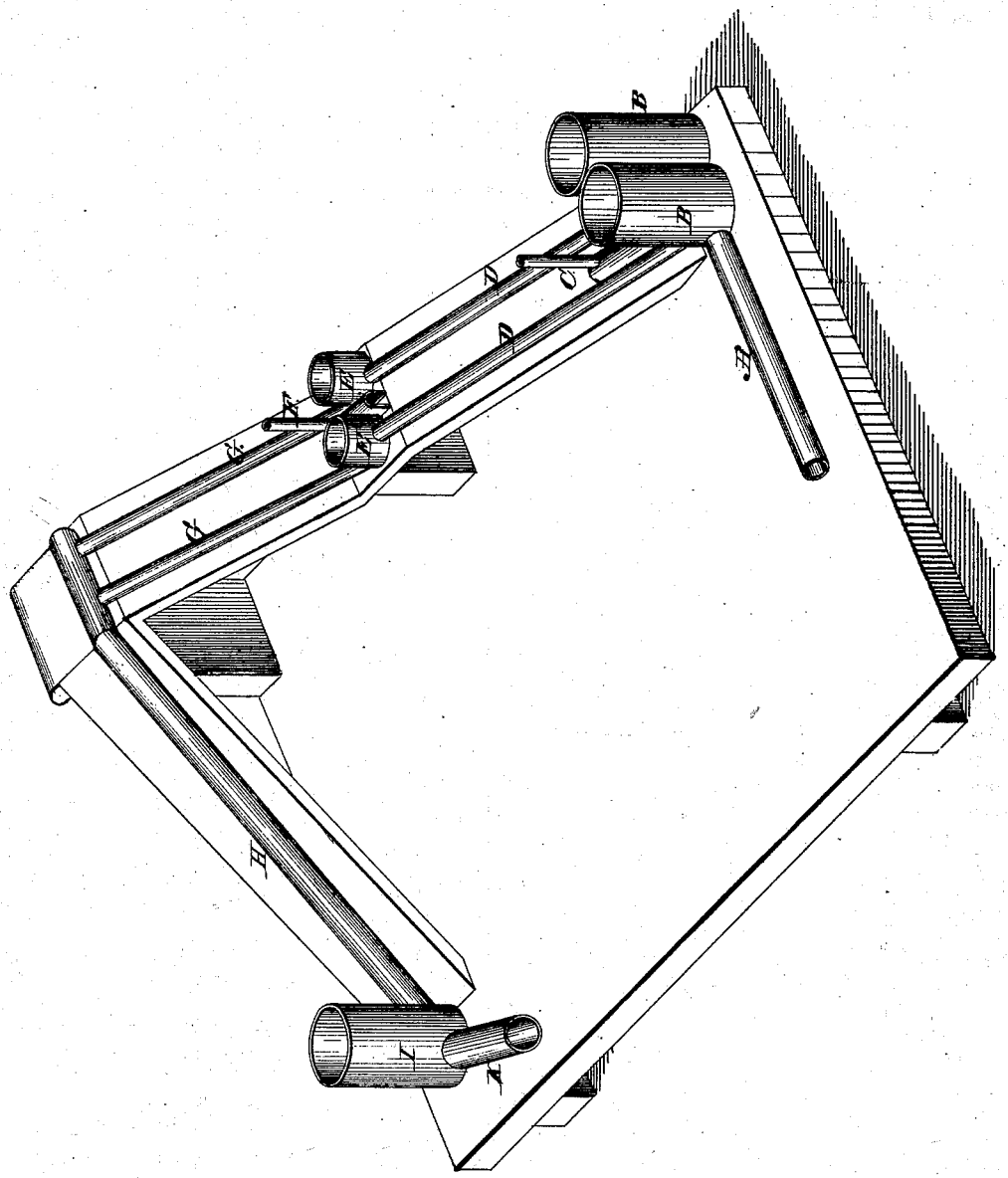
R. A. WILDER.

Means for Transporting Petroleum Oil.

No. 206,990. Patented Aug. 13, 1878.



Witnesses:

M. E. Keller.

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Inventor:

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RUFUS A. WILDER, OF CRESSONA, PENNSYLVANIA.

IMPROVEMENT IN MEANS FOR TRANSPORTING PETROLEUM-OIL.

Specification forming part of Letters Patent No. **206,990**, dated August 13, 1878; application filed June 19, 1878.

To all whom it may concern:

Be it known that I, RUFUS A. WILDER, of Cressona, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Improvement in the Transportation of Petroleum-Oil, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing.

The object of my invention is to elevate and transport petroleum-oil by means of receiving-tanks, pumping through ascending inclined pipes, arranged in connected sections of suitable height, and descending gravity main pipes leading in the direction of the market.

The invention is illustrated more in detail in the drawing, showing a perspective view of the means employed. In this it is not deemed necessary to show the pumps, as they are supposed to be connected to the stationary engines used to drive them, and they may be of any of the usual forms of force-pumps or lifting-pumps.

The oil is conveyed to the receiving-tanks B B through the main pipe A. From these it is forced, by the stationary pumping machinery C, through the inclined parallel pipes D D, up to the tanks E E of the second section. From these it is again forced up through the parallel pipes G G, by the second stationary pumping machinery, F, to the summit of the lift, where the parallel pipes connect with the main pipe H, which descends the opposite incline in the direction of the market, through which the oil flows by gravity.

The tank I represents a reservoir at the end of the main gravity-pipe; or it may be one of a series I propose to establish along the line to relieve the pressure in the pipes when necessary, and to enable me to make repairs at needed points on the intervening sections without stopping the flow through other parts.

I do not limit myself to a uniform cross-section of main gravity-pipe throughout the line, because it is probable, as a measure of economy, that varying gradients may require pipes of different sizes—as, for instance, where the average descending grades are steep a smaller pipe can be used than where the grades are less, to equalize the quantity passing in a given time, and prevent deposits on the interior surface, resulting from the retarded velocity of the flow from checking the passage of oil, and I propose to use this feature in my improvement when practicable and serviceable. The difference in size of pipes H and K illustrates this feature in my method of operating.

The object of using two or more small ascending pipes, connected at the summit of the lift, with one main gravity-pipe, instead of one large ascending pipe, is to reduce the chances of interruption of the traffic by accident, or for repairs and alterations of machinery used in forcing up the oil.

It is evident that the slope of the ascent to be overcome may be of such character as to require a gravity-pipe to meet the inequality of ground between two or more suitable locations for pumping-stations, and I propose to use them in such cases as a part of my system of transportation, when necessary to economy of working and convenience in locating the plant. Hence I do not limit myself to the close connections of the ascending pumping-stations shown in the drawing.

I claim—

1. The combination of the receiving-pipe A, tank B, pumping-engine C, ascending pipe D, tank E, pumping-engine F, ascending pipe G, and main descending pipe H, when operated in sections, and connected together, substantially as described.

2. Two or more ascending parallel pipes, connected with one descending main gravity-pipe, for the purposes substantially as described.

3. The pipes H and K, of varying sizes, in combination with the tanks I, for the purposes substantially as described.

R. A. WILDER.

Witnesses:
M. E. MILLER,
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