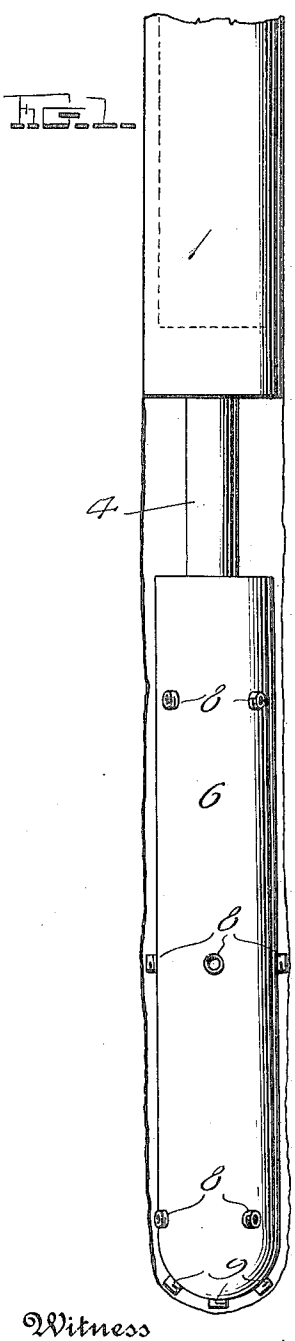
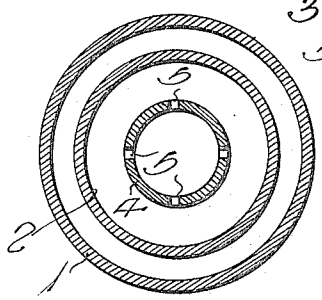
M. A. PALLETTE.

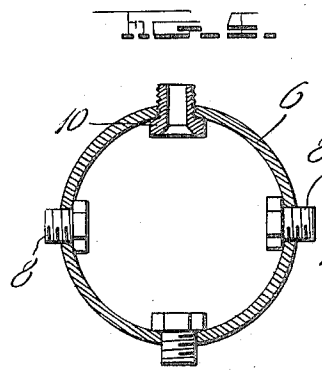
OIL WELL CLEANER.

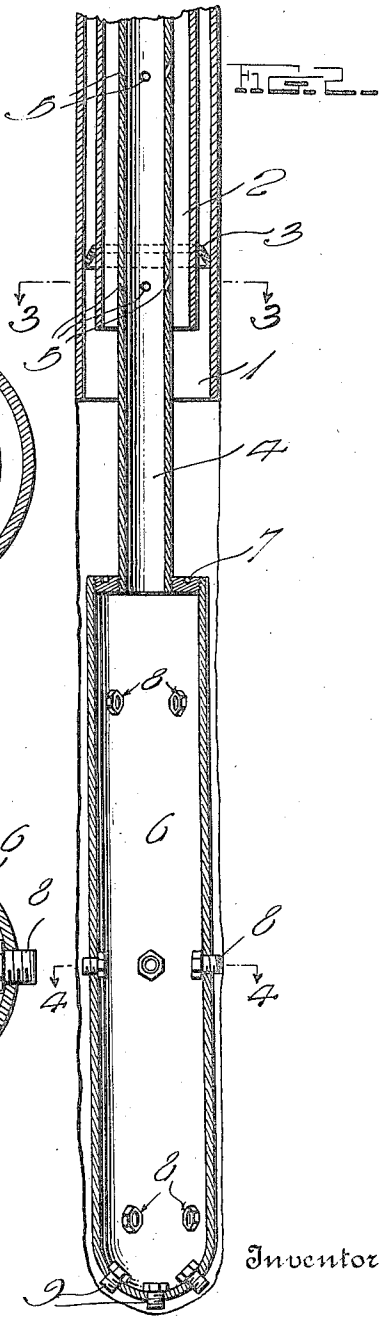
APPLICATION FILED MAR. 28, 1921.

1,400,765. Patented Dec. 20, 1921.









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UNITED STATES PATENT OFFICE.

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OIL-WELL CLEANER.

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To all whom it may concern:

Be it known that I, MELLVILLE A. PALLETTE, a citizen of the United States, residing at Independence, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Oil-Well Cleaners; and I do 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.

This invention relates to an improved oil well cleaner and one object of the invention is to provide a cleaner so constructed that water or steam may be forced down into the well to thoroughly clean the well and remove paraffin, asphalt, sand and other material which may have clogged the well, the device being so constructed that the water, sand and asphalt and paraffin are caused to readily pass up through the cleaner and out of the well.

Another object of the invention is to so construct this cleaner that the water will be caused to pass up through a return pipe through which the feed pipe passes and prevented from passing upwardly through the well casing about the return pipe.

Another object of the invention is to so construct this device that the feed pipe which passes through the return pipe may be provided with openings so constructed that jets of water will be passed outwardly into the return pipe at an upward incline and thus caused to assist upward movement of the returning water through the return pipe.

Another object of the invention is to provide the device with an improved type of distributer head at the lower end of the feed pipe, the head being provided with jets permitting the water or steam to be directed against the sides and bottom of the well.

Another object of the invention is to provide a device of the character described which will be very simple in construction and very easy to operate.

This invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a view showing the device in elevation as it would appear when in use.

Fig. 2 is a longitudinal sectional view through the structure of Fig. 1.

Fig. 3 is a transverse sectional view taken along the line 3—3 of Fig. 2.

Fig. 4 is a sectional view taken along the line 4—4 of Fig. 2.

This improved well cleaner is for use in cleaning an oil well which has become clogged by asphalt, paraffin or other substances and when in use will be passed down through the well casing 1 so that the lower or bottom portion of the well beneath the lower end of the casing may be thoroughly cleaned and the substance which is clogging the well broken loose and the particles thereof carried upwardly out of the well. In an oil well, it is the portion of the well below the lower end of the casing which becomes clogged and it is this portion of the well which must be cleaned when the flow of oil decreases. The return pipe through which the water will pass upwardly out of the well is in the form of a pipe or tube 2 and is of smaller diameter than the casing 1 and will thus be positioned in spaced relation to the casing when in place. A gasket 3 is carried by the lower end portion of this return pipe or tube and engages the walls of the well casing thus closing the space between the casing and the lower end portion of the pipe 2 to prevent water from passing up through this space instead of passing up through the return pipe. The feed pipe 4 extends down through the return pipe to a point below the lower end of the well casing and within the return pipe is provided with discharge openings 5 which are cut to extend outwardly and upwardly and thus cause water which passes through these openings to be projected upwardly through the return pipe. These openings will be provided at points throughout the length of the feed pipe so that at short intervals throughout the length of the return pipe there will be provided jets of water directed upwardly and thus serving to assist in causing the water to flow up through the return pipe and carry with it the particles which have been broken out of the well bottom. The cutting nozzle 6 which may be termed a distributer head is in the form of an elongated hollow body closed at its lower end and at its upper end internally threaded so that this head or nozzle may be connected with the lower end

of the feed pipe 4 by means of a disk or block 7. This hollow head 6 is provided throughout its length with side openings to receive the nozzle 8 for directing water and steam against the sides of the well, and has its closed end also provided with openings to receive the nozzle 9 for directing water and steam against the bottom of the well. Each of these nozzles is formed as shown in Fig. 4 and is in the form of a short hollow externally threaded nipple which passes through a threaded opening in the head 6 and is provided at its inner end with an outstanding collar 10 for engaging the inner face of the head and thus limiting outward movement of the nozzle.

When this device is in use, it is inserted with the head 6 positioned in the bottom of the well below the casing and the return pipe terminating short of the lower end of the casing as shown in Fig. 2. The water is directed down through the feed pipe 4 and will pass out through the openings 5 and also out through the nozzles 8 and 9. The jets of water which strike against the sides and bottom of the well will loosen the asphalt, paraffin and other material clogged in the well and break this material up into fine particles which will be carried upwardly with the water as it moves upwardly through the return pipe 2. The jets of water which pass upwardly into this pipe 2 through the openings 5 will cause the material floating in the water to be directed upwardly and thus the material will be easily carried to the upper end of the well through the pipe 2. The gasket 3 will prevent the water from passing up through the well casing. In addition to causing the material to be carried upwardly through the pipe 2 very easily, the jets from the openings 5 will also serve to loosen any material which may have a tendency to adhere to the inner face of the pipe 2. After the well has been thoroughly cleaned, the water can be pumped out and steam can then be forced down through the pipe 4 to thoroughly heat and dry the well and thus leave it in good condition for further service. When no longer needed the cleaner will be removed and put away until again needed. It will thus be seen that there has been provided a well cleaning device which can be very easily used and which will be very efficient in operation.

I claim:

1. A well cleaner comprising a feed pipe, a distributer head carried thereby, and a fluid return pipe about the feed pipe, the feed pipe having outlets for directing fluid upwardly through the return pipe.

2. The structure of claim 1 and means carried by the return pipe for engaging a well casing to prevent returning fluid from passing upwardly between the return pipe and well casing.

3. A well cleaner comprising a feed pipe, a return tube for fitting in a well casing about the feed pipe and in spaced relation to the pipe and casing, sealing means about the lower end portion of the tube engaging the casing, and a hollow head carried by the lower end of the pipe and provided with fluid outlets, the pipe being provided with outlets for directing fluid upwardly through the tube.

4. A well cleaner comprising a return tube for fitting into a well casing and terminating short of the lower end thereof, a feed pipe for extending through the tube and below the lower end of the casing and within the tube provided with outlets for directing fluid upwardly through the tube, and a hollow head carried by the lower end of the pipe and provided with outlets for directing fluid against the walls and bottom of a well.

5. A well cleaner comprising a cleaner tubing for extending longitudinally in a well casing, a gasket carried by the tubing and engaging the inner face of the casing, a feed pipe extending through the tubing provided with side openings cut outwardly at an upward incline, a hollow head connected with the lower end of said pipe and closed at the lower end, and threaded nozzles passing through the sides and closed end of the head and having abutment heads at their inner ends for limiting outward movement.

In testimony whereof I have hereunto set my hand.

MELLVILLE A. PALLETTE.

Witnesses:

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