

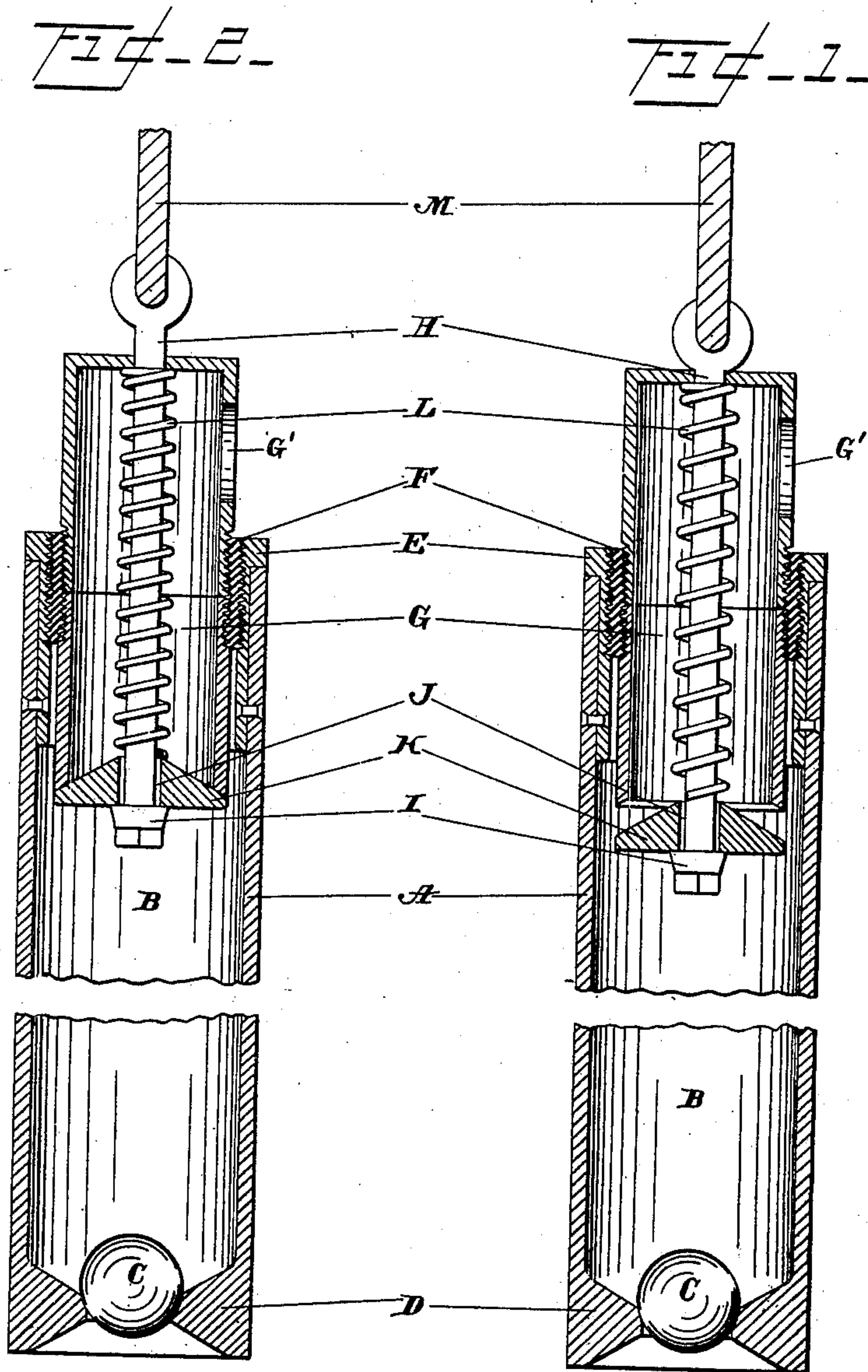
No. 686,951.

Patented Nov. 19, 1901.

W. PLOTTS.
WELL BAILER.

(Application filed July 22, 1901.)

(No Model.)



WITNESSES

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WILLIAM PLOTTS, OF WHITTIER, CALIFORNIA.

WELL-BAILER.

SPECIFICATION forming part of Letters Patent No. 686,951, dated November 19, 1901.

Application filed July 22, 1901. Serial No. 69,322. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PLOTTS, a citizen of the United States, residing at Whittier, in the county of Los Angeles, State of California, have invented new and useful Improvements in Well-Bailers, of which the following is a specification.

My invention relates to improvements in bailers for drilled wells; and the object thereof is to provide a bailer of simple construction and great efficiency in bringing up detritus from the bottom of the hole. I accomplish this object by the bailer described herein and illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section of my bailer ready for use in the well-hole. Fig. 2 is a similar view of the bailer after it is raised out of the hole.

In drilling wells to considerable depth there is usually a considerable column of fluid in the hole, and particularly in oil-wells. As the hole nears the oil strata there is more or less gas found, which mixes with the detritus. The bailer is filled with the detritus at the bottom of the hole under great pressure, depending on the depth of the hole, and as the bailer is raised toward the top of the hole the pressure decreases. With the bailer in common use, which is open at the top, there is nothing to prevent the detritus from expanding and flowing over the top, and thereby losing a large percentage of the detritus with which it was filled at the bottom of the hole. With my improved bailer I obviate this objection by retaining and raising all the detritus in the bailer which it contained as it started from the bottom of the hole.

In the drawings, A is the casing of the pressure-retaining detritus-chamber B, which is provided at the bottom thereof with any suitable inwardly-opening valve. I have illustrated my bailer provided with a ball-valve C, which rests on valve-seat D in the bottom of the detritus-chamber, as that is a convenient form of valve. To the top of the pressure-retaining chamber is rigidly affixed, by means of a collar E and reducer F, an upper chamber G, which opens into the pressure-retaining chamber. This upper chamber will be designated herein as the "pressure-discharge" chamber and is provided on

one side thereof with a discharge-opening G'. Passing through the pressure-discharge chamber is stem H, to the bottom of which is rigidly affixed valve I, adapted to normally close the central opening J in disk K, which loosely surrounds stem H just above valve I and which, together with the stem H and valve I, is adapted to close the entrance or mouth of the pressure-discharge chamber when the bailer is loaded with detritus and is being withdrawn from the hole. Surrounding stem H within the pressure-discharge chamber is spiral spring L, one end of which rests against the top of the chamber and the other end rests against the disk K and keeps the mouth of the chamber open, except when the bailer is loaded and is being drawn up in the hole. To the top of stem H is attached cable M, by means of which the bailer is lowered into and raised from the well-hole.

In the operation of my bailer it is lowered into the well-hole by the cable. It passes through the water or other liquid and plastic detritus in the hole until the bottom thereof is reached, the valve in the bottom thereof and the discharge-opening in the pressure-discharge chamber permitting the matter in the hole to pass through the bailer. As soon as the bailer is started toward the top the weight of the material in the pressure-retaining chamber overcomes the resiliency of the spring on stem H, and the valve and disk on the end of the stem close the mouth of the pressure-discharge chamber, and the detritus is trapped in the pressure-retaining chamber, and no part thereof can escape therefrom until the top of the hole is reached and the pressure on the valve in the top of the chamber is relieved. This pressure is very great when a very deep hole is being cleaned and is relieved by pressing down the stem, which carries the valve I away from disk K, and permitting the pressure to blow off through opening J in the disk and thence out through aperture G'. After a certain amount of the pressure blows off this way spring L will carry disk K away from the mouth of the pressure-discharge chamber, and the remainder of the pressure in the pressure-retaining chamber will blow off, and the contents of the chamber can then be emptied in the usual manner. It will be observed that by this construction of a

bailer no matter how deep the hole may be the bailer will always come to the top of the hole filled with detritus of the same density as the matter at the bottom of the hole.

5 A cage with valve-seat at the bottom thereof could be affixed to the top of the pressure-retaining chamber and the stem, valve-disk, and spring mounted therein in the same manner as in the pressure-discharge chamber, 10 and other means might be adopted for blowing off the pressure of the pressure-retaining chamber without departing from the spirit of my invention, the essential features of which are, in a bailer, a detritus-retaining 15 chamber having inwardly-opening valves at the top and bottom thereof and means to keep the upper valve open on the descent of the bailer and closed on its ascent and means to relieve the pressure in the chamber when 20 the bailer is removed from the hole.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

25 1. In a bailer for drilled wells, a detritus-chamber having inwardly-opening valves at the top and bottom thereof, means to keep the top valve open on the descent of the

bailer, and closed on the ascent thereof; and means to relieve the pressure in the chamber on its removal from the well-hole. 30

2. The herein-described bailer, for drilled wells, comprising a pressure detritus-retaining chamber; an inwardly-opening valve in the bottom of said chamber; a pressure-discharge chamber, having an opening in the 35 side, connected to, and opening into, the pressure-retaining chamber; a stem extending longitudinally through the pressure-discharge chamber; a valve rigidly affixed to the end of said stem; a disk loosely mounted 40 on said stem above said valve; a spring surrounding said stem in said pressure-discharge chamber, one end of which rests on the disk, and the other on the end of the chamber, and adapted to normally keep said disk from seat- 45 ing itself on the mouth of said pressure-discharge chamber.

In witness that I claim the foregoing I have hereunto subscribed my name this 13th day of July, 1901.

WILLIAM PLOTTS.

Witnesses:

M. T. OWENS,

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