

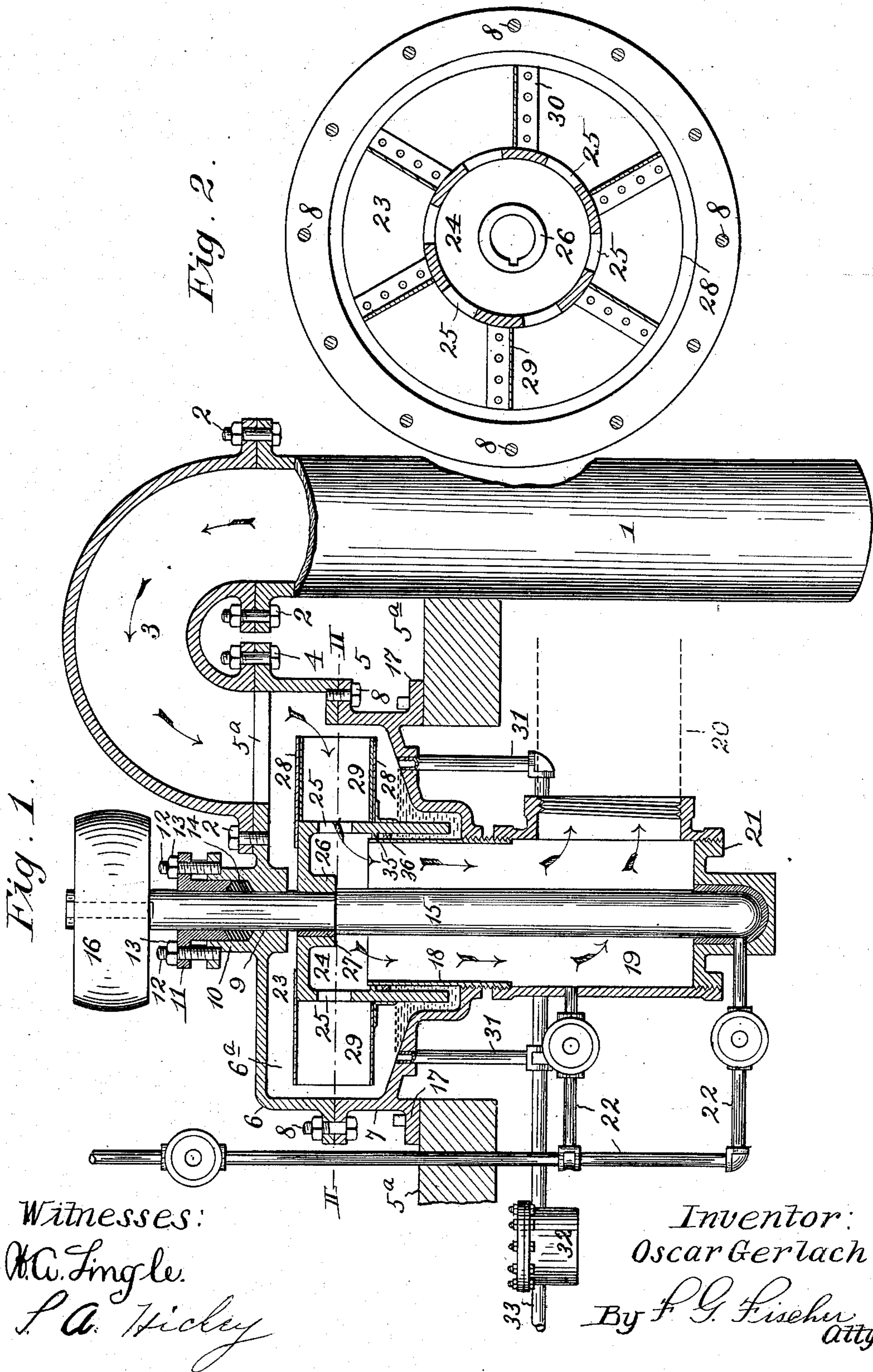
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GAS SEPARATOR.

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NO MODEL.



UNITED STATES PATENT OFFICE.

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GAS-SEPARATOR.

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Application filed March 23, 1903. Serial No. 149,233. (No model.)

To all whom it may concern:

Be it known that I, OSCAR GERLACH, a citizen of the German Empire, residing at Iola, in the county of Allen and State of Kansas, have
 5 invented certain new and useful Improvements in Apparatus for Separating Gas from Water, of which the following is a specification.

My invention relates to improvements in apparatus for separating gas from water, and
 10 is especially adapted for use in connection with natural-gas wells from which the gas issues with sufficient force to carry therewith the water and moisture that usually accumulates at the bottom of said wells.

The essential feature of the invention may be said to consist in a rotary fan of peculiar construction through which the gas may be
 15 pumped or forced by its own pressure and escapes into a receiver, from which it may be drawn as required, while the water in the gas
 20 is struck by the blades of the swiftly-moving fan and precipitated upon a bottom disk of the latter, from which it is thrown by centrifugal force into a sealed chamber and from
 25 there conducted to and discharged at a suitable point from the well.

The invention may be said to further consist in the novel arrangement and combination of parts hereinafter described, and more
 30 particularly pointed out in the claim.

In the accompanying drawings, which illustrate my invention, Figure 1 represents a vertical central sectional view of the apparatus. Fig. 2 is a transverse sectional view of the rotary fan and the shell, taken on line II II of
 35 Fig. 1.

In the drawings, 1 indicates a pipe leading from the well and connected by bolts 2 to one end of a return-bend 3, which is connected at
 40 its opposite end by bolts 4 to one side of the upper portion of a shell 5, with which it communicates through opening 5^a. Said shell consists of two cup-like sections 6 7, connected at their meeting portions by bolts 8, a nipple 18 engaging the bottom portion of section
 45 7 and a T-coupling 19 engaging the lower threaded end of the nipple.

Section 6 is provided at its upper portion with a central bearing 9 and a stuffing-box 10,
 50 having a gland 11 adjustably secured in posi-

tion by stud-bolts 12 and taps 13 for the purpose of compressing packing 14 around a vertical shaft 15, journaled in bearing 9 and a step-bearing hereinafter referred to. Shaft 15 is provided at its upper end with a rigidly-
 55 mounted pulley 16, which may be belted to a suitable motor. (Not shown.)

Section 7 is supported upon a platform 5^a by an integral flange 17, and its reduced bottom portion is provided with a threaded central aperture for the reception of nipple 18,
 60 which extends upwardly into chamber 6^a, formed by sections 6 and 7, as shown in Fig. 1.

T 19 has an outlet-pipe 20, leading to a receiver, (not shown,) and its lower end is closed
 65 by a screw-plug 21, provided with the step-bearing above referred to for the reception of the lower rounded end of shaft 15, having valve-controlled lubricant-supply pipes 22 communicating therewith.
 70

23 designates a rotary fan located within chamber 6^a, and it consists of an inverted-cup-shaped casting 24, circular flanges 28, secured to the top and central portion of said casting, and radial blades 29, provided with top and
 75 bottom flanges 30, which are riveted to the circular flanges.

Casting 24 is provided with peripheral apertures 25 and a central hub 26, whereby it is mounted upon shaft 15, to which it is secured by a key 27. The lower end of the casting extends down and around the upper portion of the nipple, and the joint between the two is sealed by the water separated from
 80 the gas, which submerges the lower end of said extension.

The surplus water accumulating in chamber 6^a is conducted therefrom by drain-pipes 31, leading from the chamber to a trap 32, provided to prevent the escape of the gas with
 90 the water, which latter is discharged through an outlet-pipe 33.

As the gas issues from the well through pipe 1 and enters chamber 6^a it flows through apertures 25 in the rotary fan and escapes into
 95 the receiver through nipple 18, T 19, and pipe 20, while the water in the gas is struck by the swiftly-moving blades 29, which precipitate it to the bottom disk 28 and is discharged by the centrifugal force of the fan into chamber
 100

6^a, from which it is trapped in order to prevent the gas from escaping therewith before the gas passes through apertures 25. After passing through the latter the gas is prevented
5 from escaping back into the chamber through the space between the upper portion of the nipple and the extended lower end of casting 24 by the water seal in the chamber and by flanges 35 36, secured to the casting and the
10 nipple.

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

In an apparatus of the character described,
15 a casing provided with inlet and outlet ports and comprising two cup-shaped sections the upper one of which is provided with a central bearing, while the lower one has a reduced bottom portion provided with a central
20 threaded opening, a threaded nipple engaging

the threaded opening of the casting and extending upwardly in the latter a suitable distance, a T secured to the lower threaded end of the nipple, an outlet-pipe leading from the T, and a plug closing the lower end of the T 25 and provided with a step-bearing; a shaft journaled in the bearings, a fan rigidly mounted upon the shaft and provided with apertures, an extension forming part of the fan and surrounding the upper portion of the nipple, and 30 drain-pipes communicating with the lower cup-shaped casting at a point above the lower end of the extension on the fan.

In testimony whereof I affix my signature in the presence of two witnesses.

OSCAR GERLACH.

Witnesses:

A. C. RANKIN,
J. A. WHEELER.