

C. A. WAITZ.

CASING HEAD.

APPLICATION FILED APR. 18, 1906. RENEWED NOV. 10, 1908.

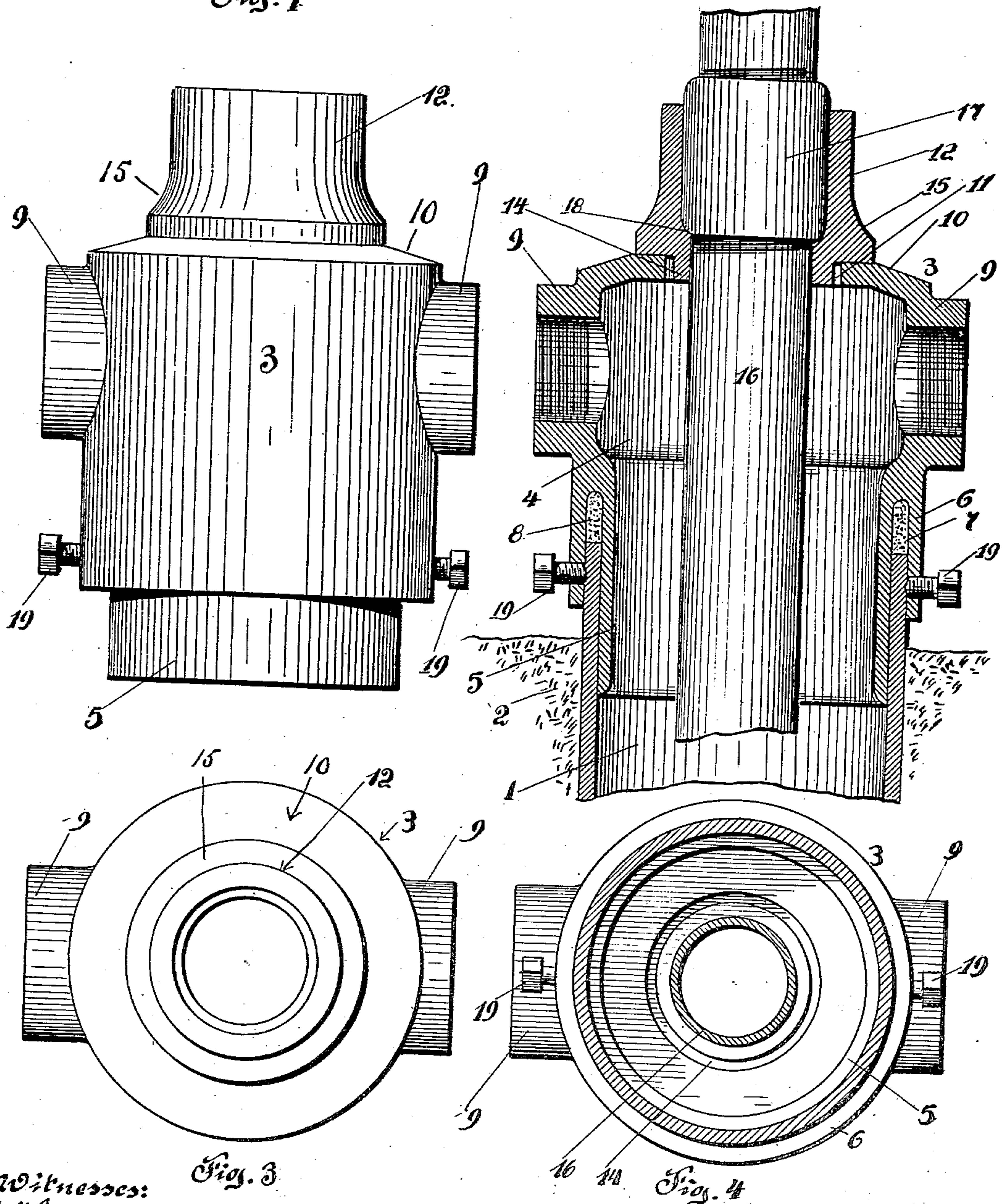
910,885.

Patented Jan. 26, 1909.

2 SHEETS—SHEET 1.

Fig. 2.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 5

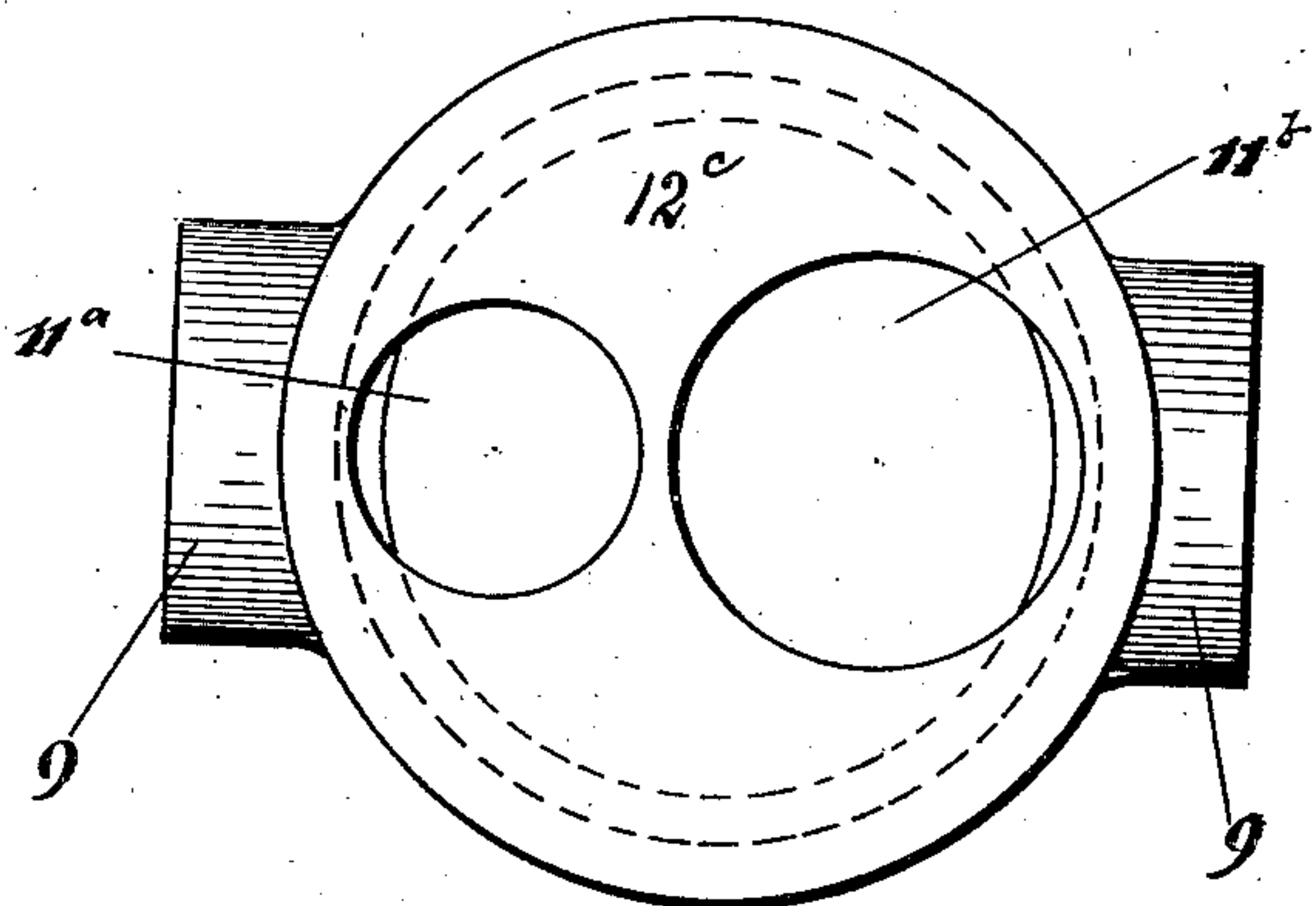
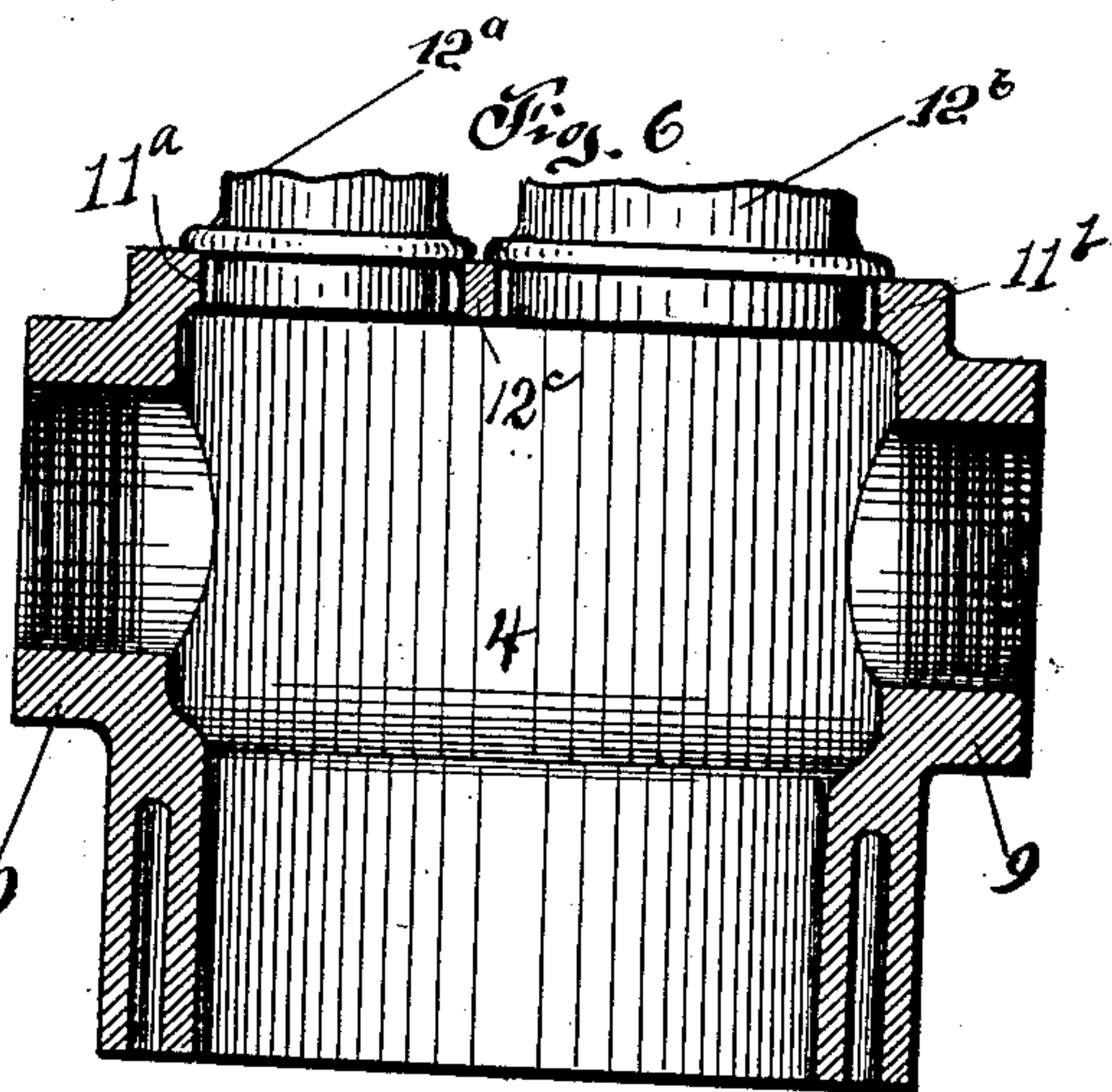
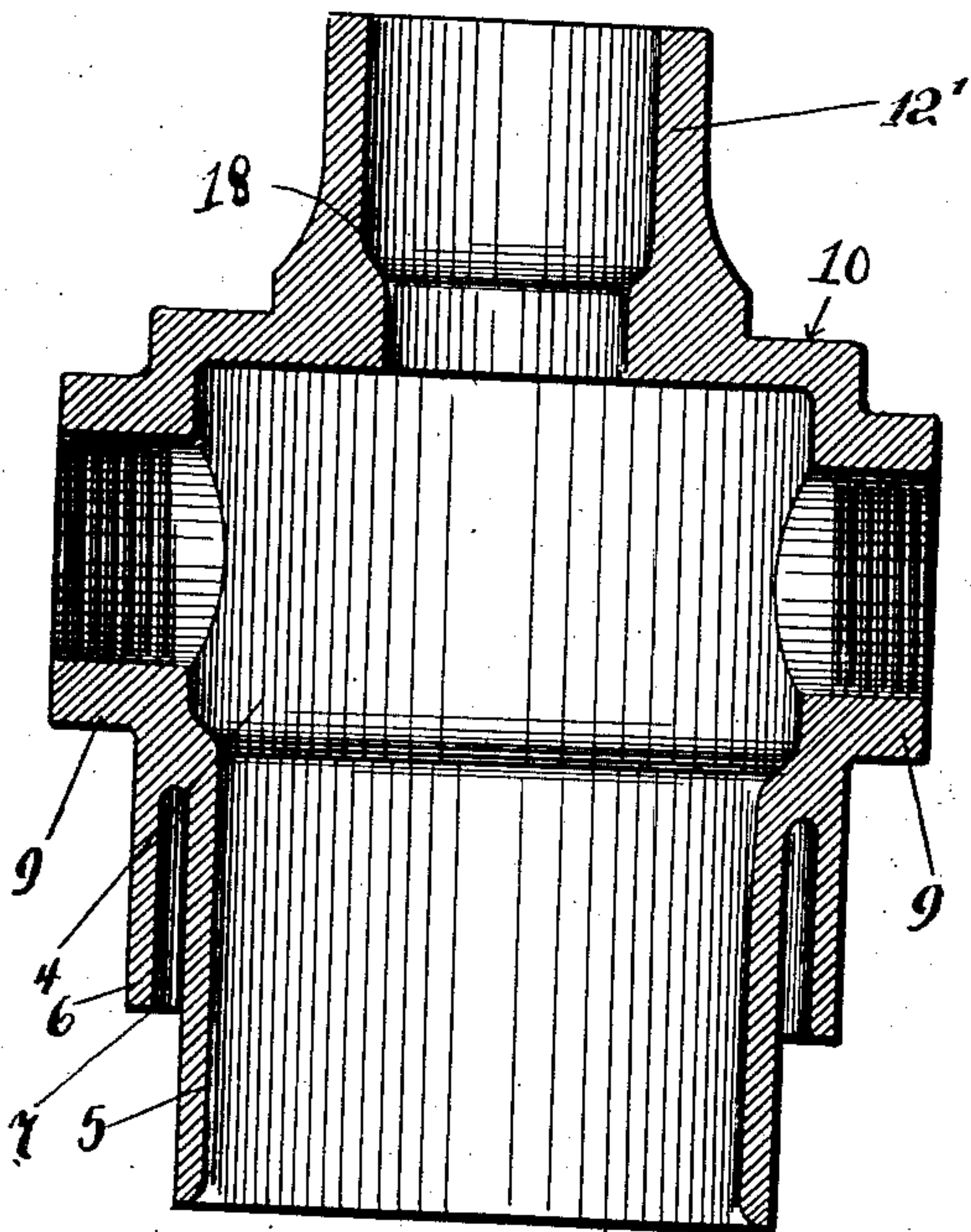


Fig. 7

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# UNITED STATES PATENT OFFICE

CHARLES A. WAITZ, OF ROUSEVILLE, PENNSYLVANIA.

## CASING-HEAD.

No. 910,885.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed April 18, 1906, Serial No. 312,365. Renewed November 10, 1908. Serial No. 461,961.

*To all whom it may concern:*

Be it known that I, CHARLES A. WAITZ, a citizen of the United States of America, residing at Rouseville, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Casing-Heads, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to certain new and useful improvements in casing heads for oil wells, and the invention relates particularly to that type of casing head designed to support a tubing in the casing of an oil well.

15 It is now generally the custom in shallow territory (300 to 1200 feet in depth) that when a well has been completed the drilling rig, including the derrick is removed, and in many cases where the derrick is removed or  
20 blown down, to put up a pole, or poles instead of a derrick built of lumber, using the ground for derrick floor. The drilling, or derrick floor, is usually above the ground, and the well being cased to the top of the  
25 floor, would leave the casing-head too high above the ground if put on top of the casing when said floor is removed, which necessitates cutting and threading the casing at the desired level, causing considerable expense.

30 The head which I have devised primarily involves in combination with a casing, a safety top, capable of supporting one or more tubings within a casing. Upon the basis of this combination, the application comprehends first, a two-part casting in the form of  
35 a casing head; second, a head having an integral safety top; third, a safety top capable of being cut to permit lowering the tubing before raising; and lastly, a casing head  
40 wherein a tight and effective joint can be established between the head and the casing of an oil well.

With the above and other objects in view, which will more readily appear as the nature  
45 of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts to be hereinafter more fully described, illustrated and claimed.

50 The essential features of the present invention involved in carrying out the objects

above specified, are necessarily susceptible to structural change without departing from the scope of the invention; but the preferred embodiments of the same are shown in the  
55 accompanying drawings, wherein like numerals of reference designate corresponding parts throughout the several views, in which:—

Figure 1 is a side elevation of my improved casing head, Fig. 2 is a vertical sectional  
60 view of the same, illustrating the head as mounted upon the upper end of the casing of a well, and supporting a tubing therein, Fig. 3 is a plan of the head, Fig. 4 is a bottom plan of the head illustrating a casing and tubing  
65 mounted therein, the casing and tubing being shown in section. Fig. 5 is a central vertical sectional view of a casing head showing a preferred embodiment of my invention, in  
70 which the safety top is made integral with the casing head. Fig. 6 is a similar view of another modification illustrating a head provided with a double safety top, and Fig. 7 is a plan of the head illustrated in Fig. 6 of the  
75 drawings.

In the accompanying drawings, the reference numeral 1 designates the upper end of an oil well casing, this end of the casing having been cut at a desired level relative to the  
80 ground 2 or the derrick floor (not shown) of an oil well rigging.

My invention resides in the novel casing head 3 which is mounted upon the upper end of the casing 1. The head 3 consists of a cylindrical body including a cylindrical portion 4 and carrying a depending sleeve 5  
85 which is adapted to fit within the casing 1. The cylindrical body portion 4 of the head is provided with a depending annular apron 6, which surrounds the sleeve 5 and provides  
90 an annular vertically disposed pocket 7 to receive the upper end of the casing 1. The pocket prior to receiving the upper end of the casing is provided with a suitable packing or  
95 stuffing gland 8 adapted to form a tight connection between the upper end of the casing 1 and the head 3.

The cylindrical body portion 4 of the head is provided with two diametrically opposed  
100 interiorly threaded nipples 9, 9 communicating with the chamber, these nipples being adapted to receive the threaded ends of pipes



(not shown) employed for conveying gas from the casing head. The upper end of the cylindrical body portion 4 is partially closed, by an integral inwardly-extending flange, 5 as at 10 forming a central opening 11 over which a safety top 12 is mounted. The safety top 12 conforms to a sleeve having a reduced end 14, extending into the opening 11 of the head 2, while the flared portion 15 supports the safety top upon the flange 10. The safety top 12 is adapted to support a tubing 16 within the head 3 and the casing 1 of an oil well, the coupling 17 of said tubing resting upon the annular shoulder 18 of the contracted end 14 of the safety top. The weight of the tubing 16, which passes downwardly approximately to the bottom of a well, is adapted to retain the safety top 12 upon the head 3, also pressing said head 20 firmly upon the upper end of said casing, thereby providing a tight joint between the casing and said head. In some instances, however, the depending apron or flange 6 can be provided with set screws 19, 19 which 25 may engage the upper end of the casing 1 and firmly hold said head upon said casing.

A preferred and practical embodiment of the generic idea of my invention is illustrated in Fig. 5 of the drawings. In this construction the cylindrical body portion 4 is of the same construction generally, as heretofore described for the construction shown in Figs. 1 to 4, that is, it is provided with the depending sleeve 5, the annular portion or skirt 6, 35 with space 7 between said skirt or portion 6, and the sleeve 5, and the interiorly screw-threaded nipples 9 located at opposite sides of the body portion in alinement with each other. In this construction however, the 40 inwardly-extending flange 10 which apparently closes the casing at the top has the safety top 12' integral therewith, instead of being separate therefrom as in the construction shown in Figs. 1 to 4. It will be noted 45 that in this construction, as well as in the construction shown in Figs. 1 to 4, that the safety top is carried by the annular inwardly extending flange 10, which flange is integral with the body portion in both forms of construction. The safety top 12' in the construction shown in Fig. 5 has the same interior construction as the form of safety top 50 shown in Figs. 1 and 2, that is, it is chambered at its upper end interiorly forming an annular shoulder 18 on which the coupling of the tubing is adapted to rest in the same manner as is shown in Fig. 2 of the drawings.

In Figs. 6 and 7 of the drawings, is shown a further modification of my invention, 60 means being provided by the construction shown in this view for the supporting of the tubing, and the reception of a steam pipe (not shown). The cylindrical body portion 4, in this type of construction is like the con-

struction above described, provided with the 65 interiorly threaded nipples 9, located at opposite sides of the body and alining with each other, but instead of the top of the casing head *per se* comprising only an annular inwardly-extending flange, as in the construction 70 afore described, the top of the said casing has a plate 12<sup>c</sup>, closing the casing at the top with the exception of circular openings 11<sup>a</sup> 11<sup>b</sup>, made in said plate, the opening 11<sup>b</sup> being adapted to receive the lower end of a 75 safety top 12<sup>b</sup>, which is supported on the plate by an annular flange formed on the safety top and engaging the plate in the same manner as the flange on the safety top engages flange 10 in the construction shown 80 in Fig. 2; similarly, the opening 11<sup>a</sup> receives a safety top 12<sup>a</sup>, supported on the plate 12<sup>c</sup> in the same manner as the safety top 12<sup>b</sup>. The safety top 12<sup>b</sup> is adapted to support the tubing in the same manner as shown in Fig. 85 2, while the safety top 12<sup>a</sup> is adapted to receive a steam pipe (not shown).

The casing head, as above described, is extremely convenient where both derrick or poles are removed and the tubing or rods removed from the well by means of a portable 90 derrick pulling machine, common in the oil well fields at the present day. Another feature of my improved casing head resides in the fact that the head can be located as near 95 the ground as possible, thus permitting of the oil and gas conveying pipes attached to the head being located under the surface of the ground this being essential where the wells are located near creeks or rivers, and on 100 tilled soil, the high water and ice of the creeks and rivers being liable to damage the oil conveying pipes and head if not protected in being located in close proximity to the ground. 105

In providing the casing head with an integral safety top, I dispense with a packed joint heretofore used and by providing the head with the set screws 19, 19 said head will be firmly held upon the casing while the 110 tubing is being removed from a well.

It is thought from the foregoing description that the construction and novel advantages of my improved casing head will be fully understood, and while I have herein 115 described the preferred manner of constructing my improved head, it is obvious that such changes, in the size, proportion and minor details of construction, as are permissible by the appended claim, may be resorted 120 to without departing from the spirit and scope of the invention.

What I claim and desire to secure by Letters Patent, is:—

As a new article of manufacture, a casing 125 head comprising a tubular body having an internal chamber and with two depending separated sleeves on its lower end forming an



annular space to receive the upper end of a casing and having pipe receiving openings in its opposite sides, an inwardly extending flange projecting over the chamber and the  
5 casing head, and a safety top carried by said flange with its lower end projecting only to the lower face of the flange.

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

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Witnesses:

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K. H. BUTLER.