Sept. 20, 1927.

L. M. PEARCE ET AL

1,642,745

CASING HEAD

Filed Dec. 18, 1924

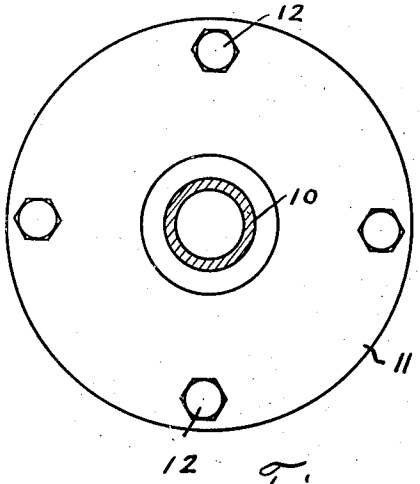


Fig. 2.

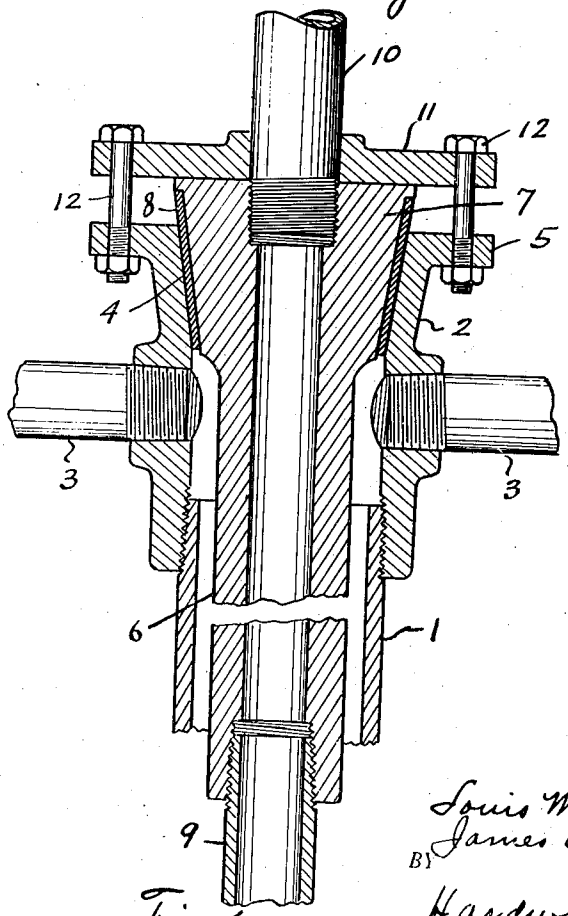


Fig. 1.

INVENTORS
Louis M Pearce
James O McPherson
BY
Hardway & Cathey
ATTORNEYS.

Patented Sept. 20, 1927. 1,642,745

UNITED STATES PATENT OFFICE.

LOUIS M. PEARCE AND JAMES O. McPHERSON, OF HOUSTON, TEXAS.

CASING HEAD.

Application filed December 18, 1924. Serial No. 756,837.

This invention relates to new and useful improvements in a casing head.

One object of the invention is to provide a casing head designed to be attached to the upper end of a well casing and adapted to close the casing so as to prevent the escape, and waste, of oil flowing from the well. The type of casing head herein described has been specially designed to be used in connection with oil wells and forms a support for the pump therein, and also forms a closure for the upper end of the well casing to confine the oil to its proper outlets and to prevent the escape and waste of said oil.

With the above and other objects in view this invention has particular relation to certain novel features of construction, operation and arrangements of parts, an example of which is given in this specification, and illustrated in the accompanying drawings, wherein:—

Figure 1 shows a vertical sectional view of the device, and

Figure 2 shows a plan view thereof.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 designates the well casing to the upper end of which the casing head bowl 2 is attached. This bowl has the lateral outlets 3, 3 and its upper end is formed with an upwardly flared seat 4 and an annular outwardly extending rim 5.

The numeral 6 designates a tubular connecting nipple whose upper end is enlarged forming the upwardly flared head 7, conforming in contour to, and adapted to seat in, the seat 4. A seal, of lead or other soft metal, as 8 surrounds said head and forms a fluid tight joint between the bowl 2 and head 7. The pump tubing 9 is connected to the lower end of the nipple 6 and extends down into the well and supports the pump (not shown) therein. Leading from the upper end of the nipple there is the oil discharge line 10 through which the pumped oil is discharged.

A retaining plate 11 is fitted around the discharge line 10 and rests on the upper end of the head 7 and is bolted to the rim 5 by means of the bolts 12.

Ordinarily the oil will be pumped through the line 10, but should the well start flowing, and the volume of oil become too great for the pump to handle it will be forced up through the casing and out through the outlets 3, 3, but the seal 8 will prevent the escape of oil out through the casing head and its consequent waste, and the retaining plate 11, being bolted to the casing head bowl will prevent the head 7 from being lifted from its seat by pressure within the casing.

It often happens that an oil well catches afire. In such case the seal 8 will melt, but the head 7 is flared sufficiently to prevent its passage through the bowl 2 of the casing head so that, in event of fire, the pump tubing will, in all events, be sustained by the bowl so that the pump cannot drop into the well.

In case the fire becomes hot enough to melt the bowl 2, as sometimes happens, the head 7 will hang on the top of the casing 1 and prevent the pump tubing from dropping into the well. In case of storm should the derrick become blown away, as sometimes happens, carrying the discharge line 10 with it, the nipple 6 being of thick strong material and being firmly secured to the casing head bowl will serve as a secure anchorage for the well tubing beneath and will prevent the same from becoming bent or from dropping in the well.

What we claim is:—

1. A casing head including a bowl adapted to be secured to the upper end of a well casing and having an upwardly flared seat, a tubular member therein having a flared head formed with a surrounding soft metal sleeve and adapted to rest on said seat, said head having a greater transverse diameter than the diameter of the casing, the lower end of said member extending down through and being spaced from the bowl said extended end forming an anchor to which a string of pipe may be attached, and having relatively thick walls.

2. A casing head adapted to be secured to the upper end of a well casing and including a bowl having a flared seat, a tubular supporting member adapted to support a string of pipe and having a flared head adapted to rest on said seat, the lower end of said tubular member extending through the bowl down into the casing and being spaced from the bowl and casing and having walls thicker than the pipe, a retainer abutting against the upper end of said member

and secured to the bowl and annular sleeve formed of soft metal and forming a seal between said flared head and said seat.

3. A casing head adapted to be secured to the upper end of a well casing and including a bowl having a lateral outlet and an upwardly flared seat, a flared head adapted to rest on said seat, the lower end of said head having a tubular extension adapted to extend down through said bowl and into said casing and being reduced to form a tubing connection and having thickened walls, a retaining member secured to the bowl and abutting against the upper end of the head and a sleeve of soft metal forming a seal between said seat and flared head.

4. A casing head adapted to be secured to the upper end of a well casing including a bowl, a closure seated in the bowl and having a larger diameter than the casing, a tubular reduced extension depending from said closure through said bowl and adapted to extend on down into the casing and forming a tubing connection whose walls are thicker than the walls of the tubing, means retaining the closure in place and a sleeve forming a seal between said bowl and closure.

In testimony whereof we have signed our names to this specification.

LOUIS M. PEARCE.
JAMES O. McPHERSON.