

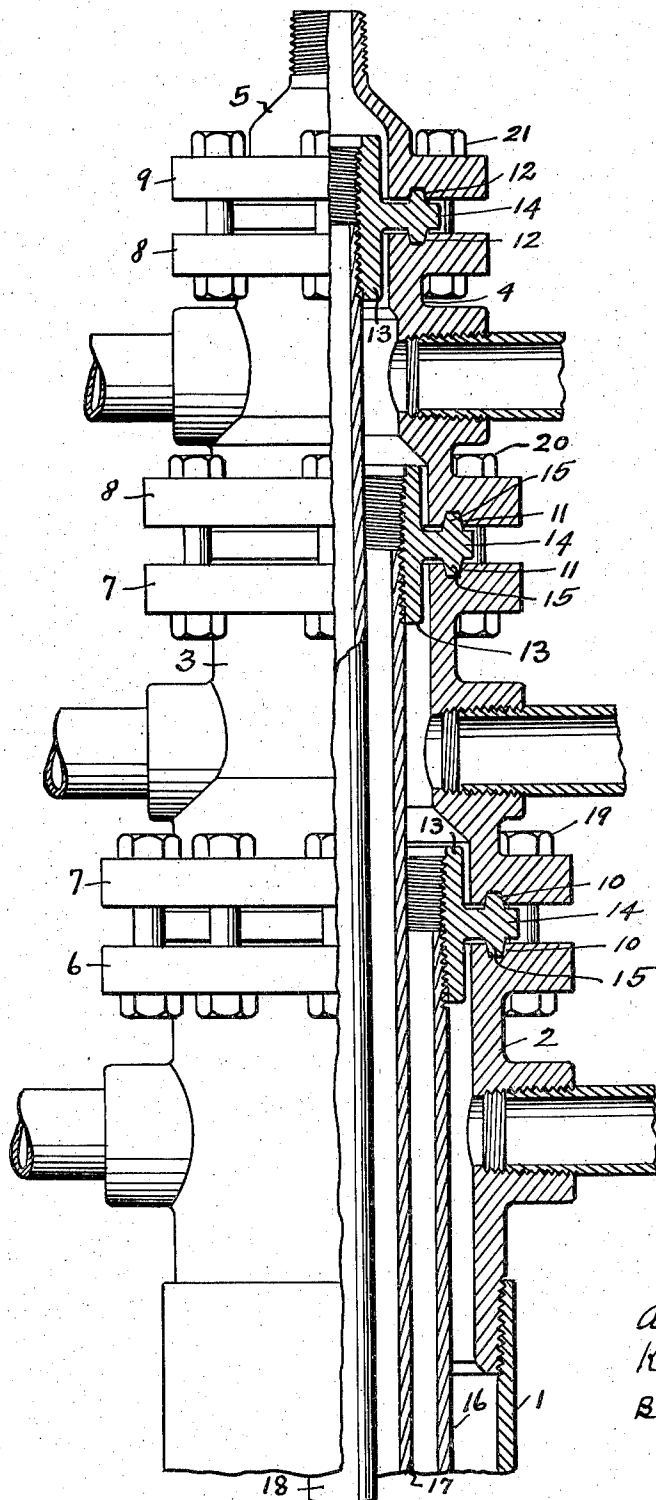
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COMBINATION WELL HEAD AND HANGER

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COMBINATION WELL HEAD AND HANGER

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This invention relates to a combination well head and hanger.

An object of the invention is to provide, in a well head, a novel type of hanger designed not only to anchor an inner pipe, in the head, but also to render the corresponding joint of the head fluid-tight.

Another object of the invention is to provide, in a well head, a tubular hanger for supporting a pipe and having an external seal ring formed integrally therewith whereby the corresponding joint of the well head may be rendered fluid-tight.

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

The figure shows a side view of a well head, partly in section, showing the hanger therein.

In the drawing the numeral 1 designates the outer, or surface, casing to the upper end of which the casing head 2 is attached. A braden head 3 is mounted on the casinghead, and a tubing head 4 is mounted on the braden head. On the tubing head is shown a connection 5 for the attachment of the christmas tree or other flow connections thereto. The hanger may, however, be employed in other combinations than that above specified, and a single hanger, or a plurality of hangers may be used depending on the number of pipes in the well.

The heads 2, 3, and 4, have the respective external annular flanges 6, 7, 7, and 8, 8, as shown, and the connection 5 has the external annular flange 9, said flanges have the registering grooves 10, 10, 11, 11, and 12, 12. The hangers are similar in construction, each being indicated by the numeral 13. Each hanger has an external annular flange 14 and these flanges have the upper and lower ribs, as 15, which fit into the corresponding grooves 10, 11, and 12. The hangers are internally threaded to be screwed on to the upper end of the corresponding inner pipes 16, 17, and 18, respectively, whereby the upper ends of said inner pipes may be anchored to the well head.

The registering flanges of the heads 2, 3, 4, and connection 5 are anchored securely together by means of the bolts 19, 20, and 21, whereby the

ribs 15 are firmly seated in their corresponding grooves to form fluid-tight joints.

The drawing and description disclose what is now considered to be a preferred form of the invention by way of illustration only, while the broad principle of the invention will be defined by the appended claims.

What we claim is:—

1. In combination, an outer pipe, an intermediate pipe and an inner pipe in a well and whose upper ends terminate at different elevations, a lower head, an intermediate head and an upper head, the lower head being attached to the upper end of the outer pipe, a hanger connected to the upper end of the intermediate pipe, a hanger connected to the upper end of the inner pipe, each hanger having similar ends and having an external flange located midway between said ends, said flanges fitting between the intermediate head and the head above and beneath, respectively, the hanger flanges and the abutting parts of the respective heads being formed with interfitted grooves and ribs forming sealing means and which space said heads apart to render leakage past the sealing means visible from the outside of the head, and means connecting the heads together.

2. In combination, an outer pipe, an intermediate pipe and an inner pipe adapted to be located in a well and whose upper ends terminate at different elevations, a lower head attached to the upper end of the outer pipe, an intermediate head and an upper head, said heads having end flanges, a hanger connected to the upper end of the intermediate pipe, a hanger connected to the upper end of the inner pipe, each hanger being tubular and having similar ends having an external flange located approximately midway between its ends, the hanger flanges fitted between the corresponding head flanges, the hanger flanges and the abutting parts of the respective heads being formed with interfitted grooves and ribs and forming sealing means, said hanger flanges and sealing means spacing said heads apart whereby to render leakage past the sealing means visible from the outside of the head, and means connecting the head flanges.

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