

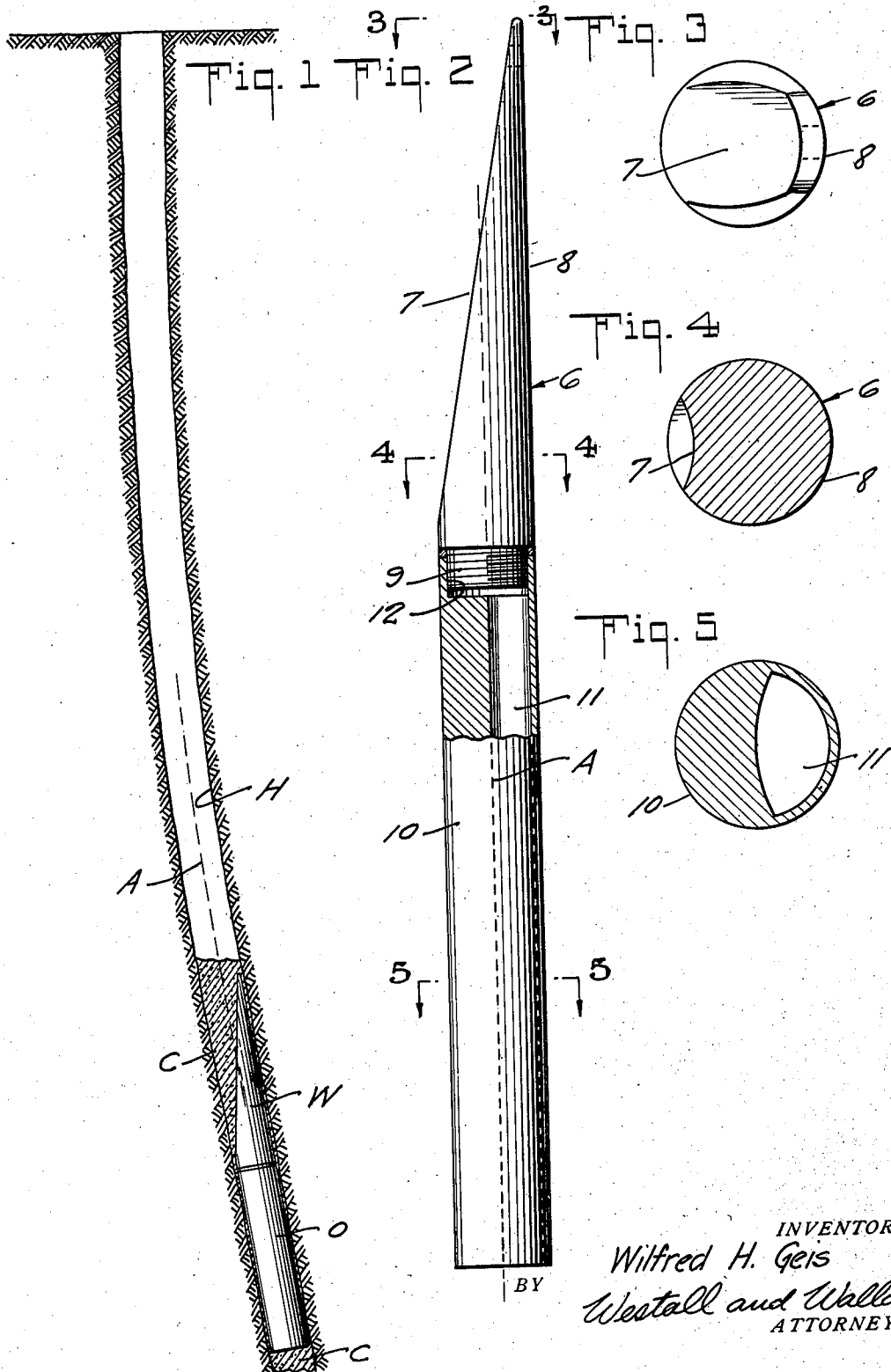
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DEVICE FOR ORIENTATING WHIP STOCKS

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# UNITED STATES PATENT OFFICE

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## DEVICE FOR ORIENTATING WHIPSTOCKS

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Whip stocks are used for the purpose of diverting drill tools in well holes from the normal direction of advance of the drill tools. They are used for various purposes such as to drill through casing and to side track. Such whip stocks are of wedge shape and when introduced into the well hole are supported at their small end. The center of gravity in such whip stocks is such that in a crooked hole the whip stock rests against the wall of the hole or casing with the inclined face on the upper side. Thus, when a hole is crooked the whip stock will generally position itself so as to divert the drilling tool toward the high side of the hole and thus tend to accentuate the crookedness.

The present invention relates to a pendulous basal device which may be attached to a whip stock and will cause an effective center of gravity positionable in any desired transverse relation to the whip stock. Thus, the whip stock may have its inclined face orientated as desired.

These objects are accomplished by means of the embodiment of my invention illustrated in the accompanying drawings, in which:—

Fig. 1 is a vertical section through a crooked well hole showing a whip stock cemented in position preparatory to continuance of drilling; Fig. 2 is an elevational view partly in section showing a whip stock with my orientator connected thereto; Fig. 3 is a plan view thereof; and Figs. 4 and 5 are sections as seen on the lines correspondingly numbered.

Referring with more particularity to the drawings and especially Figs. 2 to 5, a whip stock is marked 6. It is provided with an inclined face 7 and a straight face 8. The whip stock in effect is a truncated cylindrical body with an inclined face extending diagonally from diametrically opposite sides at opposite ends. The inclined face may be dished as shown in Fig. 4. However, the whip stock

may not have a circular peripheral surface for the body, but may be varied therefrom as found expedient. The whip stock forms no part of the present invention. As shown it has a pin 9 at its lower end which is threaded.

The orientator is shown as an elongated body having portions cut away to offset the center of gravity from its geometrical axis. In the present instance, the orientator is cylindrical on its outer surface as indicated by 10 and a portion of the body extending longitudinally thereof is cut away as indicated by 11. A threaded box 12 is formed at one end to serve for attaching the orientator to the whip stock 10. It is within the purview of my invention to provide any other suitable means for connecting the whip stock and orientator and permitting an angular adjustment of the orientator with relation to the whip stock. It is further within the purview of my invention to construct an orientator, which may be solid, but wherein the body is formed of materials having diverse densities so that the center of gravity of the orientator is offset from the geometrical axis.

Assuming that a crooked hole is to be straightened as shown in Fig. 1 and that a survey of the hole has been made to determine the direction of inclination and it is desired to straighten the hole. The orientator is attached to the whip stock as shown in Fig. 2 with its center of gravity on the opposite side of the longitudinal axis A. The orientator is angularly positioned on the whip stock such that its pendulous action causes the whip stock and orientator to position themselves with the inclined face 7 toward the low side of the hole as shown in Fig. 1. The position of the whip stock will then be such as to tend to divert the drilling tools away from the axis of inclination of the hole. In Fig. 1, the hole is marked H. The axis of the hole is indicated by A. The whip stock W with its orientator O attached is shown cemented in

position by cement C. The effect upon the drilling tool will be obvious. It may be desired to guide the drilling tool in another direction. By turning the orientator the center of gravity of the combined whip stock and orientator may be so disposed as to cause the instrument to rest in the hole with the inclined face orientated in any predetermined direction.

10 What I claim is:—

1. In combination with a whip stock, an orientator comprising an elongate extension for the basal portion of said body and having a center of gravity offset from its geometrical longitudinal axis.

15 2. In combination with a whip stock, an orientator comprising an elongate extension for the basal portion of said body, said orientator being angularly adjustable with relation to said whip stock about its geometrical longitudinal axis, said orientator having a center of gravity offset from its geometrical longitudinal axis.

20 3. In combination with a whip stock, an orientator pendulously attached thereto and normally fixed against rotation about the axis extending through said orientator and whip stock, said orientator having a center of gravity offset from its geometrical longitudinal axis.

25 4. In combination with a whip stock, an orientator pendulously attached thereto and normally fixed against rotation about the axis extending through said orientator and whip stock, said orientator being angularly adjustable with relation to said whip stock and having a center of gravity offset from its geometrical longitudinal axis.

30 5. In combination with a whip stock, an orientator detachably connected thereto and comprising an elongate extension for the basal portion of said body, said orientator having a center of gravity offset from its geometrical longitudinal axis.

35 6. In combination with a whip stock, an orientator detachably connected thereto and adjustable angularly with respect to said whip stock, said orientator comprising an elongate extension for the basal portion of said body and having a center of gravity offset from its geometrical longitudinal axis.

40 In witness that I claim the foregoing I have hereunto subscribed my name this 24th day of June, 1929.

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WILFRED H. GEIS.

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