

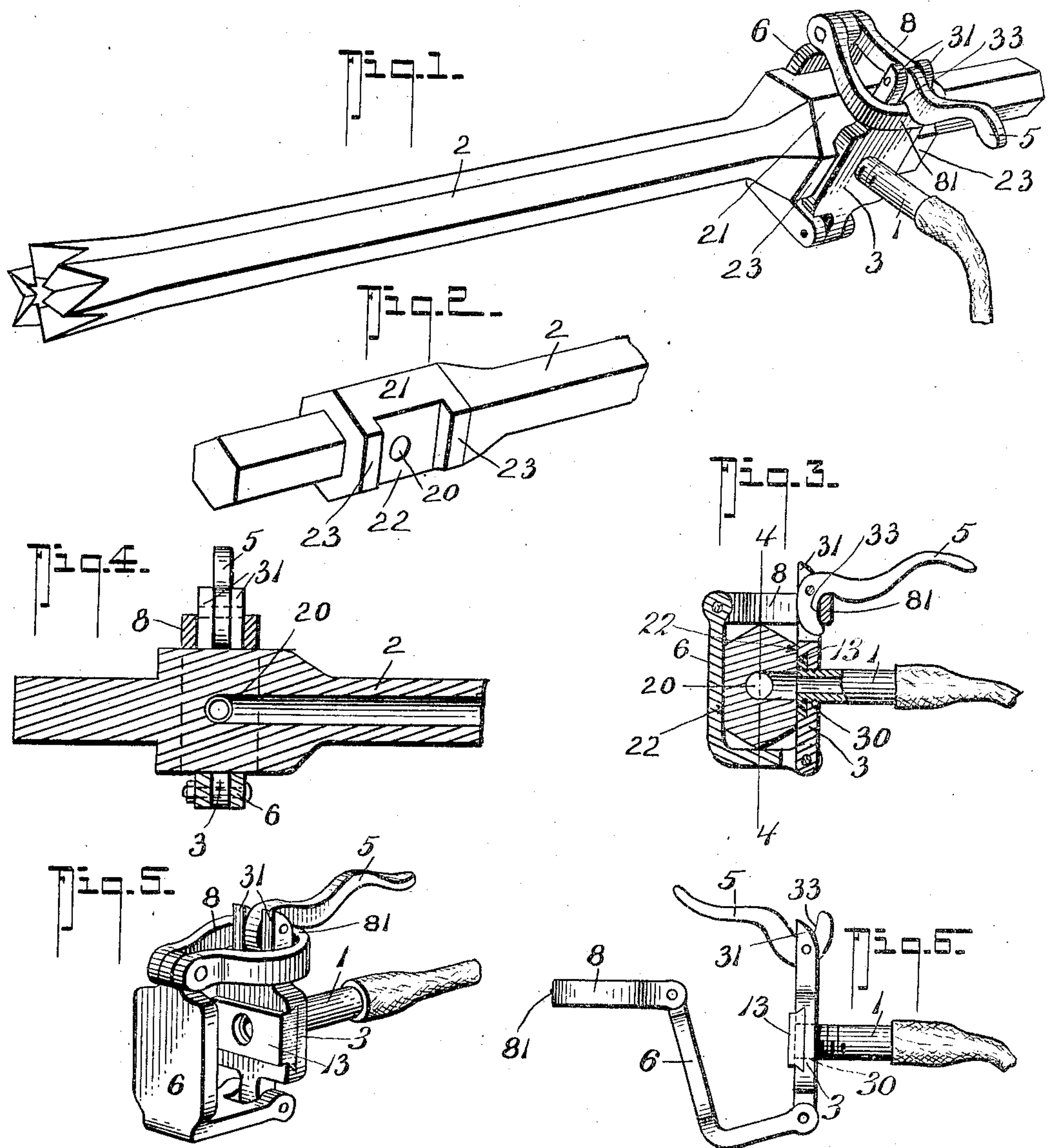
No. 887,051.

PATENTED MAY 5, 1908.

J. H. WIEST.

FLUID FEED SIDE INLET DRILL BIT.

APPLICATION FILED JUNE 24, 1907.



WITNESSES:

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FLUID-FEED SIDE-INLET DRILL-BIT.

No. 887,051.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed June 24, 1907. Serial No. 380,613.

To all whom it may concern:

Be it known that I, JOHN HENRY WIEST, residing at Boulder, in the county of Boulder and State of Colorado, have invented a new and Improved Fluid-Feed Side-Inlet Drill-Bit, of which the following is a specification.

This invention, which relates generally to that type of hollow rock cutting drill bits having side inlets, more especially seeks to provide certain improvements in the form of a drill bit and fluid feed coupling devices disclosed in my Patent No. 845,385, patented February 27, 1907.

While I have found the construction and arrangement of parts disclosed in the patent aforesaid as generally effective and presenting the advantages set out, yet from practical experiment I have also found that the side inlet weakens the bit stock, and under some conditions causes it to easily break at that point. Furthermore, by reason of the drill bit having a uniform smooth external face, great strain of the clamping member on the drill at the side inlet is necessary to hold the fluid feed pipe in proper register with the said side inlet, a nozzle connection being also necessary to insure a proper flow of the fluid into the side inlet and also for holding the clamping device from creeping laterally on the drill stock.

My present invention especially seeks to provide certain improvements on the patented invention stated, whereby to overcome the objections noted, whereby the clamping device can be readily applied to the drill bit, and the coupling of the fluid conveyance pipe therewith made without the use of a nipple or nozzle end and further whereby the drill bit is sufficiently reinforced at the side opening end to overcome any weakening of the bit at that point.

With the above objects in view, my invention comprehends certain details of construction and peculiar combination of parts, all of which will be hereinafter fully explained, specifically pointed out in the appended claims, and illustrated in the accompanying drawings, in which:

Figure 1, is a side inlet drill bit with my improvements applied. Fig. 2, is a similar view of the upper end of the drill bit, showing character of drill construction used. Fig. 3, is a transverse section of the part shown in Fig. 1, taken centrally through the pipe 1 and

the aperture 20. Fig. 4, is a longitudinal section taken on the line 4—4 of Fig. 3. Fig. 5, is a perspective view of the coupling with the fluid feed pipe attached. Fig. 6, is a perspective view of the coupling device, opened. In my present invention, the drill bit 2, which is of that type whose central bore or fluid channel is stopped at the inner or striking end and connects with a side inlet 20, as clearly shown in Fig. 4,—the cutting or drilling end also being of the conventional shape, as shown.

In my present invention, the side inlet is not threaded and is of uniform diameter its length. At the point where it has the side inlet 20, the drill stock is reinforced by enlarging it annularly as at 21. At the inlet side and at that side diametrically opposite the inlet side, the reinforced portion is recessed or reduced to a diameter equal that of the main portion of the drill stock, whereby to present two opposing parallel bearing surfaces 22 and each located between a pair of shoulders 23—23. The two opposing pairs of shoulders 23 are so spaced that the opposing members 3 and 6 of the clamping device will fit snugly therebetween and held thereby from lateral movement on the drill stock or bit.

The clamping device in my present invention is constructed and operates the same as the similar device shown in the patent before referred to, the member 3 having the threaded opening 30 to receive the externally threaded portion of the feed pipe 1 whose end is straight whereby to flatwise engage the drill stock and close over the feed inlet thereof as clearly shown on Fig. 3.

The coupling member 3 has the coupling lever 5, fulcrumed between its bifurcated ends 31 and pivotally joins with the L-shaped coupling member 6, that pivotally connects with the locking yoke 8, whose cross bar 81 coöperates with the curved edges 33 of the member 3 and the locking lever 5, the several coupling device members referred to being arranged to coöperate the same as in the patent before mentioned, and in the manner clearly understood from the drawing.

In order to insure a tight joint between the coupling member and the drill bit I provide a dove-tail slot in the member 3 in which a gasket 13 is removably held so that when the clamp is in the position shown in Fig. 3 the

gasket will be tightly held against the drill bit and insure an air tight joint being made between the pipe 1 and the bit.

By reason of constructing the drill stock in the manner shown and described, it will be readily apparent that when the coupling device is adjusted as in Fig. 3, the end of the feed pipe 1 will be positively held up against the feed inlet 20 and from moving laterally on the drill by reason of the coupling members 3 and 6 being located between the opposing shoulders 23 on the drill, and by providing the drill stock with additional metal at the coupling point, the said drill stock is materially strengthened and danger of breaking at the side inlet point is practically overcome.

The fitting of the coupling is more readily accomplished since a nozzle and consequent adjustment thereof in the side inlet 20 is not required.

What I claim is:

1. The combination with a hollow drill bit, having an annularly enlarged portion, provided at opposite sides with flat seats, and having a side feed located in the annular portion with its entrant end in one of the flat sides of the drill; of a feed pipe, a yoke frame that carries said pipe, and means for clamping the yoke frame on the opposing flat sides of the drill and for holding the discharge of the feed pipe against the inlet end of the drill bit, as set forth.

2. The combination with the hollow side

feed inlet drill bit, said bit having an enlarged or reinforced portion at the inlet formed with opposing flat seats and shoulders at the ends of the seats; of a feed pipe, a yoke frame that supports the discharge end of said pipe, said yoke frame including opposing members adapted to engage the flat sides of the drill and seat between the shoulders thereof, and means cooperating with the yoke for clamping said yoke in the drill as set forth.

3. A hollow drill having a side feed inlet, said drill having the inlet portion annularly enlarged, and formed with opposing flat faces, and shoulders at the ends of the flat faces, the inlet opening in one of the flat faces for the purposes specified.

4. The combination with a hollow drill bit having a side feed inlet and reinforced portions at the side feed inlet port thereof; of a feed pipe, a clamping means that cooperates with the feed pipe for engaging the reinforced part of the drill bit and holding the feed pipe closely over the side feed inlet and in contact with the drill stock, said clamping means having a groove and a gasket held in said groove around the said feed pipe for engaging the drill stock, substantially as shown and described.

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Witnesses:

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