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MUD VALVE

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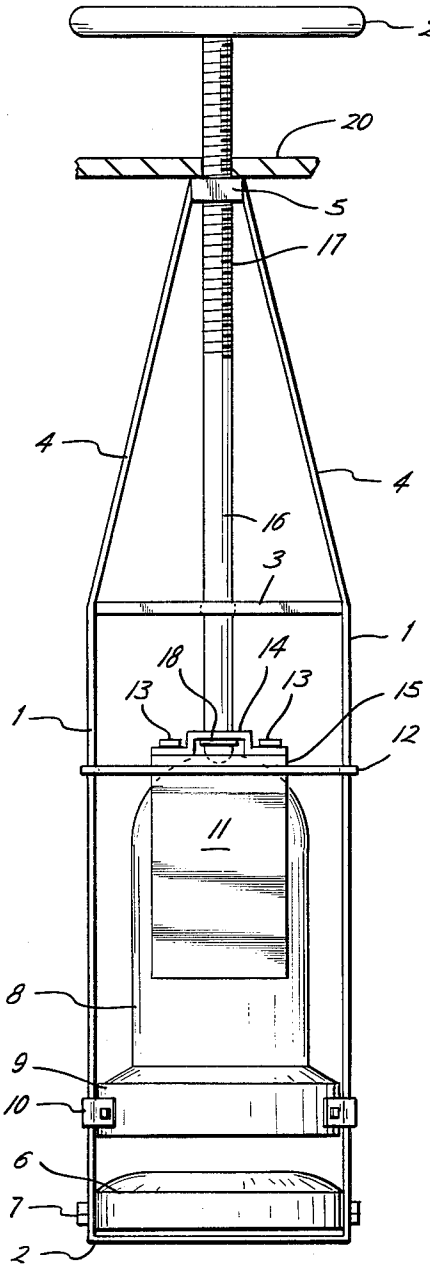


Fig. 1

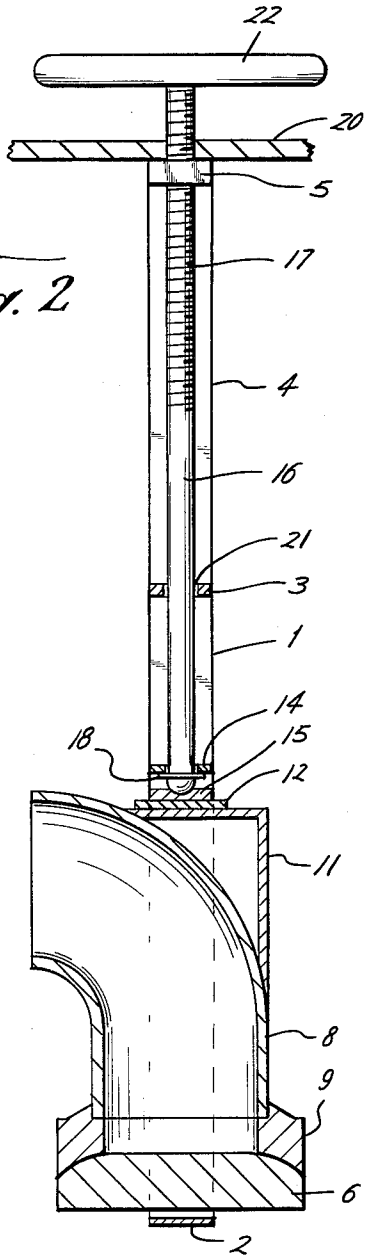


Fig. 2

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MUD VALVE

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This invention relates to new and useful improvements in a mud valve.

It is an object of this invention to provide a valve for use in mud tanks and the like that may be easily opened and closed and that will remain free of the binding action of sand or weight material in the mud settling around the valve.

In drilling operations where a tank is employed in which drilling mud containing weight additives as well as drilling cuttings is circulated, the mud is removed from the tank by suction pumps, and the valve in the suction line leading into the tank is located on the end of the suction line outside of the mud tank. It is the natural tendency for the weight additives that are in the drilling mud to settle to the bottom of the line, just as it is the natural tendency for the sand from the drilling cuttings to so settle. This frequently blocks the closing operation of the conventional mud tank valve. It is also of importance that the pressure from the inside of the tank be blocked from the suction line, just as it is important that the outside pressure from the suction line be blocked from the mud tank. It is an object of this invention to provide a valve to be seated adjacent the bottom of a mud tank and inside the tank that will remain easily operable regardless of the settlings and that will block both inside and outside pressures through the suction line when in closed position.

With the above and other objects in view, the invention has relation to certain novel features of construction, operation and arrangement of parts more particularly defined in the following specifications and illustrated in the accompanying drawings, wherein:

FIGURE 1 is a front elevational view of the valve in open position.

FIGURE 2 is a side elevational view of the valve in closed position.

Referring now more particularly to the drawings, the numerals **1**, **1** designate the parallel side members of the rigid framework, such as steel straps, which are joined at the bottom by the integral base member **2** and the cross member **3**, parallel with the base member **2**, joins said straps adjacent the upper portion thereof, said side members being inwardly directed from the point of joinder of said cross member **3**, as indicated at **4**, **4**, and are secured at their upper ends to the internally threaded collar **5**.

Adjacent the base member **2** is the lower valve seat **6**, which is pivotally mounted on the framework by means of bolts **7**, **7** to form a misaligning seat, and the upper end face of the seat **6** is convex in the form of a ball seat. The conduit **8**, such as an elbow of pipe, is welded at one end to the upper valve seat **9** which has the lower inside end face thereof concave to mate with the lower valve seat **6**. The lower seat **6**, being pivotally mounted, will readily mate with the upper seat **9**, as the parts are moved together. While the seat **9** is shown to be integral with the conduit **8**, it may be formed as a separate unit of rubber or soft metal as a replaceable insert. Guide members **10**, **10** are mounted on the upper valve seat **9** through which guide members the parallel side members **1**, **1** extend.

The conduit **8** moves vertically within the framework and the upper end of the said conduit extends outwardly from the framework. The framework is anchored to the tank at the collar **5** and the conduit **8** is adapted to receive a suction hose (not shown) on its extended end.

Mounted on the conduit **8** is the saddle **11**, which may be molded to conform to the outside contour of the conduit **8** and which is secured at its upper end to the guide member **12** by means of the bolts **13**, **13** which extend through the stem bracket **14** and the stem seat **15**. The valve stem **16** is partially externally threaded as at **17** and the lower end thereof extends through the bracket **14** and seats in the seat **15**. A slip ring **18** is mounted on the stem **16** to retain the stem in the bracket **14**. The ends of the guide member **12** are slotted to receive the parallel side members **1**, **1**.

The stem **16** is mounted in and extends through the collar **5** and through the port **21** in the cross member **3**. A conventional handle **22** is fixedly mounted on the upper end of the stem **16** for manual rotation and the conduit travels vertically upon rotation of the handle **22**.

In use the upper end of the collar **5** is anchored to a supporting bar as **20** in the tank, and the conduit **8** is connected into one end of the suction conduit (not shown) and when the handle **22** is rotated in one direction, the saddle **11** and conduit **8** travels vertically and is maintained in vertical alignment through the guides **10**, **12** and the seat **6** is spaced from the seat **9** and mud may be pumped through the conduit **8**. When the handle **22** is rotated in the opposite direction, the seat **6** will again be in seating position with the upper valve seat **9**. The lower seat being pivotally mounted will permit ready seating with the upper seat.

While the foregoing is considered a preferred form of the invention, it is by way of illustration only, the broad principle of the invention being defined by the appended claims.

What we claim is:

1. In a valve for a mud tank, a framework having parallel side members, a vertically movable tubular elbow conduit mounted in said framework, a lower seat mounted in said framework and an upper seat mounted in said conduit, means for moving said conduit vertically with relation to said framework to move said upper seat into and out of seating relation with said lower seat.

2. In a valve, a framework, a tubular elbow conduit, slidably mounted on said framework, a lower seat mounted in said framework and an upper seat mounted in said conduit, guide members on said upper seat in sliding relation with said framework, a saddle on said conduit and a reciprocating stem mounted in said framework and secured at one end to said saddle for reciprocating said conduit and upper seat to move said upper seat into and out of seating relation with said lower seat.

3. In a valve, a framework, a tubular elbow conduit, parallel side members on said framework, said conduit being vertically movable and mounted on said framework, a lower seat mounted in said framework and an upper seat mounted in said conduit, means for reciprocating said conduit and upper seat vertically to move said upper seat into and out of seating relation with said lower seat and upper and lower guide members fixedly mounted on said conduit and slidably mounted on said framework.

4. In a valve, a rigid framework having parallel straps, the upper portion of said straps being inwardly inclined and joined at their upper ends to an internally threaded collar, a lower valve seat pivotally mounted on the lower end of said straps, a tubular elbow conduit mounted between said parallel straps of said framework and being vertically movable with relation thereto, one end of said

conduit forming an upper valve seat movable into seating relation with said lower valve seat, a saddle on said conduit having a stem seat and a stem retaining bracket, a valve stem having its upper end externally threaded and extending through said collar and its lower end seated in said stem seat, means for rotating said stem to move said conduit and upper seat vertically with relation to said framework.

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