

No. 680,163.

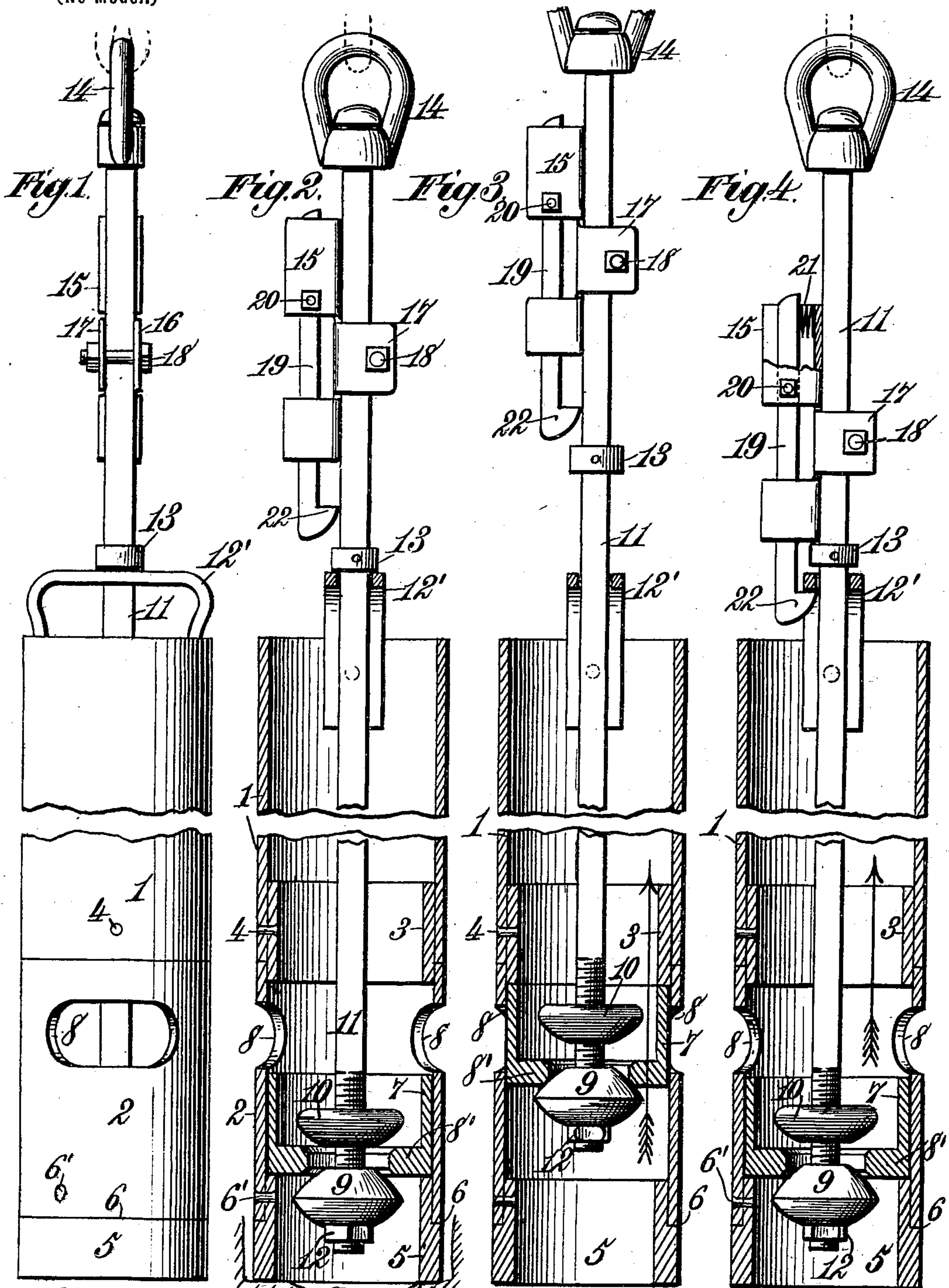
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K. MOORING.

BAILER.

(Application filed Apr. 25, 1901.)

(No Model.)



Witnesses.  
*Robert Everett,*  
*J. B. Keeler*

Inventor.  
*Kenneth Mooring.*  
By *James L. Norris,*  
*Atty.*



# UNITED STATES PATENT OFFICE.

KENNETH MOORING, OF ROCKLAND, OHIO.

## BAILER.

SPECIFICATION forming part of Letters Patent No. 680,163, dated August 6, 1901.

Application filed April 25, 1901. Serial No. 57,456. (No model.)

*To all whom it may concern:*

Be it known that I, KENNETH MOORING, a citizen of the United States, residing at Rockland, in the county of Washington and State of Ohio, have invented new and useful Improvements in Bailers; of which the following is a specification.

This invention relates to certain new and useful improvements in bailers for removing fluid, mud, or debris from wells, and is particularly adapted for use in connection with the drilling of oil-wells.

The invention aims to construct a bailer not only adapted for removing water or other matters from a well, but also is particularly adapted for supplying water to the bottom of the well, which is very essential when the rock caves or falls in.

The invention further aims to provide new and novel means for keeping the valves unseated when it is desired to discharge the water from the bailer when the latter is at the bottom of the well and when elevating the bailer after the discharge of the water.

The invention further aims to construct a bailer so that it is not necessary to invert the same to discharge the contents therefrom which have been bailed from the well.

The invention further aims to construct a bailer which shall be extremely simple in construction, strong, durable, efficient in its operation, and comparatively inexpensive to manufacture; and to this end it consists of the novel combination and arrangement of parts hereinafter more specifically described, illustrated in the accompanying drawings, and particularly pointed out in the claims hereunto appended.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, wherein like numerals of reference indicate corresponding parts throughout the several views, and in which—

Figure 1 is an elevation of my improved bailer. Fig. 2 is a vertical sectional view showing the valves in an open position. Fig. 3 is a like view showing the valves in a closed position. Fig. 4 is a similar view showing the clutching mechanism retaining the valves in an open position.

Referring to the drawings by reference-numerals, the cylinder of the bailer is formed of an upper and lower section 1 2, respectively, of any preferred length. The sections abut against one another and are connected together by means of the cylindrical band 3, engaging the inner face of the sections and secured thereto by means of the rivets or other fastening means 4. The band 3 not only connects the sections of the bailer-cylinder together, but also forms a stop for limiting the upward movement of the sliding valve, to be hereinafter described. The lower end of the section 2 of the bailer has secured therein the shouldered collar 5. The latter is cut away on its outer face to form the shoulder or ridge 6, upon which is seated the lower end of the section 2, the latter being secured by means of the rivets 6 to the upper portion of the collar 5, which projects into the section 2. This upwardly-projecting portion of the collar 5 forms a stop for limiting the downward movement of the slide-valve 7.

The slide-valve 7 is arranged within the lower section of the bailer between the band 3 and collar 4 and is adapted to close the openings 8, formed in the lower section 2. The slide-valve 7 consists of a hollow cylindrical collar, with its outer diameter substantially the same as the inner diameter of the lower section 2. At the lower end of the inner face of the valve 7 an inwardly-projecting annular flange 8' is formed integral therewith. The lower face of the flange 8' forms a valve-seat for the lower choke-valve 9 and its upper face a seat for the upper choke-valve 10.

The reference-numeral 11 denotes an elongated valve-stem having the lower portion thereof screw-threaded to receive the choke-valves 9 10, the former adapted to close the opening through the flange of the slide-valve for forming a closure for the bottom of the cylinder. The choke-valve 9 is retained in position by means of the jam-nut 12, mounted on the lower end of the valve-stem 11 and engaging the valve 9. The choke-valves 9 and 10 are arranged upon the stem 11 so that the flange 8' will be interposed between them. By this arrangement the choke-valve 10 will carry the slide-valve downwardly and the choke-valve 9 will elevate the slide-valve 7



when the valve-stem 11 is raised or lowered or when the bailer is lowered or elevated within the well.

The reference-numeral 12' denotes a bail 5 secured to the upper section 1 and through which extends the valve-stem 11. The latter is provided with a stop-nut 13, adapted to engage the bail 12', and further provided at its upper end with a link 14, to which is connected the sand-line for raising and elevating 10 the bailer. The link 14 is swivelly secured to the stem 11.

Connected to the upper end of the stem 11 between the nut 13 and link 14 is a clutch 15 mechanism for retaining the slide-valve 7 and choke-valve 9 in an open position. The clutch mechanism consists of a casing 15, having each of its sides slitted. The portions between the slits in the sides are bent to form 20 the ears 16 17, through which extends the fastening-bolt 18. The ears 16 17 are bent in such a manner that they are adapted to project over the stem 11 and are adjustably secured to the latter by means of the bolt 18.

The reference-numeral 19 denotes a spring-pressed clutching-arm, which is pivotally connected at one end to the casing 15 by means of the pin 20, and the upper end of said arm engages the coiled tension-spring 30 21, arranged in the upper end of the casing 15. The lower end of the said arm is formed into a beak or hook 22, which is adapted to engage the bail 12' and prevent the elevation of the valve-stem 11, thereby retaining the 35 slide-valve 7 and choke-valve 9 opened when desired. The clutching mechanism is adjustably secured to the stem 11, so that the same can be elevated when desired, so that the beak or hook 22 will not engage the bail 11 40 and prevent the closing of the valves 7 and 9.

The operation of the device is as follows: Assuming that the same is to be used as a bailer and the clutching mechanism is adjusted so that the same will not engage the 45 bail on the upper section, the bailer is lowered within the well, the cylinder sliding downwardly on the valve-stem, thereby closing the opening in the lower section of the cylinder, owing to the slide-valve engaging the band or stop 3. At the same time the choke-valve 9 will close the opening through the 50 flange 8'. When the bailer reaches the bottom of the well, the valve-stem will be lowered, lowering the slide-valve 7 and choke-valve 9, permitting the water or other sediment to enter through the opening 8 and the opening through the flange. When the bailer is raised from the well, the stem 11 will be elevated, first closing the opening 8 by means 60 of the slide-valve 7 and the opening through the flange 8' by means of the choke-valve 9. When the bailer is at the top of the well and it is desired to remove the contents thereof, the bailer is set upon the ground or other desirable place. The stem 11 will fall by gravity, 65 lowering the slide and choke valves, and per-

mit the contents to be discharged. When it is desired to lower water into the well by means of the bailer, the clutching device is arranged upon the valve-stem so that the 70 beak or hook will be above the bail; but when the stem is lowered the beak or hook will ride over the bail and engage the lower face thereof, such action being caused by the spring 21, the clutching-arm, with its beak or hook, being operated in the manner above when the 75 bailer is at the bottom of the well. When the bailer with the water is lowered in the well, owing to the fall of the cylinder or the elevation of the valve-stem, the opening 8 80 and opening through the flange 8' will be closed by the slide and choke valves 7 9, respectively. When the bailer has reached the bottom of the well, the beak or hook of the 85 clutching-arm, owing to the lowering of the stem 11, will ride over the bail and engage the same, preventing the closing of the openings by the slide and choke valves 7 9. This prevents the bailing out of the water supplied or other sediment when the bailer is elevated. 90

It is thought the many advantages of my improved bailer can be readily understood from the foregoing description, taken in connection with the accompanying drawings, and it will be noted that minor changes may be 95 made in the details of construction without departing from the general spirit of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by 100 Letters Patent, is—

1. In a bailer, a cylinder provided with an opening in the side thereof, a slide-valve operating in said cylinder for closing said opening, a valve-stem operating through said slide-valve, and a pair of choke-valves carried by 105 said stem.

2. In a bailer, a cylinder provided with an opening in the side thereof, a slide-valve operating in said cylinder, provided with an 110 opening and adapted to close the opening of the cylinder, a valve-stem operating through the opening of said valve for elevating and lowering the latter and a pair of choke-valves adapted to engage said slide-valve for closing 115 the opening thereof.

3. In a bailer, a cylinder provided with an opening in the side thereof, a slide-valve for closing said opening and provided with an opening, a choke-valve for closing the opening 120 in the slide-valve, and means for retaining said valves away from said openings.

4. In a bailer, a cylinder provided with an opening in the side thereof, a slide-valve for closing said opening, a choke-valve for closing 125 the bottom of said cylinder, means for operating said valves simultaneously, and means for retaining said valves in an open position.

5. In a bailer, a cylinder provided with an opening in the side thereof, a slide-valve for 130 closing said opening, a choke-valve for closing the bottom of said cylinder, means for oper-



ating said valves simultaneously, and spring-actuated means for retaining said valves in an open position.

5 6. In a bailer, a cylinder constructed of a pair of sections, one of which is provided with an opening in the side thereof, a band for securing said sections together and forming a stop, a collar secured to the lower of said sections and forming a stop, a slide-valve operating in said cylinder for closing the opening in one of the sections, and having its movement arrested by said stops, said valve provided with an opening, a valve-stem operating through the opening of said valve, and a choke-valve carried by said stem for closing said opening in the slide-valve.

7. In a bailer, a cylinder constructed of a pair of sections, one of which is provided with an opening in the side thereof, a band for securing said sections and forming a stop, a collar secured to the lower of said sections and forming a stop, a slide-valve operating in said cylinder for closing said opening and having its movement arrested by the said stops, said valve provided with an opening, a valve-stem operating through the opening of said valve, a choke-valve carried by said stem and adapted to close the opening of the slide-valve, and a clutch mechanism for retaining said valves in an open position.

8. In a bailer, a cylinder, a slide-valve operating therein, a choke-valve operating in the cylinder, and a clutch mechanism for retaining said valves in an open position.

35 9. In a bailer, a cylinder, a valve-stem operating therethrough, a slide-valve within the cylinder, a choke-valve carried by said stem and adapted to operate said slide-valve, and a clutching mechanism carried by said stem and adapted to retain said valves in an open position.

10. In a bailer, a cylinder having an opening in the side thereof, a slide-valve for closing said opening, a choke-valve for closing

the bottom of said cylinder and carrying said slide-valve, a valve-stem connected to said choke-valve, and a spring-actuated clutching mechanism for retaining said valves in an open position.

11. In a bailer, a cylinder having an opening in the side thereof, a slide-valve for closing said opening, a choke-valve for closing the bottom of said cylinder, and carrying said slide-valve, and a valve-stem connected to said choke-valve for operating the same.

12. In a bailer, a cylinder, a slide-valve, a choke-valve supporting the same, and a valve-stem for operating said valves.

13. In a bailer, a cylinder, stops arranged therein, a slide-valve operating between said stops, a pair of choke-valves engaging said slide-valve, and a valve-stem connected to said choke-valve for operating the same and said slide-valve.

14. In a bailer, a cylinder, a slide-valve, a choke-valve supporting the same, a valve-stem for operating said valves, and means for retaining said valves in an open position.

15. In a bailer, a cylinder, a slide-valve, a choke-valve supporting the same, a valve-stem for operating said valve, and a spring-actuated clutching mechanism connected with said valve-stem for retaining the valves in an open position.

16. In a bailer, a cylinder, a bail connected to the top thereof, a slide-valve, a choke-valve, a valve-stem connected to said choke-valve for operating the same and said slide-valve, and a clutching mechanism connected with said stem and engaging said bail for retaining the valve in an open position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

KENNETH MOORING.

Witnesses:

SYLVESTER SMITH,  
F. F. BARRETT.