No. 823,974. PATENTED JUNE 19, 1906.

W. A. SHAW.

WELL TUBE SAFETY CATCH.

APPLICATION FILED MAR. 5, 1906.

Fig. 1.

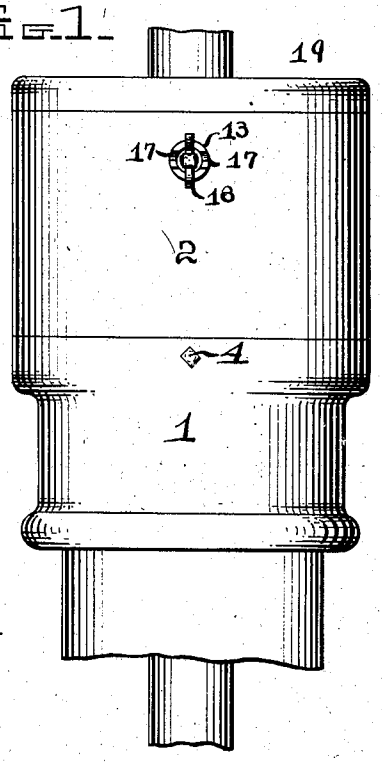



Fig. 2.

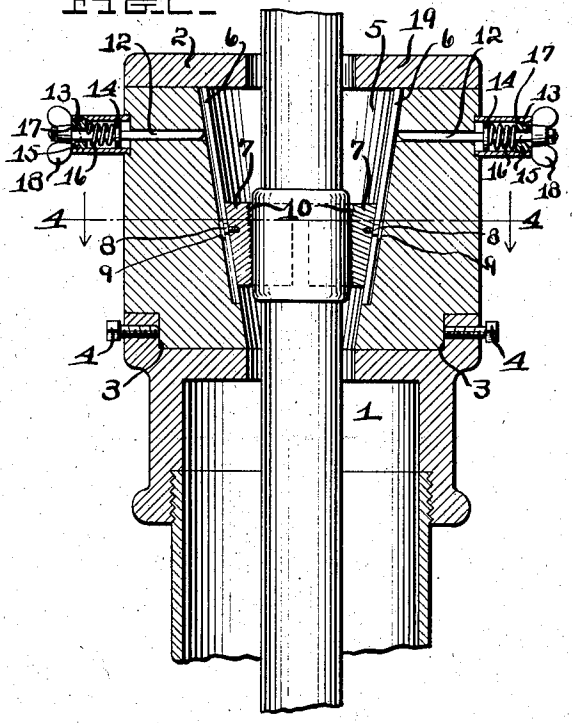



Fig. 3.

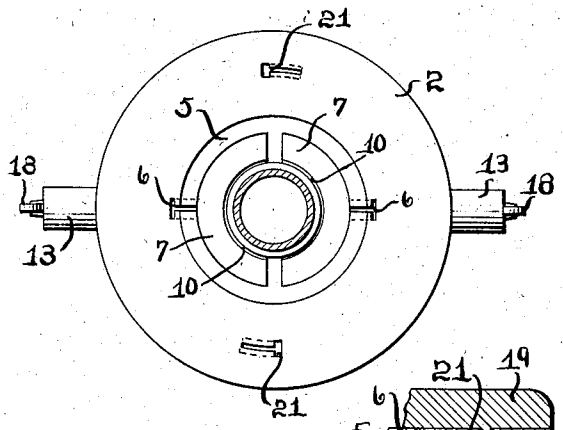



Fig. 4.

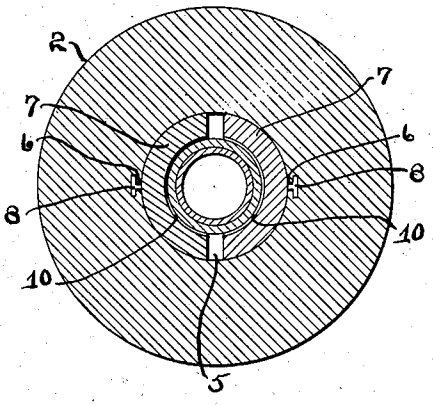
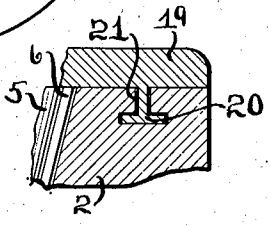



Fig. 5.




Witnesses

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# UNITED STATES PATENT OFFICE.

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## WELL-TUBE SAFETY-CATCH.

No. 823,974. Specification of Letters Patent. Patented June 19, 1906.

Application filed March 5, 1906. Serial No. 304,338.

*To all whom it may concern:*

Be it known that I, WILLIAM A. SHAW, a citizen of the United States, residing at North Clarendon, in the county of Warren and State of Pennsylvania, have invented certain new and useful Improvements in Well-Tube Safety-Catches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in safety-catches for well-tubes.

The object of the invention is to provide a device of this character by means of which a well-tube that is being withdrawn or placed in a well will be prevented from being accidentally dropped intothe well.

A further object is to provide a well-tube catch which will be simple, strong, and durable in construction, efficient, reliable, and automatic in its action, and well adapted to the purpose for which it is designed.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of the upper end of a well-casing and a portion of the tubing, showing the application of the invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a top plan view with the cap-plate removed. Fig. 4 is a horizontal sectional view on the line 4 4 of Fig. 2; and Fig. 5 is a detail fragmentary sectional view, showing the construction of the cap-fastener.

Referring more particularly to the drawings, 1 denotes the upper end of the well-casing, to which is adapted to be secured the body portion 2 of my improved safety-catch. The body 2 is here shown and is preferably cylindrical in form, having a reduced lower end 3 to engage the upper end of the well-casing, as shown, said body portion being held in position on the well-casing by means of set-screws 4, as shown. The body portion of the catch is provided with a tapering or conically-shaped bore 5, in the walls of which at diametrically opposite points are formed obliquely-disposed T-shaped grooves or recesses 6, which extend from the upper end of the body 2 to near the lower end thereof, as shown.

Arranged within the tapering bore of the body 2 are wedge-shaped dogs or catches 7. Said catches are held in sliding engagement with the walls of the bore 5 by means of guide screws or bolts 8, having T-shaped heads 9, adapted to be engaged with the T-shaped grooves 6 in said bore. The outer faces of the dogs 7 are provided with a series of upwardly-projecting teeth or serrations 10, said toothed face being formed on the same curvature as the well-tubing, so that when the latter is gripped by the catches the same will not become indented or injured.

In the outer sides of the body portion 2, at diametrically opposite points and in line with the groove 6, are spring-projected holding pins or rods 12. The inner ends of the pins or rods 12 are curved or beveled upwardly and are adapted to project into the grooves or recesses 6 in the path of movement of the heads 9 on the screws or bolts 8, by means of which the catches or dogs 7 may be supported in an inoperative position, as will be understood. The outer ends of the pins or rods 12 are slidably mounted in tubular plugs 13, adapted to be screwed or otherwise secured in the sides of the body 2 in line with the projecting ends of the rods 12, as shown. The rods 12 have secured thereto a disk or collar 14, adapted to slide within the tubular plug 13 and between which and an annular shoulder 15 in the outer ends of the plugs 13 is arranged a coil-spring 16, the tension of which is adapted to normally force the rods or pins 12 inwardly. The outer ends of the plugs 13 are provided with V-shaped notches 17, and the outer ends of the pins or rods 12 are provided with heads 18, which when the rods are retracted and turned in one position will engage the outer ends of the plugs 13 and be thereby held in a retracted position, so that the inner ends of said rods will clear the guide-grooves 6 in the bore 5, thus permitting the catch-blocks or dogs 7 to drop downwardly in said grooves or recesses into engagement with the well-tube. When, however, the heads 18 are disengaged from the ends of the plug 13 and turned at right angles, the spring 16 will force the rods inwardly and the heads thereon into engagement with the V-shaped notches 17, in which

position the inner ends of the rods will hold or support the catches 7 up out of engagement with the well-tube.

Adapted to be arranged on the upper end of the body 2 is a cap-plate 19, said cap-plate being provided on its under side with oppositely-disposed integrally-formed T-shaped lugs 20, adapted to be engaged with similarly-arranged recesses 21, formed in the upper end of the body 2, whereby when said cap is turned said lugs will lock the same into engagement with the body, as will be understood. The cap-plate 19 when arranged on the body 2 will prevent the entrance of dirt or foreign matter into the well.

By the use of a safety-catch such as herein shown and described the dropping of the well-tubing which is being removed from or placed into a well will be prevented by the gripping action of the wedged catches 7 when the same are released by the supporting-rods 12 and allowed to drop to an operative position, as shown in Fig. 2 of the drawings.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined by the appended claims.

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

1. A safety-catch for well-tubes comprising a body portion having a tapering bore, wedge-shaped catch-blocks having curved, toothed, engaging faces, means to hold said catch-blocks in sliding engagement with the tapering walls of said bore, supporting pins or rods arranged in said body, means to project the inner ends of said pins or rods into the path of movement of said blocks, and means whereby said pins may be held in retracted position, substantially as described.

2. A safety-catch for well-tubes comprising a body portion having a tapering bore, wedge-shaped catch-blocks having curved, toothed, engaging faces, means to hold said blocks in sliding engagement with the tapering walls of said bore, spring-projected supporting-pins having their inner ends projecting into the path of said catch-blocks, heads arranged on the outer ends of said pins, and means engaged by said heads to hold said pins in a retracted position, substantially as described.

3. A safety-catch for well-tubes comprising a body portion having a tapered bore, alined holes and a reduced lower end to engage the upper end of a wall-casing, set-screws to hold said body on said casing, wedge-shaped catch-blocks arranged in said bore, means to retain said blocks in sliding engagement with the tapering walls of the bore, tubular plugs arranged on the outer wall of said body and provided with notches or recesses, supporting-pins slidably mounted in said plugs and in said alined holes, springs to normally project said pins inwardly to support said catch-blocks in an operative position, heads formed on the outer ends of said pins, said heads being adapted to engage the ends of said plugs when in retracted position and to engage said notches or recesses in said plugs when in a projected position, a cap-plate arranged on the upper end of the body, and means to secure said cap-plate in place, substantially as described.

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

WILLIAM A. SHAW.

Witnesses:
JAMES B. MULLEN,
WILLIAM R. KOPF.