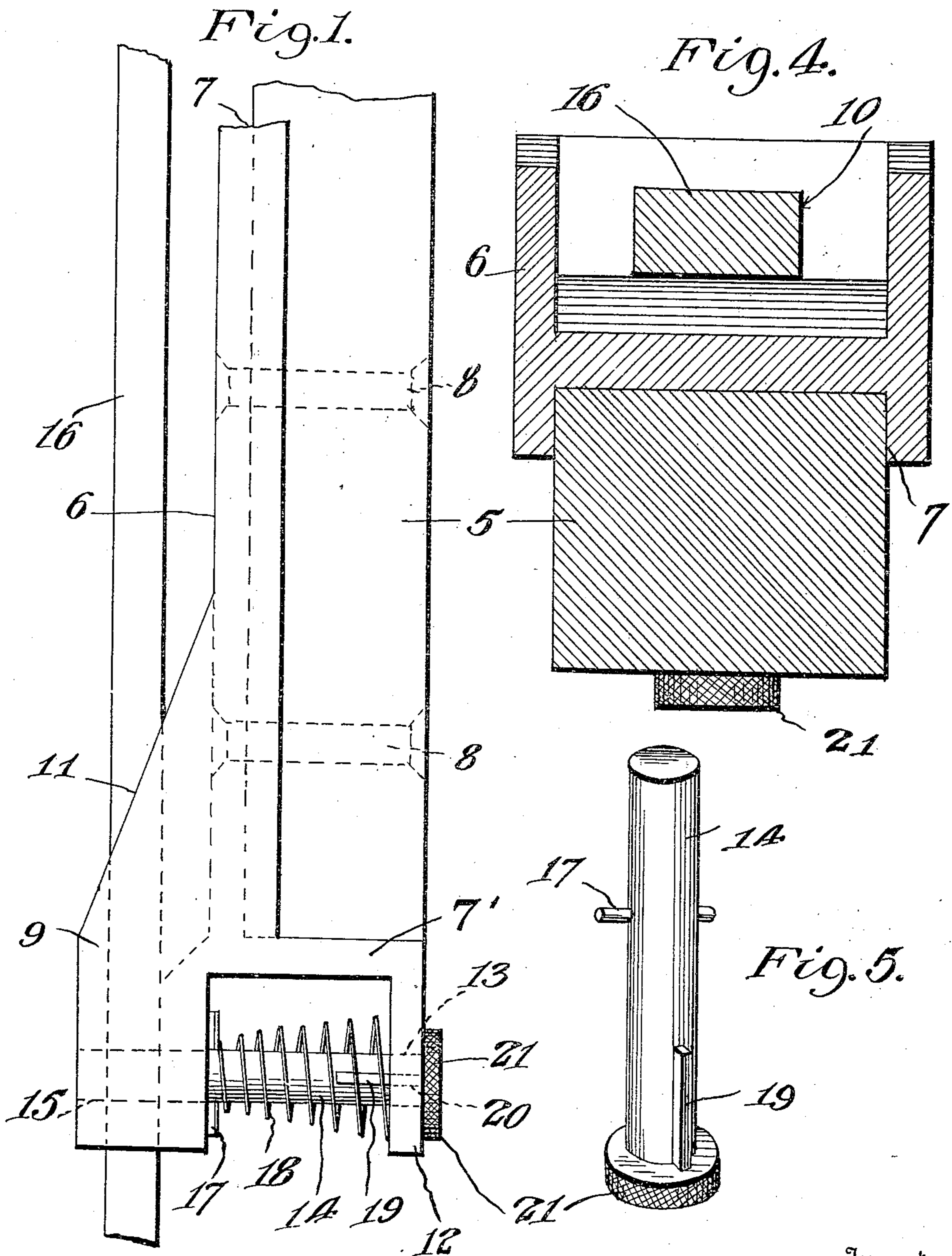


E. C. DANKER.
SAFETY KEY WINDMILL COUPLING.
APPLICATION FILED JULY 15, 1909.

954,671.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.



Witnesses :-

Joe P. Mahler
E. M. Ricketts

Inventor

Earl C. Danker

By

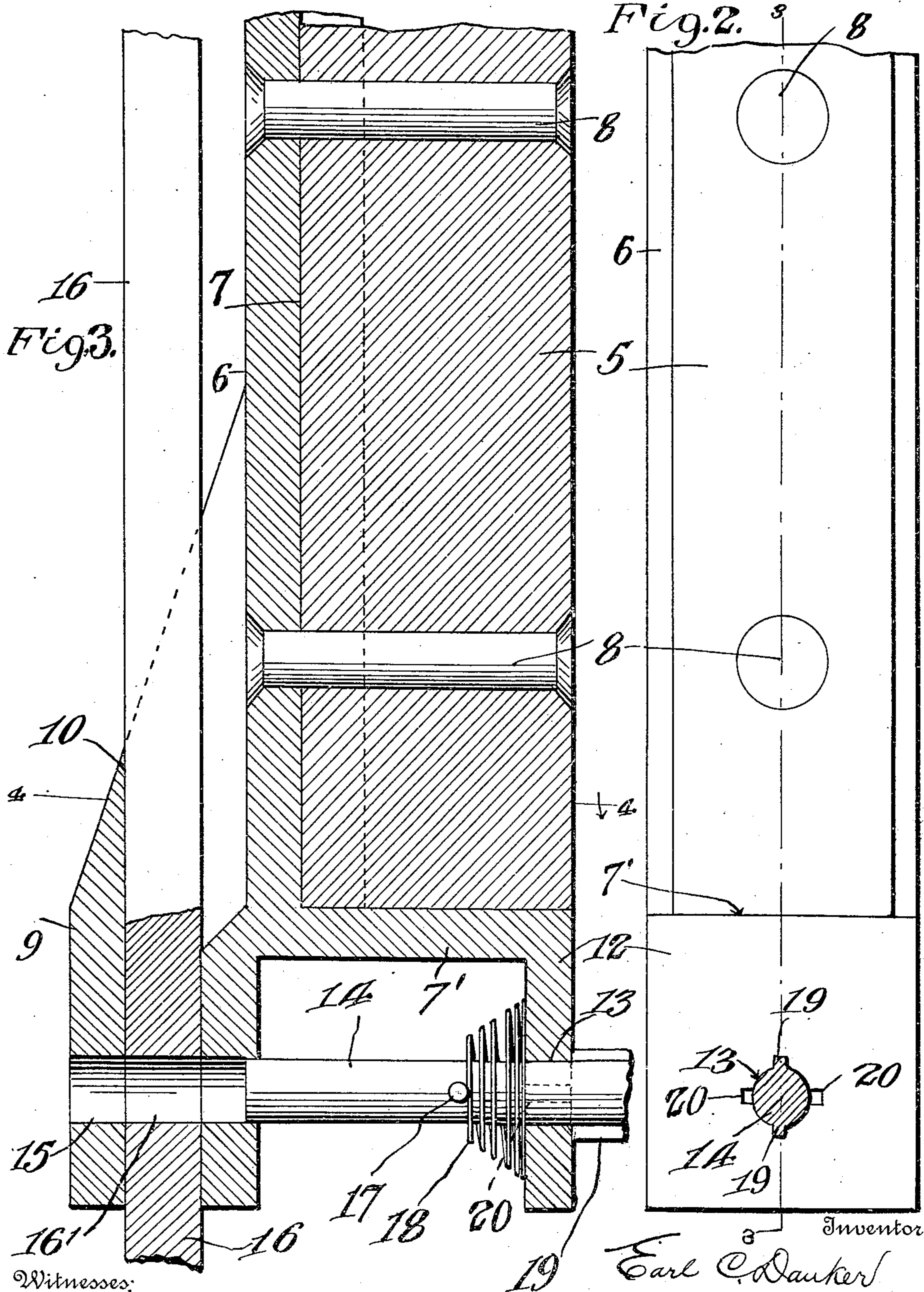
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UNITED STATES PATENT OFFICE.

EARL C. DANKER, OF RIVERTON, NEBRASKA.

SAFETY-KEY WINDMILL-COUPLING.

954,671.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed July 15, 1909. Serial No. 507,860.

To all whom it may concern:

Be it known that I, EARL C. DANKER, a citizen of the United States, residing at Riverton, in the county of Franklin and State of Nebraska, have invented a Safety-Key Windmill-Coupling, of which the following is a specification.

This invention relates to certain new and useful improvements in pump couplings for windmills and more particularly to a device of this character which is so constructed that the loss of the coupling pin when the pump rod is uncoupled will be prevented.

Another object is to provide a coupling of the above character which is of simple construction and may be readily secured to the connecting rod of a windmill or other motor which is adapted to reciprocate the pump rod.

Another object is to provide an improved mounting for the coupling pin especially adapted for use on couplings for windmills wherein it is at times desirable or necessary that the pump be disconnected from the motor so that it may be manually operated.

With these and other objects in view, the invention consists of the novel construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawing, in which—

Figure 1 is a side elevation of the coupling, showing the pin in coupling position; Fig. 2 is an end elevation of the coupling; Fig. 3 is a section taken on the line 3—3 of Fig. 2; Fig. 4 is a section taken on the line 4—4 of Fig. 3; and Fig. 5 is a detail perspective view of the coupling pin.

Referring to the drawings 5 indicates the connecting rod of a windmill, and 6 a casting comprising a channeled arm 7 which is adapted to be positioned upon one side of the connecting rod, the side flanges thereof extending over the opposite edges of the rod. This channeled arm is secured to the connecting rod by means of the rivets or bolts 8. An extension 9 depends below the arm 7 and is apertured as at 10 to provide a squared sleeve portion. The top edge of this sleeve portion extends upwardly at an obtuse angle to the arm 7 as shown at 11. The lower end of the channeled arm is horizontally extended to provide a seat or stop for the lower end of the connecting rod 5. A depending flange 12 extends downwardly from the horizontal base 7' and is of ap-

proximately the same length as the sleeve extension 9. This flange is provided with a circular opening 13 through which the coupling pin 14 is disposed. The rectangular sleeve 9 is likewise provided with the opening 15 in horizontal alinement with the opening 13 of the flange 12 and is adapted to receive the outer end of the coupling pin. The pump rod 16 is slidable through the aperture 10 of the sleeve and is provided with an opening 16' to receive the coupling pin whereby the rod may be locked or coupled to the connecting rod of the windmill. A pin 17 is carried by the rod 14 and extends from opposite sides thereof, said pin being adapted to contact with the inner wall of the sleeve 9 and limit the inward movement of the pin. A helical-spring 18 is disposed upon the rod 14 and the smaller end thereof contacts with the stop pin 17. The larger end of this spring bears against the inner wall of the flange 12 and is of such dimension as to permit the free movement of a key 19 which is integrally formed with the pin. This key extends longitudinally from diametrically opposite sides of the pin and is disposed in a rectangular slot or recess 20 in the flange 12 which communicates with the opening 13 at opposite sides. The outer end of the pin 14 is provided with an enlarged knurled head 21 by means of which the pin may be readily grasped and retracted from the opening 16' of the connecting rod.

In the operation of the device, when it is desired to couple the connecting rod and the pump rod, the pin 14 is drawn outwardly from the coupling and the spring 18 placed under compression. The coupling rod is now inserted through the aperture 10 of the coupling sleeve 9, until the opening 16' is disposed in alinement with the openings 15 and 13 of the coupling. The feather keys 19 are arranged in alinement with the recesses 20 in the flange 12. It will be obvious that upon the release of the pin 14, the spring 18 will force the same through the alined apertures of the rod 16 and the sleeve 9 until the pin 17 contacts with the inner wall of the sleeve and prevents its further movement. When it may be found desirable or necessary to uncouple the rod 16, the pin is withdrawn until the keys 19 are retracted entirely from the flange 12. The pin is now rotated in the coupling and the keys disposed at right angles to the recesses 20 and their inner

ends engaged with the outer face of the flange. Thus the coupling pin is withdrawn from the opening in the rod 16 to permit of its removal while at the same time the pin will still be held in the coupling by means of the helical-spring 18 which is under compression and exerts its spring tendency against the stop pin 17 whereby the tendency is to force the coupling pin inwardly into the openings of the sleeve 9. In this manner the entire withdrawal of the pin and probable loss thereof is obviated. Such construction also provides a very quick coupling of the connecting rod and the pump rod.

But three primary elements are utilized in the construction of the device whereby its manufacture is rendered inexpensive.

By providing the channeled arm 7 the coupling may be very rigidly secured to the lower end of the connecting rod and at all times held in its proper position for connection with the pump rod.

From the foregoing it will be seen that I have provided a safety coupling for windmills, which will greatly facilitate the coupling operation, will securely hold the rods in their coupled position against the possibility of disconnection, and will readily permit of the uncoupling of the rods when it is desired to manually operate the pump.

While I have shown and described what I deem to be the preferable embodiment of my invention, it will be obvious that numerous minor modifications may be resorted to without departing from the essential features or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed is:

The herein described coupling for pump rods comprising a casting adapted to be secured to the lower end of the connecting rod of a windmill, said casting consisting of a

channeled arm having its lower end laterally extended to provide a seat for said rod, the flanges of said arm being disposed upon opposite sides of the rod, a rectangular sleeve depending below said laterally extending flange, a flange extending downwardly from the outer end of the arm extension, said sleeve and flange having alined openings formed therethrough, a coupling rod vertically movable through said sleeve having an opening therein adapted to be brought into alinement with the openings in the sleeve, a coupling pin movable through the alined openings of said flange and sleeve, said flange having oppositely disposed recesses communicating with the opening therein, feather keys formed upon opposite sides of said coupling pin, said pin having a knurled head on its outer end, a stop carried by said coupling pin adapted to engage with said sleeve to limit the inward movement of the pin, a helical-spring arranged upon said pin between the flange and the stop carried thereby, said pin being adapted for rotation to dispose the keys in the recesses of said flange whereby said spring will force the pin inwardly through the openings in the sleeve and coupling rod, said keys remaining in the recesses in said flange when the pin is in locking position whereby the accidental rotation of said pin is prevented, the keys of said pin when the same is drawn outwardly through the flange being adapted to be disposed at right angles to the recesses therein and the spring placed under compression, the ends of said keys being frictionally held in engagement with the outer face of the flange by the expansive action of the spring.

EARL C. DANKER.

Witnesses:

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HENRY DANKER.