

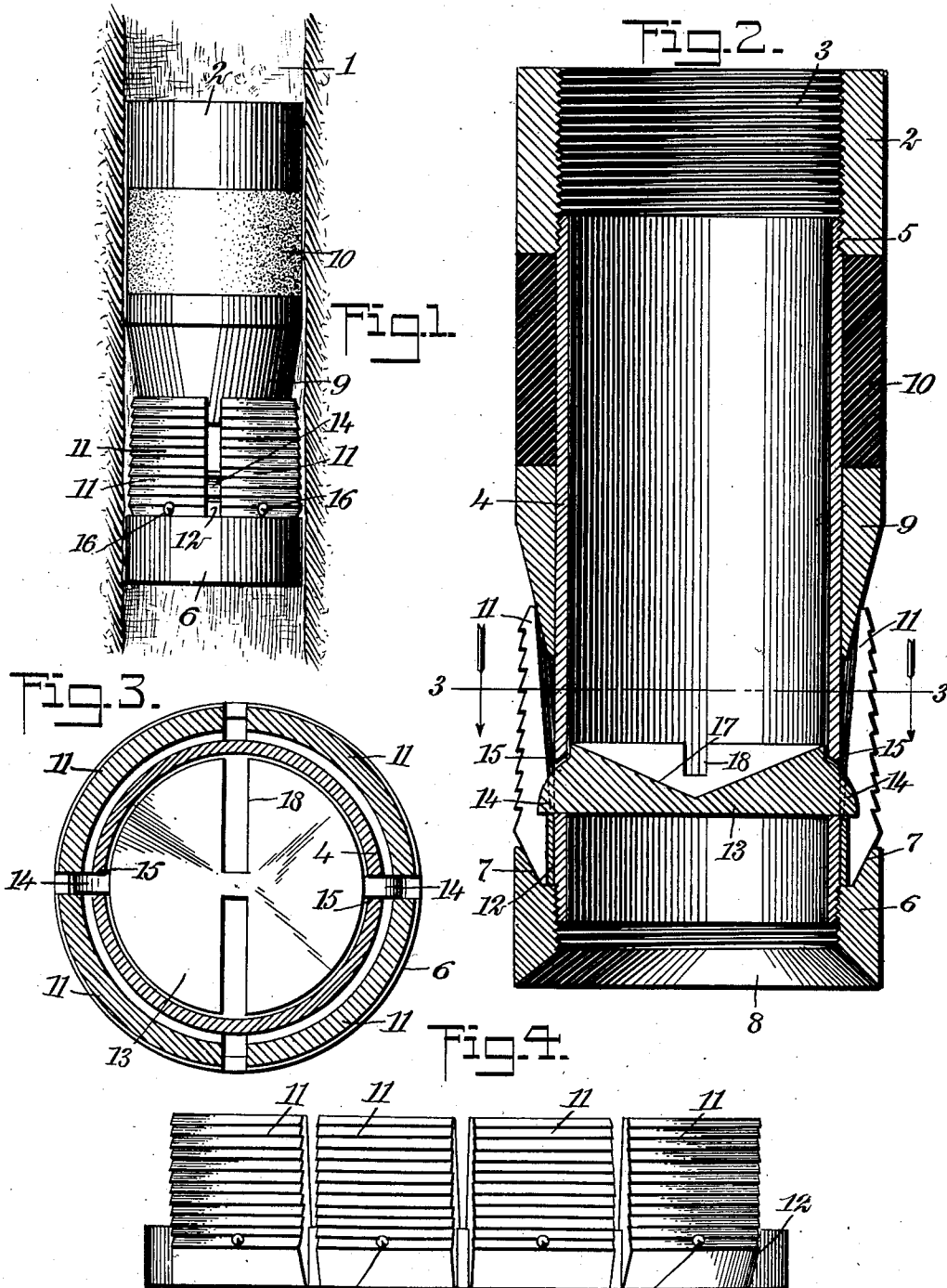
W. H. & L. P. KESSELMAN.

WELL PACKER.

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WITNESSES

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WILLIAM H. KESSELMAN AND LEWIS P. KESSELMAN, OF PARKERSBURG, WEST VIRGINIA.

WELL-PACKER.

No. 909,609.

Specification of Letters Patent.

Patented Jan. 12, 1909.

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To all whom it may concern:

Be it known that we, WILLIAM H. KESSELMAN and LEWIS P. KESSELMAN, both citizens of the United States, and residents of Parkersburg, in the county of Wood and State of West Virginia, have invented a new and Improved Well-Packer, of which the following is a full, clear, and exact description.

This invention relates to well packers and more particularly to packers used in connection with oil, gas and Artesian wells, for preventing the flow of fluid of any kind into the well from an opening effecting communication between the well and a pocket or cave adjacent thereto.

The object of the invention is to provide a simple, strong and durable well packer adapted to be inserted into a well and to be jammed in position, automatically shutting off the flow of fluid from an opening or leak in the side of the well.

The invention consists in the construction and combination of parts to be more particularly described hereinafter and fully pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 represents a section of a well and shows our packer placed in position therewithin; Fig. 2 is an enlarged vertical section through the packer; Fig. 3 is a section on the line 3—3 of Fig. 2; and Fig. 4 is an elevation of a detail, showing the same in an extended position.

Before proceeding to a more detailed explanation of our invention, it should be understood that in wells, such as oil, gas, or Artesian wells, it is frequently necessary to prevent the flow of fluids of various kinds from pockets or recesses in the strata, into the well bore through accidental openings. At the same time the well bore must remain unobstructed to permit the escape from the well of the fluid which it contains.

Our well packer serves to stop openings which permit the flow of foreign fluids into the well, and at the same time is so constructed that the well bore itself remains unobstructed and the fluid contained in the well can escape freely through the bore.

Our well packer comprises cylindrical

members and means for jamming the packer in position at the leak, the fluid within the well being free to escape through the cylindrical members.

Referring more particularly to the drawings, 1 represents a well bore or the usual kind. Our packer has a coupling 2 of suitable size to fit snugly within the well bore and provided with screw-threads 3 by means of which it can be easily secured to the well casing. The coupling is preferably fashioned from metal such as steel or iron. A tube 4 of similar material is secured to the coupling 2 by means of a threaded end 5 screwed in position in the threaded opening through the coupling. The tube 4 is threaded near the lower end and carries a correspondingly threaded head 6 having a tapered counter-bore 7 at the end adjacent to the tube 4 and surrounding the same. At the lower end 8 the head 6 is beveled outwardly. A tapered ring or sleeve 9 is loosely mounted upon the tube 4. The sleeve 9 and the head 6 are preferably formed of suitable metal such as steel or iron. Between the sleeve 9 and the coupling 2 the tube 4 carries a solid annular member or ring 10 of rubber or other suitable resilient material. We also provide dogs 11 preferably four in number and rigidly mounted suitable distances apart upon a spring band 12, by means of rivets 16. At the outer faces, the dogs 11 are serrated or toothed as is shown most clearly in Fig. 4 and are beveled at the lower ends to fit snugly, together with the band 12, in the counter-bore 7, when the band is bent into circular form and inserted in position surrounding the tube 4. The tapered end of the sleeve 9 is arranged between the tube 4 and the upper ends of the dogs 11. A disk 13 having diametrically opposed toes 14 is arranged within the tube 4, having the toes projecting laterally through suitable openings 15 in the sides of the tube and engaging the band 12 between adjacent dogs 11. The disk 13 by means of the toes 14 holds the dogs and the band in position upon the tube 4. The disk has a conical recess 17 in the upper surface and is provided with opposite inwardly disposed notches 18. The conical recess and the notches are for the purpose of weakening the disk, so that if a weight is allowed to fall into the well and strike the disk the latter will be fractured thereby. The operation of our invention is as fol-

lows: The packer is attached to the casing by means of the coupling 2, and is lowered into the well to a point adjacent to the opening through which the foreign fluid enters the well, and covering the opening. A weight is then lowered or dropped inside the casing and striking the disk fractures the latter, the pieces of the disk falling into the well. When the dogs 11 are released by the breaking of the disk the spring band 12 forces them outwardly against the wall of the well. The casing is then moved downwardly within the well bore and the conical sleeve 9 is forced against the dogs 11 and spreads the latter outwardly, forcing them into firm engagement with the wall of the well; at the same time the rubber ring 10 is jammed between the coupling 2 and the sleeve 9, the movement of the latter being resisted by the dogs, and thereby the ring is expanded against the walls of the well. In this way the leak is stopped and the flow of fluid into the well bore is prevented. At the same time the well bore itself remains unobstructed and the fluid contained in the well can escape freely through the tube 4.

Having thus described our invention we claim as new, and desire to secure by Letters Patent:—

1. In a well packer, in combination, a tubular body having a coupling adapted to be secured to a well casing, said body further having a head presenting a counter-bore, dogs carried upon said body and having the ends engaging said counter-bore, a tapered sleeve mounted upon said body and having an end engaging said dogs and serving to spread the same apart, means for displacing said dogs from said counterbore against the sides of said well bore and an elastic ring mounted upon said body between said coupling and said sleeve and adapted to be expanded against the well wall when the well casing is moved within the well bore and the movement of the sleeve is resisted by the

dogs jammed in position against the well wall.

2. In a well packer, in combination, a tubular body having a coupling adapted to be secured to a well casing, said body having a head presenting a counter-bore, a spring band mounted in said counter-bore, serrated dogs secured to said spring band and having ends located in said counter-bore, a tapered sleeve movably mounted upon said body and having an end located between said body and said dogs, an elastic ring mounted upon said body between said coupling and said sleeve, and a frangible member arranged within said body and engaging said band to hold said dogs removably in position.

3. In a well packer, in combination, a tubular body having a coupling adapted to be secured to a well casing, said body having a head presenting a counter-bore, a spring band removably mounted upon said body and extending into said counter-bore, separated dogs having serrated outer faces mounted upon said band and having ends arranged in said counter-bore, a tapered sleeve movably mounted upon said body and having a tapered end located between said body and said dogs, an elastic ring mounted upon said body between said coupling and said sleeve, said body having openings adjacent to said dogs, and a frangible disk arranged within said body and having toes extending through said openings of said body and engaging said band to hold said dogs in position, said disk being adapted to be fractured by the impact of a weight thereagainst.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM H. KESSELMAN.
LEWIS P. KESSELMAN.

Witnesses:

C. W. BIELER,
U. S. DITTMUN.