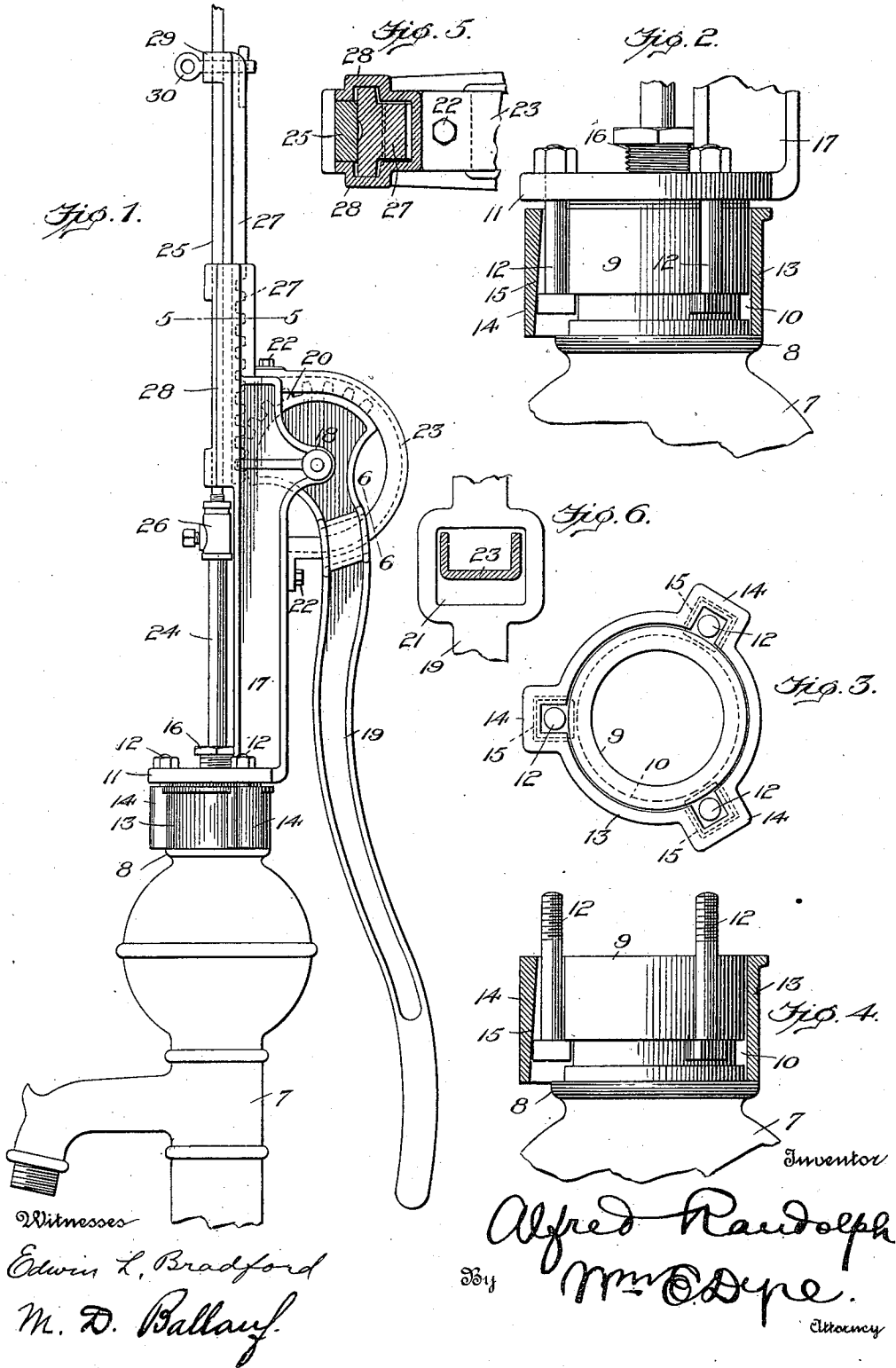


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WINDMILL PUMP.
APPLICATION FILED MAY 18, 1910.

975,280.

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UNITED STATES PATENT OFFICE.

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WINDMILL-PUMP.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALFRED RANDOLPH, a citizen of the United States, residing at Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Windmill-Pumps; and I do hereby 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.

My invention relates to pumps, particularly to windmill pumps together with connections for operating same.

For its object this invention contemplates an improved structural arrangement of parts both from an economical and operative standpoint; also the production of a pump which is more readily and accurately assembled than those heretofore known to the trade, and one which greatly facilitates the introduction and withdrawal of its working cylinder and riser pipe into or from a well, through the pump standard when occasion arises, by skilled or unskilled persons alike.

The invention will be hereinafter particularly described and pointed out in the claims following.

In the accompanying drawings which form part of this application, and whereon corresponding numerals refer to like parts in the several views: Figure 1 represents a side elevation of my invention, the customary superimposed flat-rod, and the lower end of the pump standard being broken away for economy of space. Fig. 2 is a fragmentary view partly in side elevation and partly in section showing the pump top or head. Fig. 3 is a top plan view of the pump head, immediately below the pump bearer and its integral cap or cover. Fig. 4 is a view similar to Fig. 2, also showing the bearer removed, two of the bearer retaining bolts in position and their surrounding retaining ring or collar in section. Fig. 5 is a transverse sectional view taken on the line 5—5 Fig. 1, and Fig. 6 is also a transverse sectional view taken on the line 6—6, Fig. 1.

Reference being had to the drawings and numerals thereon, 7 represents a pump standard of ordinary construction, shouldered as at 8, and surmounted by a cylindrical head 9 grooved peripherally as at 10.

Resting upon the upper edge of head 9 and suitably packed with relation thereto is a cap or top cover 11 securely but removably bolted to the standard 7 by means of ordinary bearer bolts 12 the heads whereof rest partly in the peripheral groove 10 aforesaid. Surrounding and inclosing the said pump head or upper end of the pump standard 9 is a bolt-retaining ring or collar 13 which is substantially cylindrical in form, but provided with radial bolt-pockets 14 vertically arranged at points equidistant in the circumference of said collar 13, as best shown by Fig. 3, and tapering from top to bottom as clearly shown at 15 by one of said pockets in Figs. 2 and 4. When introduced over the pump head 9 and bearer-bolts 12 the said inclined walls 15 serve to force the head of each bolt 12 into close engagement with the peripheral groove 10 surrounding said head, where they are positively retained in a vertical position against the possibility of accidental dislodgment.

The outer edge of the cap or top cover 11 is broken by bolt holes to receive the threaded end of bearer bolts 12; it is also perforated centrally to receive, in threaded relation, an ordinary stuffing box gland 16, and is surmounted by the bearer 17 cast integral with said cap and rising from one edge thereof. This bearer 17 is preferably of channeled form, and upon its upper portion is provided with rearwardly projecting parallel ears 18 between which is fulcrumed the pump handle or lever 19 having a segmental gear 20 upon its upper end, and a rectangular opening 21 at the opposite side of its fulcrum. Bolted at the longitudinal center of the bearer 17 above and below the ears 18, as shown at 22, is a semi-circular gear-guard 23 which is practically U-shape in cross-section as best illustrated by Fig. 6, and is encircled by the opening 21 in handle or lever 19, which like the guard aforesaid is struck upon a radius of which the lever fulcrum is the center.

Projecting upward from the working cylinder (not shown) of the pump, and through the stuffing-box gland 16 is the ordinary round-rod or pump-rod 24, same being secured to the customary windmill flat-rod 25 by a suitable coupling 26, while as shown by Fig. 1 there is adjacent to said flat-rod a vertically movable rack 27, preferably of the cross-sectional shape shown by Fig. 5,

and, as there also shown, practically embraced by a forward projection 28 upon the upper end of bearer 17, made to fit it and serving as a guide therefor. The toothed
 5 end of rack bar 27 is constantly in mesh with the segmental gear 20 upon the pump handle or lever 19, while its upstanding opposite end is angled as at 29 where it surrounds the flat-rod 25 to which it may be secured by a
 10 pump pin 30 passing horizontally through both members when it is desired to operate the pump manually.

This being a description of my invention in its best form of construction at present
 15 known to me, it will be quite unnecessary to set forth its uses and operation as a pump, which are those of this class of pumps generally, and are well understood. It may be advisable, however, to point out the accuracy and precision with which all bearings
 20 for reciprocating parts may be machined in a structure such as represented by the present invention, comprising a unitary bearer 17 and top cap or cover 11, thereby insuring
 25 perfect alinement without the necessity of further adjustment. The novel features of construction hereinbefore described also render it possible to rotate the bearer 17 and dependent parts, when occasion requires,
 30 without liability of disturbing the alinement referred to; and moreover, when it is desired to remove or replace a pump in its standard 7, the structural arrangement and relation of bolts 12, retaining collar 13, and
 35 bolt-pockets 14 greatly facilitate such operation as hereinbefore mentioned.

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

40 1. In a pump the combination with a pump head, of a cover for said head, bolts for securing said head and cover together, and a ring surrounding the pump head and bolts for always retaining said bolts in operative position.
 45

2. In a pump the combination with a pump head, of a cover for said head, bolts for securing said head and cover together, and an independent ring inclosing the pump

head and bolts for always retaining said 50 bolts in operative position.

3. In a pump the combination with a pump head, of a cover for said head, bolts for securing said head and cover together, a ring or collar surrounding the pump head 55 and bolts and bolt pockets in said ring or collar for always retaining said bolts in operative position.

4. In a pump the combination with a pump head having a peripheral groove 60 therein, of a cover for said head, bolts for engaging said groove and also the cover aforesaid, and a ring or collar surrounding the pump head for always retaining said bolts in operative position. 65

5. In a pump the combination with a pump head, of a cover for said head surmounted by a bearer integral therewith, bolts for securing said head and cover together, and a ring or collar inclosing the 70 pump head and bolts for always retaining the latter in operative position.

6. In a pump the combination with a pump head, of a cover for said head surmounted by a bearer integral therewith, 75 bolts for securing said head and cover together, a ring or collar surrounding the pump head, and bolt pockets in said ring or collar having tapering walls for seating said bolts radially and always retaining 80 them in vertical position.

7. In a pump the combination with a pump standard, of a bearer surmounting said standard, a pump lever provided with a transverse opening near its fulcrum, a 85 reciprocating pump rod having a toothed rack, a segmental gear upon said lever engaging the rack aforesaid, and a guard secured to said bearer for inclosing said gear and bisecting the transverse opening in the pump 90 lever aforesaid.

In testimony whereof I affix my signature, in presence of two subscribing witnesses.

ALFRED RANDOLPH.

Witnesses:

C. P. MORLAN,
 W. G. BUTLER.