

June 1, 1937.

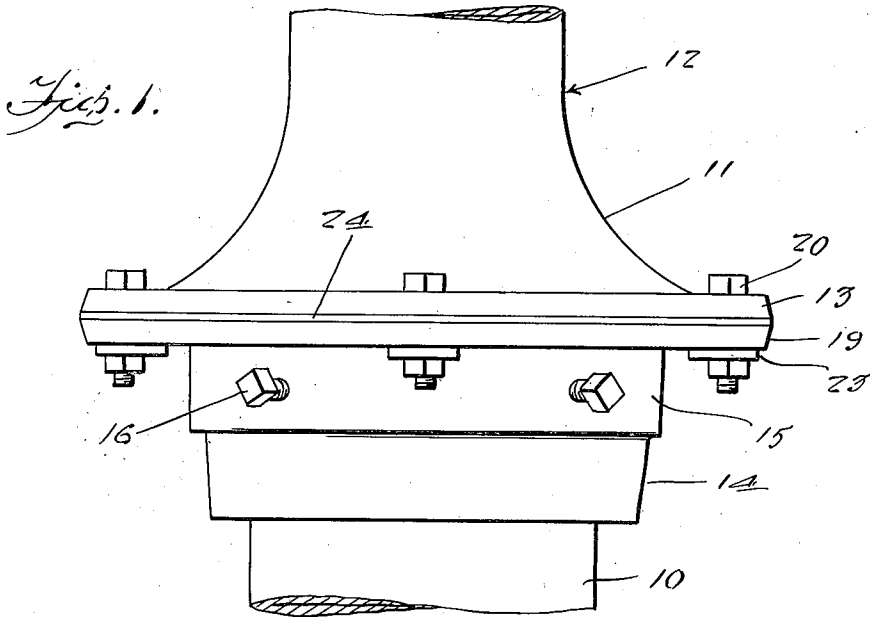
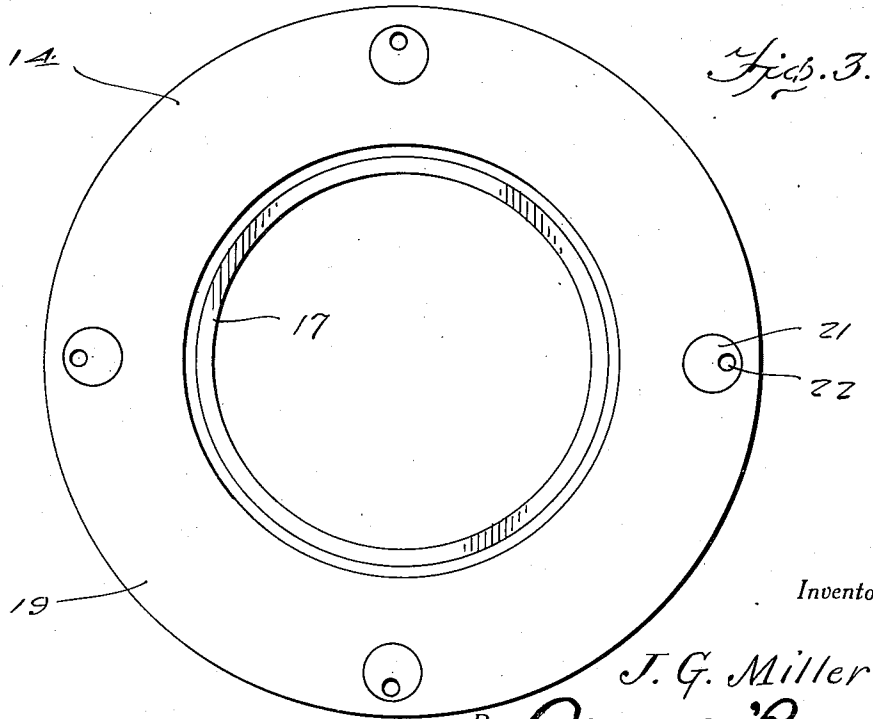
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2,082,173

PUMP STAND ASSEMBLING AND RETAINING MEANS

Filed Oct. 2, 1936

2 Sheets-Sheet 1



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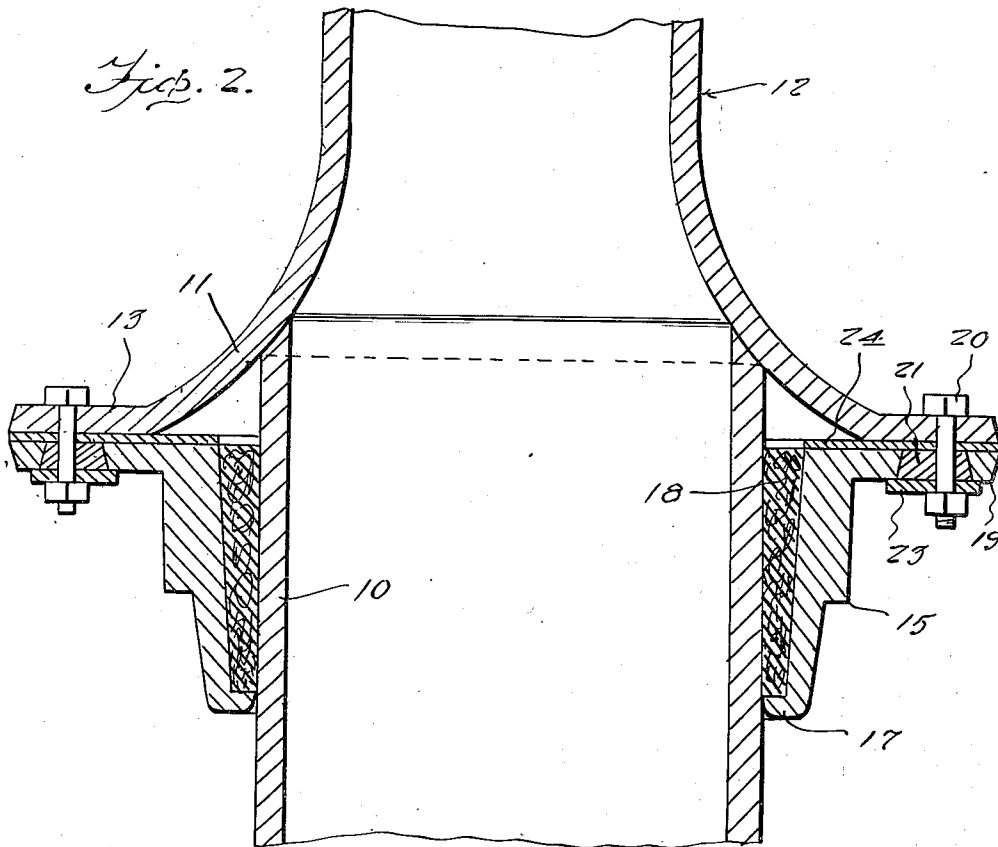
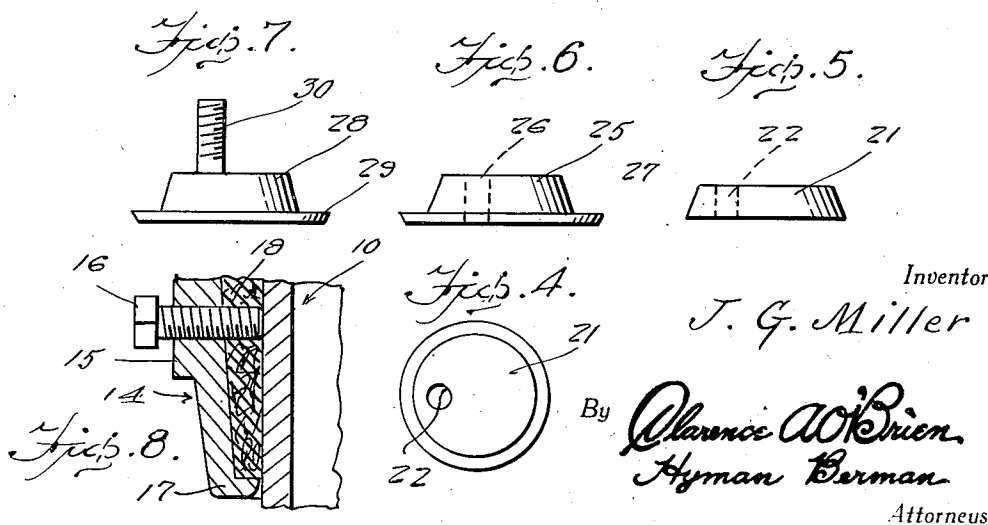
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,082,173

PUMP STAND ASSEMBLING AND RETAIN-
ING MEANS

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3 Claims. (Cl. 285—134)

This invention relates to novel assembling and anchoring or retaining means for adequately and effectively joining the base portion of a conventional pump stand to a well casing.

There has been a long felt need for the provision of practicable sanitary and fluid-tight means to permit the flared bell-end of a pump stand to be fitted telescopically down over the upper protruding end of a well casing and to accomplish this result without the use of threads, while at the same time providing the requisite retaining connection. After due deliberation on the State regulations and requirements, I have perfected an assemblage of features, which, I believe, accomplish the desired results in an aptly fitted and reliable manner.

In reducing the principles of the present inventive conception to actual practice, I have found it expedient and practicable to utilize a simple and inexpensive flanged collar and associated details, wherein the collar is secured by set screws to the upper end of the well casing and bolted to the flange of the stand and so designed as to provide a channel or receptacle for an asphaltum filler.

Other features and advantages will become more readily apparent from the following description and drawings.

In the accompanying drawings, wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is an elevational view showing a fragment of the upper end portion of the well casing, illustrating the lower portion of the stand, and special assembling and joining means between these parts constituting the novelty of the present invention.

Figure 2 is an enlarged central vertical sectional view detailing the selection and coordination of features more satisfactorily.

Figure 3 is a top plan view of the flanged attaching or jointing collar constituting the essential features of the invention.

Figures 4, 5, 6, and 7 are detail elevational views of an eccentrically apertured adapter washer to facilitate bolting the flanged collar to the flanged stand base.

Figure 8 is a fragmentary view showing the set screw arrangement.

Reference is conveniently had first to Figures 1 and 2. Here the well casing, which is conventional, is denoted by the numeral 10, and in practice the upper end thereof is preferably beveled to permit it to fit telescopically into the flared or bell-shaped base portion 11 of the conventional pump stand 12. The bell-end is provided with an

outstanding annular flange 13 having existing bolt holes therein such as are ordinarily employed in fastening the stand on a platform, (not shown). In accordance with the present invention, the stand simply rests firmly down on the beveled upper end of the well casing, as illustrated to advantage in Figure 2. The connection is made through the instrumentality of the improved coupling and retaining means.

The latter means comprises an annular collar 14 having a thickened annular portion 15 to accommodate the radial set screws 16 (see Figure 8) which bear against the adjacent end portion of the well casing. At the lower end of the collar is an intumed relatively short flange 17 which is in effect a ledge. In fact, this flange 17 cooperates with the inner periphery of the collar in spacing said portion of the collar from the well casing to provide a substantially V-shaped pocket to accommodate the filler, that is, the plastic filler 18. The feature 18 provides the desired expansion joint. At the upper end the collar is provided with a relatively wide outstanding circular flange 19. This is provided with relatively large openings or holes to accommodate the fastening bolts 20. It will be noted that the holes are tapered and are adapted to accommodate composition adapter plugs 21. The plugs may be of rubber, lead, or other suitable material. A simple type is shown in Figures 4 and 5, and this is provided with an eccentric bolt hole 22 which can be turned around in an orbital path so as to accommodate the stem of the clamping bolt 20. In practice the bolt holes existing in the flange 13 vary, and for this reason it is generally necessary to have these adjustable eccentrically apertured plugs 21 to permit the bolt hole to be placed properly to insure the desired clamping action. In addition to using the plugs and bolts, I find it expedient and practical to also use metal binding or clamping washer 23 of a diameter greater than the plug accommodation holes. This is advantageous in forming a fluid-tight joint. The fluid-tight joint is, however, completed by the disposition between the flange 13 and flange 19 of a gasket 24.

In Figures 6 and 7, different type adapter plugs are illustrated. For example, the tapered plug 25 in Figure 6 is formed with an eccentric bolt hole 26 and provided with an integral abutment flange 27 which takes the place of the separate washer 23 shown in the assembly in Figure 2.

In Figure 8 the plug 28 is provided with a washer-forming flange 29 and an eccentric screw-threaded stud 30 such as may project up through the bolt hole in the flange 13 to accommodate a

clamping nut (not shown) in an obvious manner.

It is obvious that this sanitary pump stand or flange and collar assembly is primarily adapted for providing a water-tight joint between a conventional well casing and a more or less standardized pump stand without the use of screw threads on the well casing.

This pump stand is constructed to meet the requirements of the Wisconsin Well Drillers Sanitary Code. When connected in full accordance with the instructions given herein, it will make a water-tight joint between the well casing and hand pump without the use of a thread on the well casing or pipe.

The drawings clearly show how the connection is made. The well casing must extend at least 6 inches above the platform (not shown) to allow it to go up into the pump base so that the pump will sit directly upon the casing. The stand requires $2\frac{3}{4}$ inches and at least $1\frac{1}{2}$ or 2 inches should be allowed between the bottom of the stand and platform. This is to prevent frost heaving of the platform interfering with the pump stand.

In pouring concrete for a pump platform, it is very important to allow a space of about $1\frac{1}{2}$ inches or 2 inches between the well casing and the concrete. This space is to be filled with multi-sieved asphaltum or roofing cement; this material is pliable and will "give" when the frost heaves the platform in winter, thus preventing any pull on the well casing. Much damage has been done to drilled wells by surface water seeping into the well because the mistake has been made of cementing up tight against the casing. Or worse still, when the cement has been poured flush with the pump stand much damage may result. In the spring, when the frost leaves the ground, you may find a "pulled" well casing, with the platform being held off the ground; a broken joint in the well casing, or the pump stand stripped from the casing leaving a funnel in the concrete the shape of the stand to allow water to gather and drain into the well.

Instructions for installing:

1. Be sure that the "stand" goes over the well casing, as the diameter may vary a little and may not be perfectly round.

2. Place gasket on top of stand.

3. Set pump on top of casing in the exact desired position.

4. Bring up stand against the pump, put in bolts and draw up so that the two parts come up close together with gasket between them (do not draw too tight).

5. Plumb the position of the pump, and hold in position by securely tightening the four $\frac{1}{2}$ inch set screws in the stand.

6. Remove the pump and gasket from the stand, and caulk the space as shown in the drawings with the materials mentioned. If roofing cement is used, a thin coating should be applied to the top of the stand before the gasket is laid.

7. Lower the drop-pipe and connect the pump to it. Apply a thin coating of roofing cement to the top side of the gasket inside of the pump base circle as pump bases are not always true. Then connect the pump to the stand with the four bolts, being sure to draw up tightly all bolts and set screws. This will make a water-tight and vermin-proof joint.

It is thought that the description taken in connection with the drawings will enable a clear

understanding of the invention to be had. Therefore, a more lengthy description is thought unnecessary.

While the preferred embodiment of the invention has been shown and described, it is to be understood that minor changes coming within the field of invention claimed may be resorted to if desired.

I claim:

1. In a structure of the class described, in combination, a well casing, a one-piece pump stand including a base having an outwardly flared conical portion sitting down over the upper end of said well casing, said conical portion being provided with an integral outstanding apertured retaining flange, a separate collar surrounding the adjacent underlying portion of the well casing and provided with a flange abutting and secured to said first-named flange, set screws carried by said collar and secured against the well casing, said collar surrounding the well casing in concentric spaced relation to form an annular pocket, and plastic filler means in said pocket providing a fluid-tight joint between the collar and well casing.

2. As a new article of manufacture, a conventional pump stand adapter and clamping collar unit designed to permit the base portion of the pump stand to be assembled on and fastened to an associated well casing comprising an annular body portion provided at one end with an in-turned endless lip adapted to abut the well casing and to define a plastic containing receptacle, the opposite end of said annular body being provided with a right angularly disposed flange fashioned to directly contact a complementary flange on the base portion of said pump stand, and being provided with a plurality of circumferentially spaced tapered holes, tapered plugs fitted into said holes, said plugs being provided with eccentric bolt holes, washers of a diameter greater than said tapered holes adapted to press against the adjacent surface of the outstanding flange and adjacent plugs, and bolts associated with the bolt holes and washers in the manner and for the purposes described.

3. In a structural assemblage of the class described, in combination, a well casing, a one-piece pump stand including a base having an outwardly flared conical portion fitting down over the upper end of said well casing, said conical portion terminating at its bottom with an integral outstanding annular anchoring flange, said flange being flat and projecting at right angles to the longitudinal axis of said well casing, a separate clamping and anchoring collar surrounding the well casing, said collar being slidably mounted on the well casing, being provided with fluid-tight packing means, being further provided at its upper end with an annular outstanding flange matching said first-named flange and being in direct abutting and clamping relationship thereto and of an external diameter corresponding to the diameter of said first-named retaining flange, adjustable and variable means separably connecting said flanges together in superimposed relationship, and retaining means carried by the collar and engageable with the well casing to hold the collar in a set position and to maintain the conical portion well down over said well casing.

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