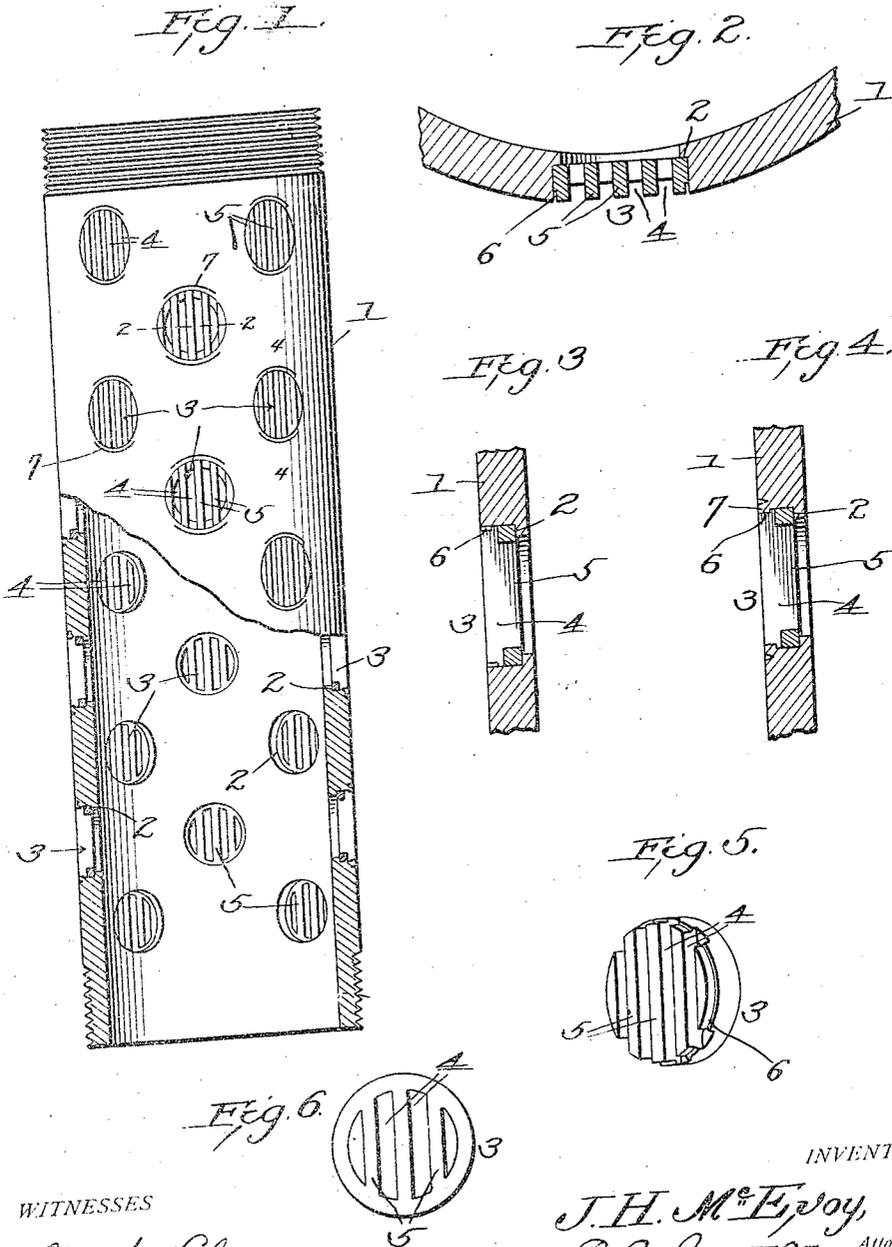


J. H. McEVoy.
 WELL STRAINER.
 APPLICATION FILED SEPT. 24, 1912.

Patented Sept. 28, 1915.

1,154,709.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOSEPH H. McEVoy, OF HOUSTON, TEXAS.

WELL-STRAINER.

1,154,709.

Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed September 24, 1912. Serial No. 722,146.

To all whom it may concern:

Be it known that I, JOSEPH H. McEVoy, a citizen of the United States of America, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Well-Strainers, of which the following is a specification.

This invention relates to certain new and useful improvements in well strainers and particularly to plugs applied directly to an aperture used in pipe sections for wells, and has for its object the improvement of the general construction of strainer as disclosed in my former Patent #828,956 issued to me, August 21, 1906.

A further object of the invention is to provide a strainer plug which is provided with slits, the intermediate portions forming bars which extend the entire thickness through the same, in order to greatly strengthen the plug, whereby the plug will stand the excessive strain to which it is subjected when in use.

A still further object of the invention is to improve the construction of the plug by forming a shoulder upon one end thereof adapted to receive the swage portion of the pipe section when in position therein, in order to securely fasten the plug when in position within the opening in order to withstand the outward as well as the inward strain to which the plug is subjected when in use.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

I am aware that I am not the first to secure a plug within an opening of a pipe section by swaging the portion of the wall of the opening in order to secure the plug therein, but in constructions of this character now in use, it has been found that it was impossible to obtain a smooth surface upon the outer wall of the pipe section by so swaging, and it has been found that plugs secured in this manner are not maintained against the outward strain to which they are subjected, and that by providing plugs with annular shoulders to receive the swage portions, the plug is secured in position therein without any danger of it moving in either direction, and at the same time a swage or upset portion of the pipe section

is forced into the annular rabbet forming the shoulder of the plug in such a manner that it is impossible for the plug to move outwardly after once being secured in position.

In the drawings—Figure 1, is a side elevation of a pipe section partly in section, showing the application of my improved construction of plug thereto and the manner of securing the same in position therein; Fig. 2, is an enlarged horizontal section taken on the line 2—2 of Fig. 1, showing a plug arranged within a stepped opening before the wall of the opening has been swaged into the rabbet of the plug; Fig. 3, is a vertical enlarged section showing a plug in a similar position; Fig. 4, is a vertical enlarged section showing the wall of the opening swaged into the rabbet of the plug in order to secure the same firmly in position therein; Fig. 5, is a perspective view of a plug constructed in accordance with my invention; and Fig. 6, is an inverted plan view of the plug.

Like numerals of reference, refer to like parts in the several figures of the drawings.

In the drawings, 1 indicates a pipe section which is provided with a plurality of stepped openings arranged in any desired manner, each opening having an annular shoulder 2 forming a seat upon which the plug 3 is adapted to rest when in position, as shown. These openings can be formed of any desired configuration, but in the drawing, I have shown them circular, which is preferable, and the plugs of course, are constructed to conform to the openings in order to fit snugly therein, and to provide a pipe section with a plurality of strainers which are so arranged within the same that the section will not be weakened to any extent.

The plugs 3 are provided with parallel slits 4 at one end, which extend entirely across the same forming intermediate bars 5 which in this instance, are shown with straight side edges, but it is of course understood that the outer faces of the same can be spread laterally by swaging or otherwise forcing the same into such a shape as to form inclined or beveled faces, as disclosed in my former patent, and I wish it to be understood that I do not limit myself to the configuration of the bars formed by the slits as various shapes and designs can be

employed without departing from the spirit of my invention.

The slits 4 terminate short of the side walls of the plug adjacent the inner end, as clearly shown in Fig. 6, the intermediate bars formed by said slits being connected to the body of the plug throughout the length of the plug in order to increase the strength of a plug constructed in this manner in order to provide a plug which will stand the strain to which it is subjected when in use, as I have found that a plug constructed tubular in form with a head having parallel slits formed therein to provide the strainer bars, are not as stiff and strong and will not stand as much strain as a thicker or longer plug, as it will be seen that the strainer bars are only connected at certain points with the body of the plug, and that by forming a solid plug, as disclosed, the strainer bars extend the entire length of the plug which prevents the same from being forced inwardly or outwardly when in position within a pipe section, and also prevents the plug from yielding in any direction when they are being swaged in position within the openings. By constructing a plug in this manner, the slits are formed in the outer end of the plug the desired depth and the remaining thickness of the plug between the slits is punched with a suitable instrument in order to provide slits which extend entirely through the plug, but terminate short of the side walls of the plug at the rear end of the plug.

This construction not only provides an exceedingly strong and durable strainer plug, but obtains many advantages over plugs of this character now in use, as the slits at the outer end extend entirely across the end thereof forming a strainer with a reticulated portion, substantially the same size as the opening in which it is placed, the strainer bars being so connected to the body of the plug that the ends thereof are connected directly to the wall of the plug throughout their thickness which increases the strength of the bars as is desirable in plugs of this character.

The plugs 3 are rabbeted at their outer ends to form annular shoulders 6 which receive the swage portion 7 of the pipe section in which it is arranged when the pipe is upset by a suitable instrument. In the drawing, I have shown segmental upsets, but it is of course understood that the entire wall of the opening of the pipe can be upset or the same can be upset at any of the desired points, in order to force the metal into the rabbet of the plug against the shoulder thereof so as to prevent the plug from moving outwardly within the opening after it has been once secured therein.

From the foregoing description, it will be

seen that I have provided an improved construction of plug and also novel means for securing a plug in position within the opening formed in the pipe section in such a manner that the plug at one end, is seated upon a shoulder and at its other end is abutted by an upset portion which co-acts with the shoulder of the plug in such a manner that after a plug has been once placed in position, the same will be securely fastened therein so as to withstand the strain to which it is subjected. It will also be seen that I have improved the construction of plug in connection with the strainer bars by forming the bars of the same thickness as the thickness of the plug in order to increase the wearing qualities of the plug and to prevent the same from being distorted when in use.

I claim:

1. In a well strainer, the combination of a pipe section provided with an aperture having an annular shoulder, of a plug seated upon said shoulder within said aperture, said plug having an annular rabbet at its other end to receive an upset portion of said pipe section.

2. A strainer plug provided with an annular rabbeted end, and slits extending entirely across said plug at one end and terminating short of the wall of the plug at the other end.

3. A strainer plug comprising a cylindrical body having an annular rabbet formed at one end and slits extending entirely across said rabbeted end and downwardly through said plug, said slits terminating short of the circumferential wall of said plug at its other end.

4. In a well strainer, the combination with a pipe section provided with stepped openings of a plug arranged within said opening having an annular rabbet at its outer end, said plug being secured within said opening by swaging the adjacent wall of said opening within the rabbet of said plug.

5. A strainer plug provided with an annular rabbeted outer end and slits extending entirely across said outer end, said slits terminating short of the circumferential wall of said plug at its inner end forming strainer bars having a thickness equal to the length of the plug.

6. A strainer plug provided with a circumferential side wall and slits extending entirely across said plug at one end, said slits extending downwardly through the plug for the thickness thereof to leave an annular solid portion at the rear end of said plug.

7. In a well strainer, the combination with a pipe section having an aperture provided with an annular shoulder, of a plug arranged within said aperture against said

shoulder, said plug being secured within said aperture by upsetting the adjacent wall of said aperture.

5 8. In a well strainer, a pipe section provided with a stepped aperture, a strainer plug provided with slits seated within said aperture, said plug having an annular rabbet at one end to receive the upset portion

of said pipe section for locking said plug within said aperture.

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

JOSEPH H. McEVROY.

Witnesses:

P. GEO. MAUCKY,
HARRY S. GORDON.