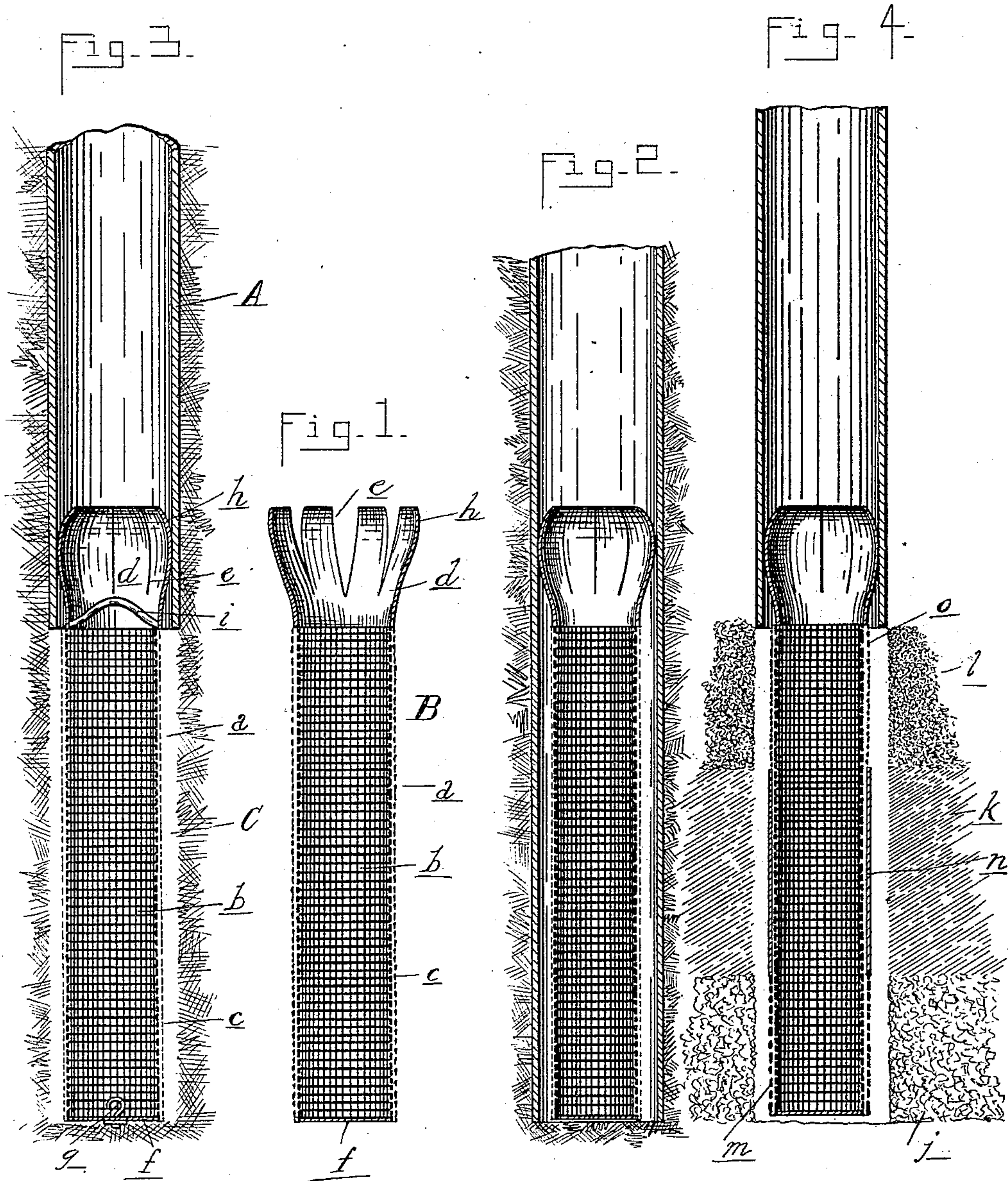


(No Model.)

M. WALKER.
TUBULAR WELL.

No. 426,884.

Patented Apr. 29, 1890.



Witnesses:

P. M. Hubbert
P. M. Hubbert

Inventor:
Miciah Walker.

James Whittmore Att'y.

UNITED STATES PATENT OFFICE.

MICIAH WALKER, OF PORT HURON, MICHIGAN.

TUBULAR WELL.

SPECIFICATION forming part of Letters Patent No. 426,884, dated April 29, 1890.

Application filed February 25, 1890. Serial No. 341,755. (No model.)

To all whom it may concern:

Be it known that I, MICIAH WALKER, a citizen of the United States, residing at Port Huron, in the county of St. Clair and State of Michigan, have invented certain new and useful Improvements in Tubular Wells, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to new and useful improvements in tubular wells; and the invention consists in the peculiar arrangement and construction of a strainer designed to be placed in a space below the end of the tube, 15 this space being preferably made by the withdrawal of the tube itself, the strainer being designed to be inserted with the casing or tube and held in place by a packing or expansible joint at the end thereof, all as more fully hereinafter described.

In the drawings my invention is shown in vertical central section.

Figure 1 shows the strainer detached. Fig. 2 shows the strainer inserted in the well before the top is raised. Fig. 3 shows the strainer as finally located and ready for use. Fig. 4 shows a modified form of strainer located in a well in which there is varying strata.

A is the casing or tube, which is sunk into the earth in any suitable and known manner.

B is the strainer, designed to be placed at the lower end of the tube or casing to prevent sediment, sand, &c., from being drawn up when the well is used in connection with a pump. This strainer I preferably construct as shown in Fig. 1, wherein *a* is a tubular perforated body, preferably made of heavy wire-cloth *b*. This body portion I preferably cover with screens *c*. These screens may consist of 40 one or more layers of fine and coarse mesh, according to the location of the well, whether it be in sandy or loam soil. At the upper end of the strainer I form a packing *d*, which may be of any suitable construction, but which I 45 preferably construct in the shape of an extensible funnel-collar formed of metal and having slits or cuts *e* in the sides. The metal in this collar is spring metal of some sort, and the diameter of the upper edge of the collar is greater than the inner diameter of the casing A, so arranged that when the strainer is put within the tube the collar *d* will form a

tight joint between the upper end of the strainer and the inner surface of the casing. This collar at its upper end is bent inward to form the rounded bearing *h* against the inner side of the casing, so that it may be more readily withdrawn from the tube without the danger of being caught in the joints between the pipes, which would be the case if the upper end of the collar were not thus rounded or beveled off. The lower end of the strainer is stopped by a plug *f*, which may be secured therein in any suitable manner, and the hook or eye *g* is secured centrally therein to withdraw the strainer in case it is desired to do so. In addition to the hook *g*, I preferably form the cross-bar *i* in the upper part of the strainer, to which a hook can be more readily secured to withdraw the strainer than is the case with the hook *g*, and as I manufacture these strainers sometimes fifteen or twenty feet in length the attachment at the top of the strainer enables me more readily to withdraw it out of its position than if it were at the bottom. After the casing has been sunk to the desired depth I withdraw it a slight distance and insert in the top of the casing the strainer B, which I push into the space C formed by the withdrawal of the tube or casing. Thus it will be seen that there is an annular space all around the strainer, and that the strainer may be inserted in position without any danger of damage, and that it is now ready for use. I preferably insert the strainer to the bottom of the tube or casing before withdrawing the same, as it can thus be put to the bottom of the well without coming in contact with the earth; but, if desired, it is evident that it may be inserted after the casing has been withdrawn, as before described.

While I preferably make the space below the end of the casing by its withdrawal, I do not limit myself to form such space in that manner, as it is evident that it can be formed in other ways.

Where I am obliged to place my strainer where there are quicksands, clay, coarse and fine gravel in varying strata, I place the strainer as shown in Fig. 4, wherein *j* represents a stratum of coarse gravel, *k* a stratum of quicksand, and *l* a stratum of fine sand. In order to make the strainer operative in such a position as this, the apertures through the

sides must necessarily be proportioned to the quality of the soil in which it is located. The kind of soil is determined readily in digging the well, and I form my strainer in such a case, 5 as shown in Fig. 4, with wire-cloth of coarse mesh at *m*, with a tight sleeve closing the tube entirely at *n* opposite the quicksand, and with the fine-mesh cloth to correspond at *o* with the fine sand. Thus I am enabled to get 10 the best results from all the strata through which my strainer passes.

What I claim as my invention is—

In a tubular well, the combination, with a casing, of a strainer below the same, a pack-

ing to which the strainer is secured, consist- 15 ing of a tubular metal collar having its upper portion curved outward and inward, respectively, and formed with a series of vertical cuts or indentations, thereby rendering the upper edge yielding, and a cross-bar in the collar, 20 substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 1st day of February, 1890.

MICIAH WALKER.

Witnesses:

P. M. HULBERT,

M. B. O'DOHERTY.