

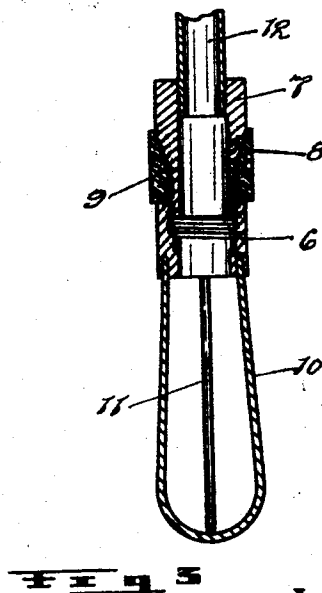
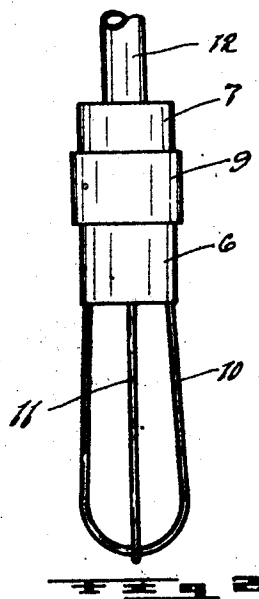
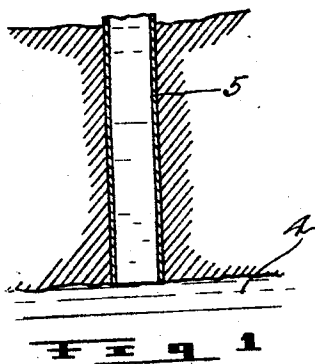
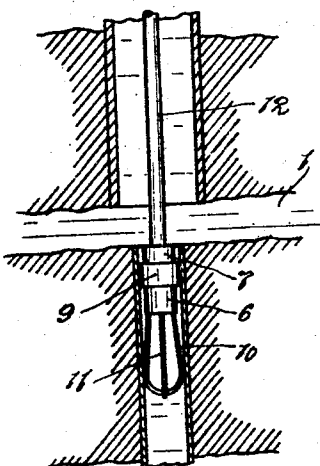
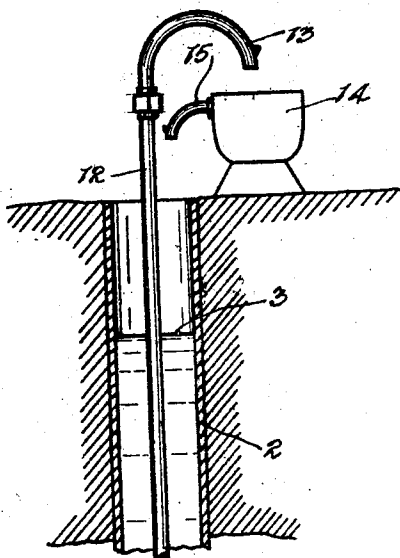
Oct. 6, 1925.

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C. K. FRIESEN

ARTESIAN WELL TOOL

Original Filed Oct. 8, 1923



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UNITED STATES PATENT OFFICE.

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ARTESIAN-WELL TOOL.

Application filed October 8, 1923, Serial No. 667,399. Renewed March 6, 1925.

To all whom it may concern:

Be it known that I, CORNELIUS K. FRIESEN, of the town of Steinbach, in the Province of Manitoba, Canada, have invented certain new and useful Improvements in Artesian-Well Tools, of which the following is the specification.

The invention relates to improvements in artesian well tools and an object of the invention is to provide a tool which can be inserted in the lower part of a well to plug or close the lower pipe in the well and permit of the discharge through a suitable pipe attached to the tool, of water from a lower area at higher pressure through an upper flow of water at lower pressure.

A further object is to construct the tool in a simple and durable manner and such that it can be inserted in the well and expanded or tightened up in the lower pipe by manipulating from the top of the well.

With the above more important objects in view the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described and later pointed out in the appended claim, reference being had to the accompanying drawing in which:

Fig. 1 is a side elevation of the tool as it appears in the well, the well being shown in vertical section.

Fig. 2 is an enlarged detailed side view of the tool.

Fig. 3 is a vertical sectional view centrally through the tool.

In the drawing like characters of reference indicate corresponding parts in the several figures.

In well drilling operations it is quite often found that one will strike an upper flow of water a comparatively short distance down from the ground surface and that upon drilling further to a lower level a stronger, cooler and higher pressure flow is met with. The pressure of the top flow will not usually raise the water in the well to ground level, but the pressure of the lower flow of water is very often sufficient to raise the water twenty or thirty feet, or more, above ground level. It is, accordingly, desirable to obtain the water supply from the lower flow and heretofore difficulty has been experienced in passing the water from the lower flow through the water of the upper flow.

According to my invention, the well is

dug in the ordinary manner until the upper flow 1 is reached, a lining pipe 2 being inserted as the well is dug. When the flow 1 is reached it is found that the water rises, say to the level as indicated at 3, in the well, which is below ground level. Well digging operations are continued below the flow 1 until a second lower flow 4 is reached, a pipe 5 being inserted in the lower part of the well as the excavating operations proceed. This lower pipe is of smaller diameter than the upper pipe and is inserted through the same. When the lower flow is reached, such being usually at a higher pressure, the water in rising is dissipated in the upper flow and in order to get the full value of the head or pressure of the water in the lower flow I insert my tool in the lower pipe beneath the upper flow.

The tool comprises a cylindrical open centered interiorly screw threaded stationary sleeve 6 into which I screw thread the lower contracted screw threaded end of an upper rotatable sleeve 7. The sleeve 7 is provided with a coned face 8, spaced from and opposing the upper end of the lower sleeve and around the upper sleeve between the coned face thereof and the upper end of the lower sleeve I locate an expansion gasket 9 having the lower end butted against the end of the sleeve 6 and the upper end tapered to conform to the coned face 8. This gasket is of rubber or similar material and in the normal or upper position of the sleeve 8 is adapted to make sliding contact with the inner wall of the pipe 5. The lower sleeve carries a pair of substantially U-shaped spring rods 10 and 11 which, when the tool is inserted in the lower pipe, are adapted to press outwardly against the inner wall of the lower pipe and whilst permitting of the endwise movement of the tool within the pipe, act to prevent rotary movement of the lower sleeve by frictionally anchoring the lower sleeve to the pipe. The upper end of the sleeve 7 is interiorly screw threaded to receive the lower end of a service pipe 12 passing upwardly and centrally through the well.

This pipe can be used as a supply pipe for a building if desired. In the present instance I have shown it as provided at the upper end with a down turned spout 13 which delivers to a trough 14. The trough is provided with an over flow spout 15 which discharges into the upper end of the pipe 2.

This tool is placed in the well in the following way:

The lower end of the pipe 12 is tightly screwed to the tool; the tool is then inserted in the well, being supported by the pipe 12. When the tool has been put into the lower pipe 5 in a location beneath the flow 1 the pipe 12 is rotated by a suitable tool, to screw the upper sleeve downwardly into the lower sleeve. As the upper sleeve moves down it expands the gasket, which makes a water tight joint with the inner wall of the pipe 5, it being here understood that the spring rods 10 and 11 at this time frictionally anchor the lower sleeve against rotation.

With the parts inserted in the well as shown, the water from the lower high pressure flow rises in the pipe 5, passes through the tool and is conveyed upwardly through the water of the upper flow by the pipe 12, where it is discharged in the present instance into the trough. There will be a constant supply of flowing water at the spout,

and the trough which is kept filled, overflows through the spout 15 into the outer pipe 2. The surplus water is accordingly accommodated in the pipe 2 which never rises above normal level. Obviously, the tool prevents any intermixing of the two waters of the two flows.

What I claim as my invention is:

An artesian well tool comprising a lower interiorly screw threaded sleeve, an upper sleeve having a contracted screw threaded end adapted to screw thread into the lower sleeve and provided with a coned face opposing the upper end of the lower sleeve, an expansible gasket surrounding the tool and positioned between the upper end of the lower sleeve and the coned face of the upper sleeve, spring anchoring arms extending downwardly from the lower end of the lower sleeve, and a service pipe screw threading into the upper end of the upper sleeve.

Signed at Steinbach this first day of June 1923.

CORNELIUS K. FRIESEN.