

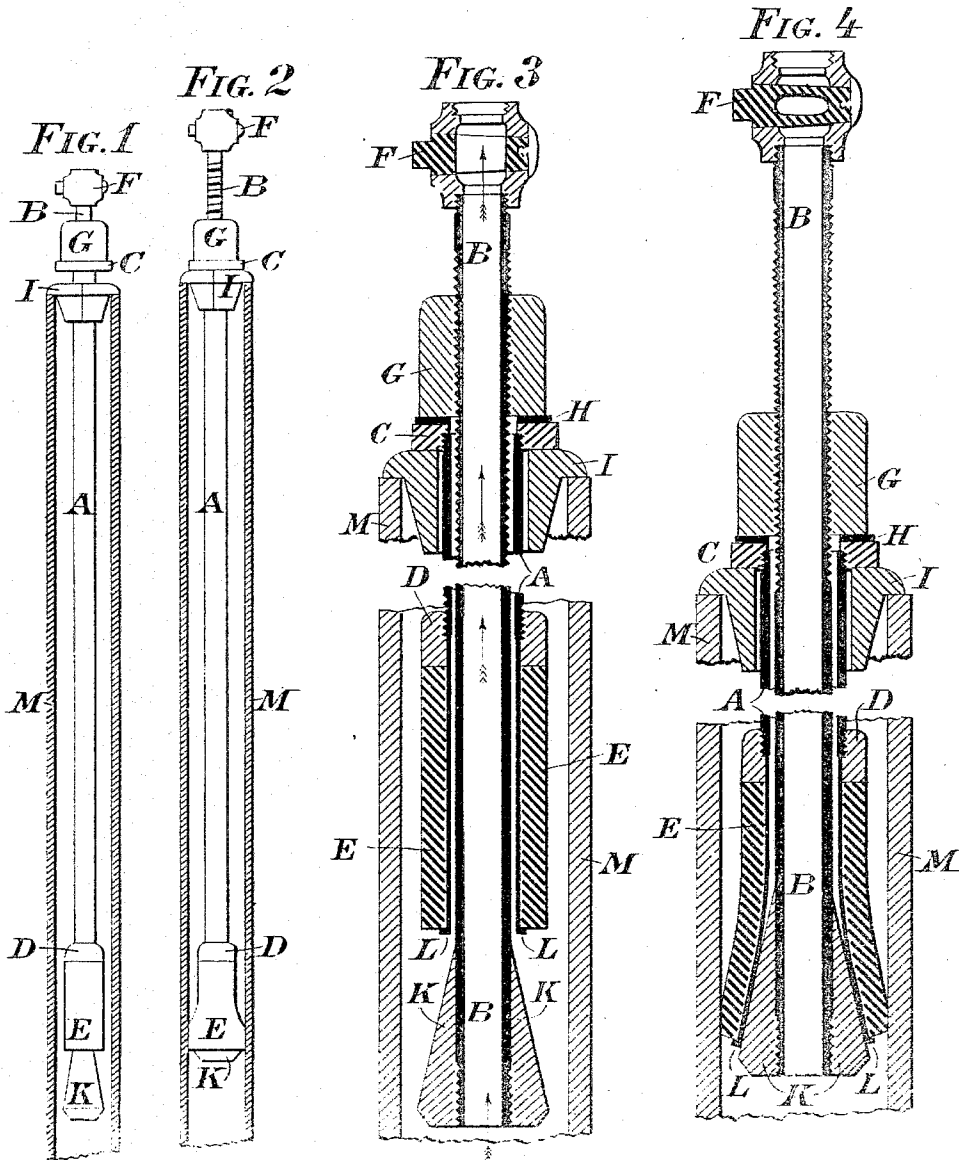
(No Model.)

J. P. SUVERKROP.

TUBE OR PIPE STOPPER FOR ARTESIAN OR DRIVEN WELLS.

No. 546,258.

Patented Sept. 10, 1895.



WITNESSES:

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TUBE OR PIPE STOPPER FOR ARTESIAN OR DRIVEN WELLS.

SPECIFICATION forming part of Letters Patent No. 546,258, dated September 10, 1895.

Application filed March 14, 1895. Serial No. 541,817. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. SUVERKROP, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Tube or Pipe Stoppers for Artesian or Driven Wells, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to removable tube and pipe stoppers or plugs as applied to Artesian or driven wells for water, oil, or gas.

The objects of my invention are, first, to provide a device over which may be slipped, while it is in operation, pipe threading and cutting tools or pipe fittings, such as couplings, T's, crosses, &c.; second, to provide means for relieving the force upon the device due to the internal pressure of the water, oil, or gas within the pipe while the device is being put into operation; third, to afford facilities either for shutting off the natural flow of water, gas, or oil or for conveying such fluids and gases to any convenient point after the device is fixed in its proper position without interfering with the operations mentioned in the first place; fourth, the construction of such a pipe-stopping device as will be capable of withstanding the great pressures found in flowing water, oil, or gas wells, and which device may be readily removed and used separately for similar purposes. I attain these results by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the pipe or well, showing my device inside it, but not in operation. Fig. 2 is a section of the same pipe, showing my invention expanded and ready for use. Figs. 3 and 4 are sectional views on a larger scale, showing the working parts of the device in detail, Fig. 3 showing the device in its normal condition, as also shown in Fig. 1, and Fig. 4 showing it expanded and in working operation, as in Fig. 2.

Similar letters refer to similar parts throughout the several views.

M is a section of an Artesian or driven well, usually made of wrought-iron pipe, in which it is desired to stop the flow of water, gas, or oil, so that the pipe M may be cut off, threaded,

or fittings, such as couplings, T's, crosses, &c., affixed to it at any point between its upper end and the point where the device is fixed without interference from the flow of water, oil, or gas.

A is the exterior tube of the device, to which is tightly attached at its upper end the collar C. At the lower end of the exterior tube A is fixed the collar D. To the interior of the collar D is brazed or otherwise suitably affixed the sleeve L, preferably made of a piece of brass tube longitudinally split at regular distances apart from the bottom to its junction with the collar D. The longitudinal splitting is to allow for its lateral expansion. Then split sleeve L is exteriorly surrounded by an elastic sleeve E, preferably made of india-rubber, which is held in place by the collar D at its upper end and by the outwardly-turned ends of the sleeve L at its lower end.

B is the interior tube of my device open at both ends, fitting loosely within the exterior tube A. It has fitted to its upper end the stop-cock F and to its lower end the cone K. The upper portion of the interior tube B is exteriorly threaded to fit the revoluble female-threaded sleeve-nut G. Between the sleeve-nut G and the collar C is interposed the loosely-fitting washer H.

I is a conical cap divided longitudinally in two parts to slip into the top of the well M and around the exterior tube A to keep the tube A in place and in a central position within the well M. Fig. 1 shows a section of the well M with the device almost lowered into position. Fig. 3 shows the working parts on a large scale and is entirely in section, showing my invention lowered into position, but not in operation. It will be seen that the sleeve-nut G is at the upper end of the exterior thread on the interior tube B, while the cone K is considerably below and does not enter the lower end of the split sleeve L, while the stop-cock F being open the gas, water, or other fluid may escape, as shown by the upwardly-pointing arrows in Fig. 3. Figs. 2 and 4 show the elastic sleeve E expanded and the stop-cock F turned so as to prevent the escape of gas, water, or oil from the well M.

The operation of my device is as follows: After inserting the parts K E D and a portion

of the exterior tube A into the well M the split cap I is placed in position in the top of well M and the device lowered until the collar C rests upon the split cap I. Then the sleeve-nut G is rotated either by hand or with a wrench, and bearing upon the washer h and collar C, gradually raises the internal tube B, carrying with it in an upward direction the cone K, which enters and expands the split sleeve L and the elastic sleeve E until the elastic sleeve E is forced tightly against the interior surface of the well M, thus effectually stopping the egress of water, air, or gas from the well M, except through the interior tube B, which in turn may be closed by the stop-cock F. Upon rotating the sleeve-nut G in the opposite direction, the cone K is withdrawn from the split sleeve L and the elastic sleeve E, which then assume their normal position and shape.

By inspection it will be seen that all parts of the device are less in diameter than the well M, thus allowing the well M to be cut off or threaded at any point above the elastic sleeve E, while fittings, such as couplings, T's, crosses, &c., may also be applied to the well M. It will also be seen from the relative position of the cone K and the elastic sleeve E that the internal pressure in the well M tends to force the cone K upwardly, thus making the elastic sleeve E fit more tightly to the interior surface of the well M.

I am aware that prior to my invention soil-pipe stoppers have been made in which a section of rubber tube is longitudinally compressed, in order to test the tightness of the joints in the pipe, and also that wooden stoppers have been used into which a conical plug is driven from the top, in order to expand said wooden stopper. I therefore do not claim such a combination broadly.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a pipe or tube stopper of the pipes "A" and "B" with the stop-cock "F," the sleeve nut "G," the split cap "I," the elastic sleeve "E" and the cone "K," all of less diameter than the pipe or tube to be stopped—substantially as set forth.

2. In a pipe or tube stopper the combination of a pipe "A" with the collar "C," the collar "D" and the split sleeve "L," substantially as described.

3. The combination in a tube or pipe stopper of a conical plug "I" with the longitudinally split sleeve "L" and the elastic sleeve "E," all substantially as set forth.

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

JOHN P. SUVERKROP.

Witnesses:

CHAS. KIRKPATRICK,
A. M. PEASLEE.