S. Swartz,

Well Packing.

No. 48,599. Patented July 4, 1865.

Fig. 1.

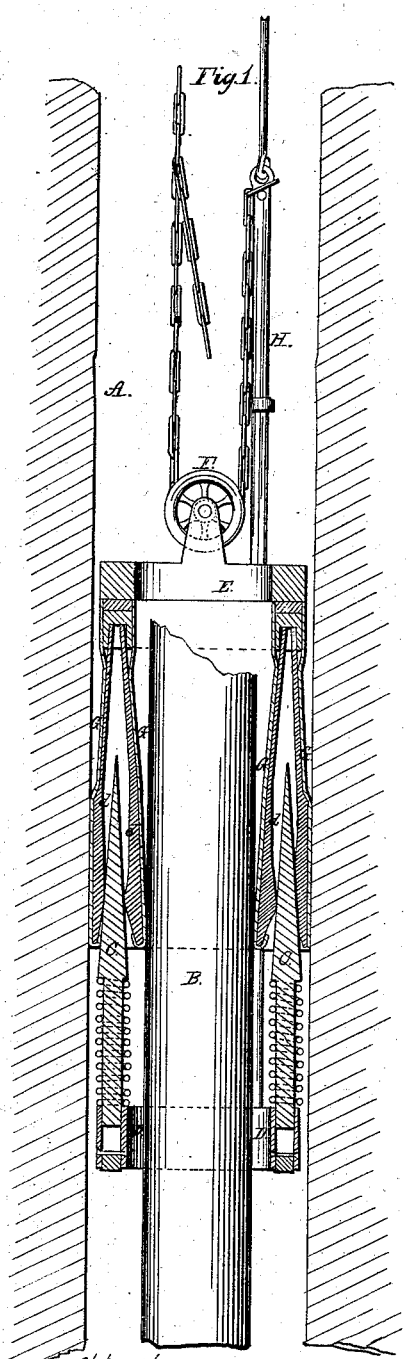


Fig. 2.

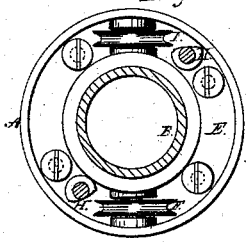
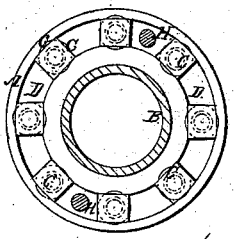


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

SAMUEL SWARTZ, OF BUFFALO, NEW YORK.

IMPROVED PACKING FOR ARTESIAN WELLS.

Specification forming part of Letters Patent No. **48,599**, dated July 4, 1865.

To all whom it may concern:

Be it known that I, SAMUEL SWARTZ, of the city of Buffalo, county of Erie, and State of New York, have invented new and useful Improvements in Packing for Artesian Oil-Wells; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing a packing for Artesian oil-wells for the purpose of preventing the water from the surface entering the oil-chamber below and mingling with the oil below. Heretofore great difficulty has been encountered from this cause, and the common method employed to prevent the surface-water from entering the well has been to use a bag filled with flaxseed. This is placed around the eduction-pipe and lowered to as near the point as may be, and after it has absorbed a quantity of moisture it expands and packs the annular space between the eduction-pipe and the bore of the well. But the difficulty experienced by this method is in removing the packing, which is attended with great risk of drawing the pipes apart, leaving the lower portion in the well, and loss of time. By my invention I am able to obviate and overcome all this difficulty.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In my improved packing device Figure I is a sectional elevation of a well with the packing introduced. Fig. II is a top-plan view of my packing device, showing the pulleys over which the chains pass and by which it is operated. Fig. III is a transverse section of the same. Fig. IV is a plan view of the lower ring and wedges.

In Fig. I, A represents the bore of the well, and B the eduction-pipe.

C C represent wedges secured to a grooved ring, D, Fig. IV, and to which are secured spiral springs *c*, as seen in Fig. I.

d d are springs secured to another ring, E, similar to the one before described, and to which is secured the pulleys F, over which the operating chain or rope passes to the top or surface of the well. The ring E and springs *d* are covered with any elastic material, as seen at G, Figs. I and IV.

It is evident that by letting a column of water on the upper ring it will be pressed down, by which means the wedges are forced between the elastic springs *d d*, causing them to expand and completely pack the annular space between the eduction-pipe and bore of the well, and by raising on the chains by any mechanical means the upper ring is raised, thus withdrawing the wedges and slacking the packing, when it may be quickly moved to a different point, or removed from the well.

It will be seen that by means of the spiral springs secured to the wedges a greater expansion may be obtained, if necessary, upon one side of the eduction-pipe than on the other, thus accommodating itself to the sinuosities of the bore of the well, if any should exist.

H is a rod that connects with and suspends the lower ring, so that when great pressure is necessary, by raising one end of the chain has a tendency to draw the rings and cause them to approach each other, and thus causing the wedges to expand the packing.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The spring-packing and wedges, when constructed and arranged substantially as herein set forth.

2. The wedges, in combination with the spiral springs and lower ring, for the purposes set forth.

3. The chain or its equivalent connected with the rod and pulley, as arranged, with adjustable packing, substantially as shown and described.

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