

J. H. LUTHER.

Well-Packing.

No. 134,995.

Patented Jan. 21, 1873.

Fig. 1.

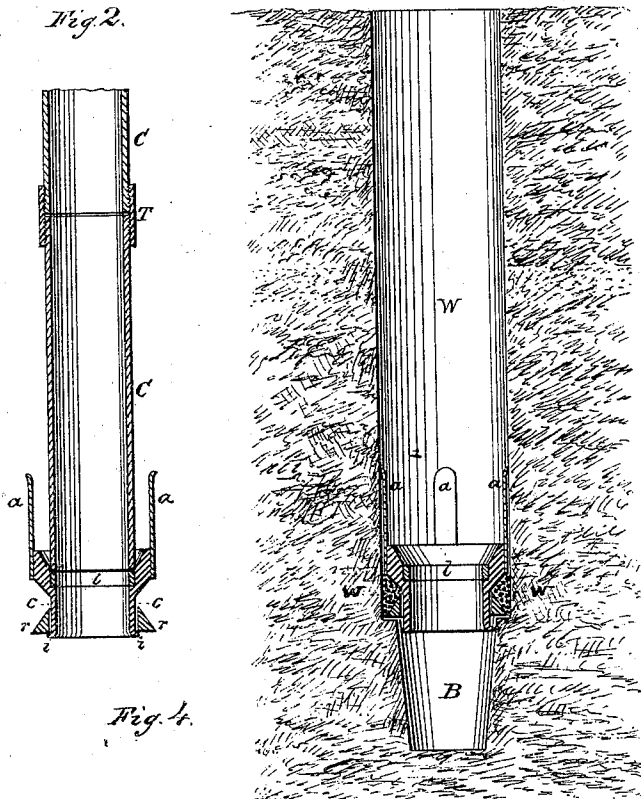


Fig. 2.

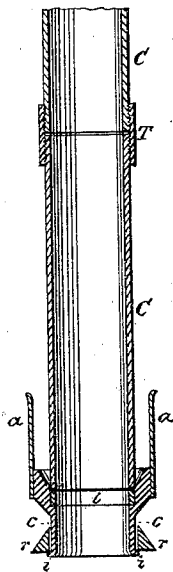


Fig. 4.

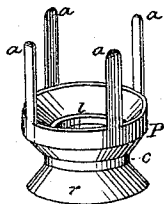


Fig. 3.

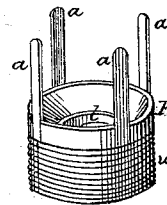
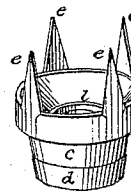


Fig. 5.



Witnesses.

J. W. Howard

H. P. Dea

Inventor.

James H. Luther

By his Attorney

Chas. F. Mansbury

UNITED STATES PATENT OFFICE.

JAMES H. LUTHER, OF PETROLEUM CENTRE, PENNSYLVANIA.

IMPROVEMENT IN WELL-PACKINGS.

Specification forming part of Letters Patent No. 134,995, dated January 21, 1873.

To all whom it may concern:

Be it known that I, JAMES H. LUTHER, of Petroleum Centre, in the county of Venango and State of Pennsylvania, have invented a new and useful Water-Packer for Oil-Well; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a vertical section of that part of an oil-well in which the casing is to be inserted, my water-packer being shown in place ready for the reception of the casing. Fig. 2 is a vertical central section of my water-packer with the well-casing in place upon it. Fig. 3 is a perspective view of my water-packer complete, with the packing in place. Fig. 4 is a similar view of the same without the packing. Fig. 5 is a perspective view of a modified form of the packer, which I contemplate using in some cases.

In the first four figures the same part is marked by the same letter of reference wherever it occurs. In Fig. 5 the lettering is independent.

My invention consists in the peculiar construction hereinafter described of a water-packer to be used at the bottom of the casing-tube of oil-wells as a substitute for the seed-bag and other water-packers now in use.

In the drawing, W marks that portion of an oil-well which receives the bottom of the casing-tube. It has a shoulder at its lower end, where it narrows for the reception of the lower portion of the tubing, or that which is not surrounded by the casing. It is at this point where it becomes necessary to provide means for keeping the water which may percolate through the adjoining soil from entering the casing and getting into the lower part of the well. My water-packer effectually accomplishes this object.

The form of the packer is very clearly shown in the drawing. Its diameter is equal to that of the portion of the well which receives the casing. From the body P of the packer four fingers, *a a a a*, project upward along the walls of the well, their purpose being to receive the lower end of the casing C and guide it to its seat *l*. This seat is a ring of lead, inserted in the body of the packer in the position shown. The lower portion *c* of the

body of the packer is cylindrical, and receives the beveled ring *r*, which is held on by a rim, *i*, at the bottom of the cylindrical part *c*. The ring *r* has free play on *c*. The space between the body P of the packer and the ring *r* is to be wound with cotton-wicking *w* or other suitable packing of a compressible character. The appearance of the packer when thus wound is shown in Fig. 3. It is now lowered into the well W until it reaches the shoulder at that part of the well where the lower end of the casing is to rest. The bottom of ring *r* rests upon this shoulder, as shown in Fig. 1. The casing C is next introduced, and when its lower end reaches the arms *a a a a* they receive and guide it till it rests upon the leaden ring *r*, as shown in Fig. 2. The great weight of the casing causes the lower end to embed itself in the lead and form a water-tight joint. The weight of the casing tends to force the body P of the packer through the ring *r*, and thus drive the packing *w* into close contact with the walls of the well, effectually preventing any water which may accumulate between the well walls and the casing from getting into or below the latter.

This method of packing has the great advantage of offering no obstacle to the ready removal of the casing when desired.

In Fig. 5 I have represented a modification of the invention, in which, for the elastic packing *w*, I substitute a ring of lead, *d*, on the lower end of the body *c* of the packer, which I make conical in form to enter a cavity of corresponding shape in the lower part of W.

In other respects this packer does not differ from those shown in the other figures. The compression of the lead *d* against the conical cavity answers the same purpose as the forcing of the elastic packing against the sides of the well.

Leather or soft metal might be substituted for lead in making the ring *r*, upon which the casing rests.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of the body P of the packer with the movable ring *r* and the elastic packing *w*, arranged and operating as described.

2. The compressible ring *l*, inserted in the

top of the packer to form a water-tight seat for the lower end of the casing, as described.

3. The combination with the packer P of the arms *a a a*, for the purpose of guiding the lower end of the casing to its seat, as specified.

The above specification of my said inven-

tion signed and witnessed at Petroleum Centre this 5th day of December, A. D. 1872.

J. H. LUTHER.

Witnesses:

DANIL JONES,

CHAS. F. STANSBURY.