No. 867,735. PATENTED OCT. 8, 1907.

W. W. LEWIN.

WELL PACKER.

APPLICATION FILED APR. 1, 1907.

Fig. 1.

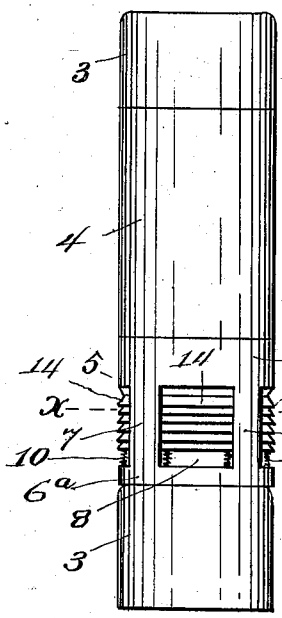


Fig. 2.

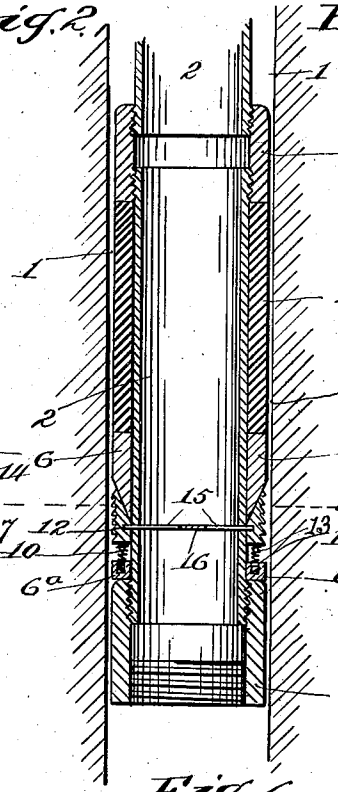


Fig. 3.

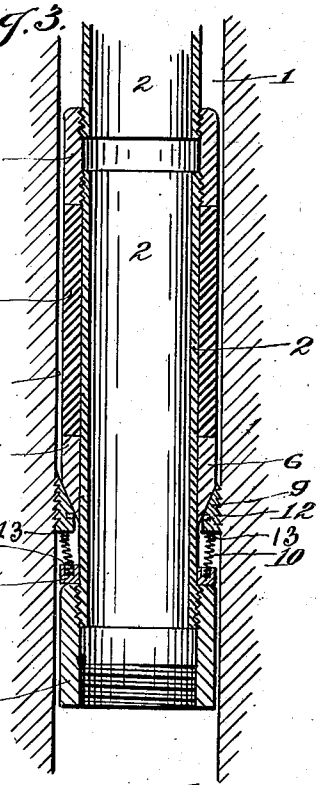


Fig. 4.

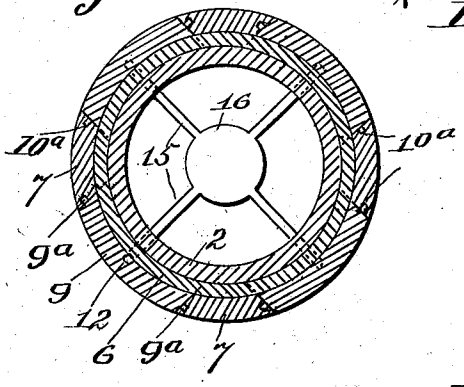


Fig. 6

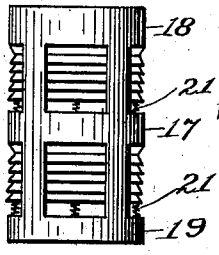


Fig. 7

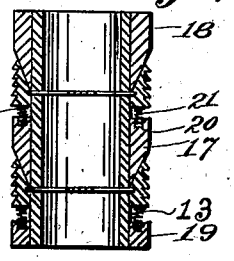
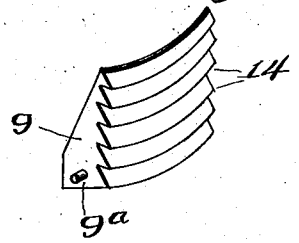


Fig. 5.



Witnesses:
C. J. Belk
Wm. E. Valk Jr.

Inventor.
Walter W. Lewin
By
Faber & Whitman & Co
Attorneys

UNITED STATES PATENT OFFICE.

WALTER W. LEWIN, OF PARKERSBURG, WEST VIRGINIA.

WELL-PACKER.

No. 867,735. Specification of Letters Patent. Patented Oct. 8, 1907.

Application filed April 1, 1907. Serial No. 365,723.

To all whom it may concern:

Be it known that I, WALTER W. LEWIN, a citizen of the United States, residing at Parkersburg, in the county of Wood and State of West Virginia, have invented certain new and useful Improvements in Well-Packers, of which the following is a specification.

This invention relates to well-tubing and packing, and especially to the class of such tubing and packing as are employed for packing well walls, and as are distinguished from well-bottom packers.

The object of the invention is to provide an improved apparatus of novel and peculiar construction and arrangement of parts for packing well-walls after the running of well-casing into the well.

A further object of the invention is to provide a well-wall packer capable of such operation as to be removed from a well together with the casing without leaving any part of the casing and the packer in the well.

A still further object of the invention is to provide in a well-packer, a series of serrated or toothed slides or segments independent of each other and movable vertically by spring pressure under them.

A still further object of the invention is to provide in a well-packer curved slides or segments each of which is adapted to slide vertically and thereby position itself against the wall of the well independently, without regard to the centralness of the packer or the well-casing with respect to the well.

Various other objects, advantages and improved results are attainable in and by the construction and arrangement of parts, hereinafter particularly described and pointed out in the claims.

In the accompanying drawings forming part of this application:—Figure 1 is an elevation of the well packer applied. Fig. 2 is a central vertical section showing the application of the packer to a well and well-casing. Fig. 3 is a similar view showing the position of the parts for packing. Fig. 4 is a cross section taken on the plane indicated by the dotted lines *x*—*x*, Figs. 1 and 2. Fig. 5 is a detail perspective view of one of the toothed segments. Fig. 6 is an elevation of a modification. Fig. 7 is a vertical section of the modification.

The same reference numerals denote the same parts throughout the several views of the drawings.

The well-bore 1 may be of such depth as desired, and of the usual size for ordinary casings 2, casing couplings 3, and packing 4.

The packer consists of a slip-collar 5, composed of two rings 6 and 6ª, connected together by vertical sections 7 integral with the rings and forming spaces 8; a series of segments 9, and a series of spiral springs 10, one or more for each segment. The ring 6, has its bottom beveled from its outer to its inner face to form a pointed bottom edge. The ring 6ª has a series of holes 11, in each of which one of the springs 10 is seated. The segments 9 being of the same shape and construction only one of them will be described in detail; it has a beveled inner face provided with a cavity or notch 12, the purpose of which will be hereinafter described; spring seats 13, and a series of serrations or teeth 14 formed on its outer face to engage the wall of the well when released from breakable-bars 15, fitting the notches 12, and having a central disk 16. The sides of the segments 9, have pins 9ª working in slots 10ª, of the sections 7, and such segment-sides are beveled to correspond with the beveled sides of the joining sections 7 of the rings 6 and 6ª.

Referring to the modification shown in Figs. 6 and 7 a double packer is formed by duplicating the several parts, and interposing a ring 17 between the rings 18 and 19. The ring 17 has a beveled outer face, and seats 20 for springs 21.

It will be seen that the packer is carried by the casing and rests on one of the casing-couplings, with the packing resting on the top ring of the packer and under another casing-coupling, the segments being held down by the weight of the casing and against vertical movement by the breakable-bar, and when the packing reaches a desired depth, the said bar is broken, which releases the segments, and under pressure of the springs the segments are forced upwardly and outwardly into engagement with the well-wall, and hold the packing in such desired place to receive such force or pressure from the top as to expand it and fill the space between the casing and the well-wall.

It will be observed that the action of the segments are independent of each other, and they are free to slide under pressure of the springs when released by the breakable-bar without moving any part or parts of the packer; and that two or more packers may be placed in a well on one string of casing at the same time, so that there may be a casing section or sections below and above the packer.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A well packer comprising a pair of joined rings, independent segments slidably held between the rings, and means for sliding the sections upwardly and outwardly from the rings.

2. A well packer comprising rings joined together one above the other and having spaces between them, independent segments slidable upwardly and outwardly through said spaces, means for holding the segments against sliding, and means for sliding the segments.

3. A well-packer comprising rings joined together so as

to leave spaces between them, independent segments slidable from one of said rings against the other ring and through said spaces, a breakable-bar for holding the segments, and spiral springs for sliding the segments.

4. A well-packer comprising a series of rings joined together vertically so as to leave spaces between the rings, certain of the rings having spring-seats and a beveled face, a series of segments slidable in said spaces independently one of the other, and a series of springs for sliding the segments.

5. In a well-packer, the combination, with the packer-rings, and the sections connecting the rings and having slots therein, of the toothed segments working between the rings and having-pins which engage the said slots.

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

WALTER W. LEWIN.

Witnesses:
JOHN D. HADDOX,
J. B. HICKMAN.