

June 16, 1931.

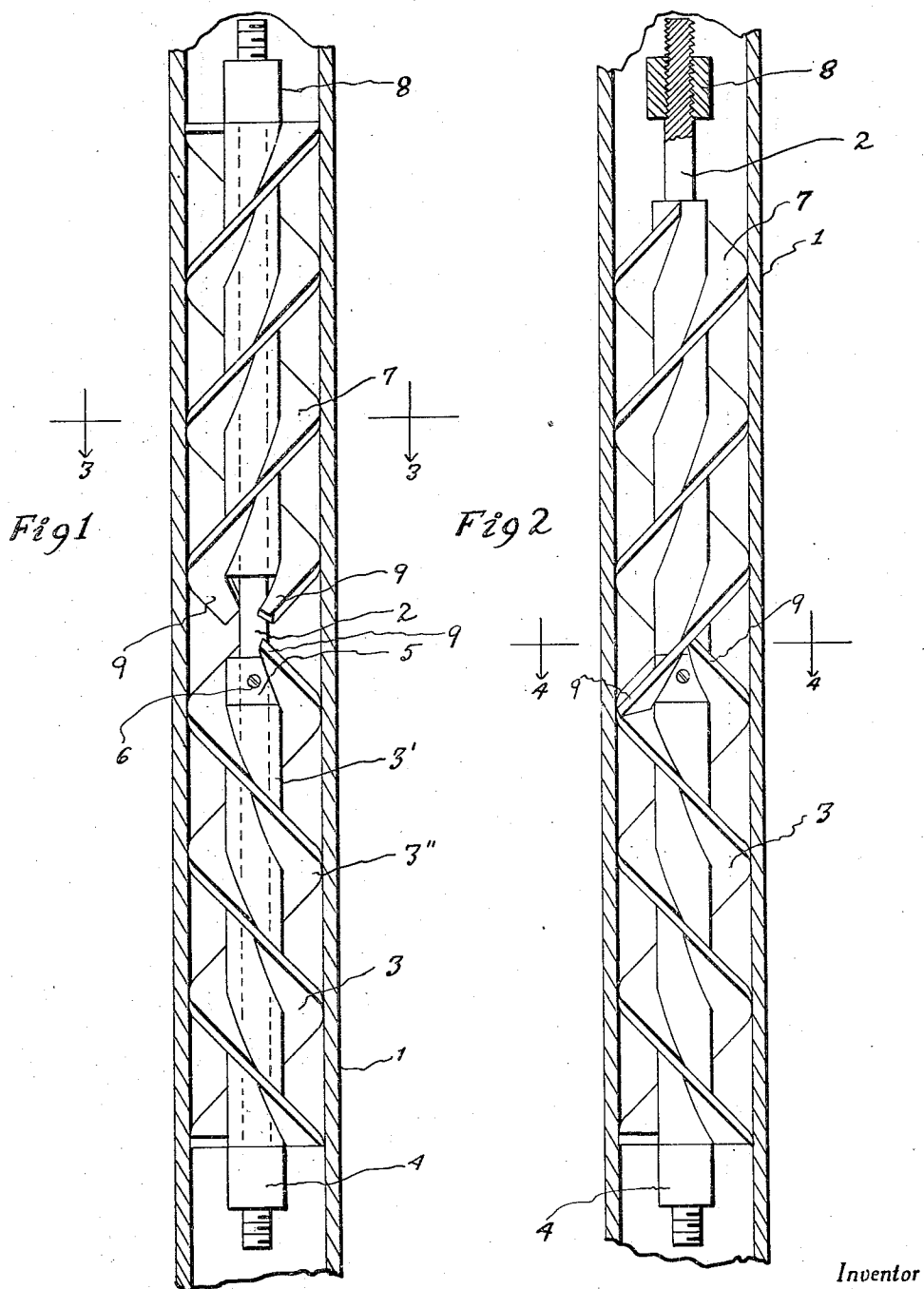
L. SWINFORD

1,810,260

WELL TUBE CLEANER

Filed Jan. 15, 1931

2 Sheets-Sheet 1



Inventor

Levi Swinford

By *Clarence A. O'Brien*
Attorney

June 16, 1931.

L. SWINFORD

1,810,260

WELL TUBE CLEANER

Filed Jan. 15, 1931

2 Sheets-Sheet 2

Fig 3

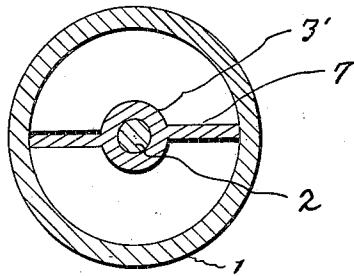


Fig 5

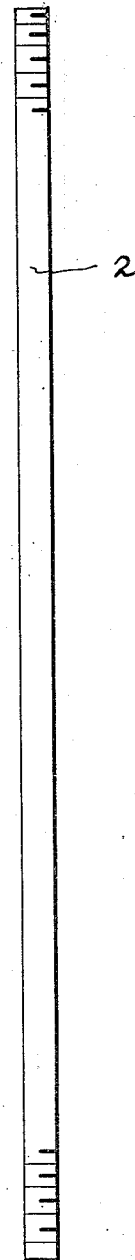


Fig 4

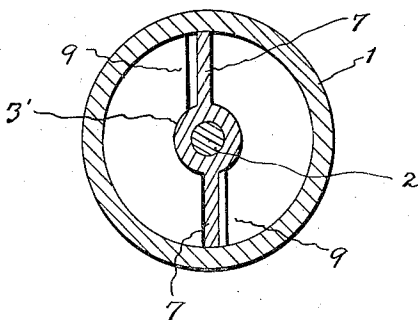


Fig 6

Levi Swinford ^{Inventor}

By *Clarence A. O'Brien* ^{Attorney}

UNITED STATES PATENT OFFICE

LEVI SWINFORD, OF COMANCHE, OKLAHOMA

WELL TUBE CLEANER

Application filed January 15, 1931. Serial No. 509,021.

This invention relates to a device for cleaning paraffin and the like from well tubes, the general object of the invention being to provide means including a pair of rotary spirals, one of which is right and the other left so that when the device is forced into a well the spirals will rotate in opposite directions, with means for causing the adjacent ends of the spirals to close the passage formed by their convolutions, when the device is being pulled from the well, thus preventing the paraffin from passing from the device.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a fragmentary sectional view through a well tubing and showing the device in elevation with the two spirals separated.

Figure 2 is a similar view showing the spirals connected together and being pulled from the tube.

Figure 3 is a section on line 3—3 of Figure 1.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a view of the rod on which the spirals are placed.

Figure 6 is a view of the retaining collar.

In these drawings, the numeral 1 designates a part of the well casing and the numeral 2 designates a rod having each end threaded. A spiral 3 comprising a tubular part 3' and the spiral fins 3'' is rotatably arranged on the lower part of the rod with the lower end thereof resting against the threaded sleeve 4 which is internally threaded to engage the lower threaded end of the rod and a collar 5 is fastened to the rod by a set screw 6, said collar bearing against the upper end of the spiral to hold it against longitudinal movement on the rod. A second spiral 7 has

its tubular part rotatably arranged on the upper part of the rod and this spiral is limited in its sliding movement on the rod by a collar or sleeve 8 which is also internally threaded and engages the thread on the upper end of the rod. The collar 8 is so placed that the spiral 7 has limited sliding movement on the rod. Each fin of each spiral has an extension 9 thereon which projects beyond the end of the tubular part of the spiral, these extensions being located at the adjacent ends of the spirals as shown in Figures 1 and 2.

The device is lowered into a well tubing by any suitable means connected with the upper end thereof and as soon as the upper spiral 7 engages the paraffin on the walls of the tubing it will move upwardly until its upper end abuts the collar 8. As the device is pushed through the paraffin, the spirals will rotate and as the spirals are left and right they will rotate in opposite directions. The edges of the fins will remove the paraffin from the walls of the tubing. When the device is being pulled from the tubing the upper spiral 7 will remain stationary as the rod 2 is moving upwardly until the lower end of the spiral 7 engages the collar 5 and this movement will cause the extensions 9 to overlap as in Figure 2 so that the extensions form a seat or closure to prevent any paraffin from passing through the device as it is being pulled from the well.

This tubing cleaner can be left in the well on sucker rods above working barrel to a great advantage as only one pulling of the sucker rods leaves the tubing clean and ready for the device to go back down in the tubing again on sucker rods and the device will not interfere with the pumping operation.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

Having thus described my invention, what I claim as new is:

1. A well tube cleaning device comprising a rod, right and left spirals rotatably arranged on the rod, means whereby the upper spiral has limited sliding movement on the rod and extensions of the spiral fins at the adjacent ends of the spirals which overlap each other when the upper spiral moves downwardly on the pulling of the device from the tubing for preventing the paraffin passing through the device.

2. A device of the class described comprising a rod, a pair of spirals rotatably arranged thereon, means for holding the lower spiral against longitudinal movement, means for permitting sliding movement of the upper spiral, an extension on the lower end of the spiral fin of the upper spiral and an extension on the upper end of the spiral fin of the lower spiral, such extensions overlapping each other when the device is pulled from the well and the upper spiral moves downwardly on the rod.

In testimony whereof I affix my signature.

LEVI SWINFORD.