W. S. AVERY.

PINCHCOCK.

APPLICATION FILED OCT. 18, 1920.

1,397,481. Patented Nov. 15, 1921.

Fig. 1.

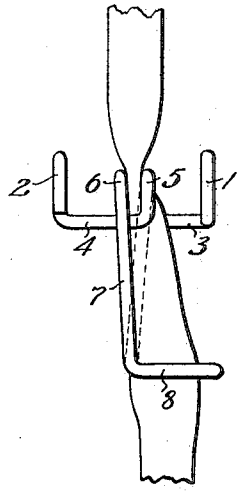


Fig. 2.

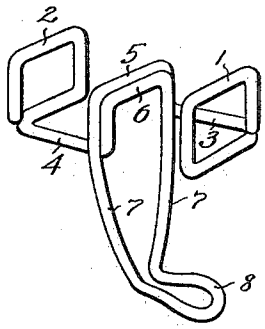


Fig. 3.

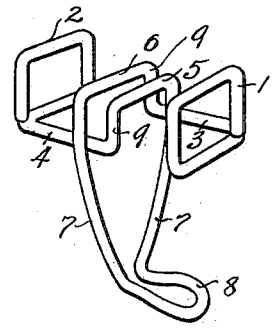
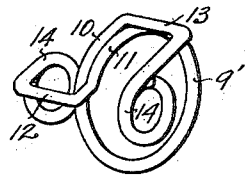


Fig. 4.



WITNESSES

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PINCHCOCK.

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To all whom it may concern:

Be it known that I, WALTER S. AVERY, a citizen of the United States, and a resident of Knoxville, in the county of Knox and State of Tennessee, have invented a new and Improved Pinchcock, of which the following is a full, clear, and exact description.

This invention relates to improvements in pinchcocks, an object of the invention being to provide a device of this type which is formed of a single piece of spring wire bent upon itself and which may be conveniently manipulated to control the flow of liquid through a piece of tubing.

A further object is to provide a pinchcock which will tend to effectively close a tube and prevent leakage, and one which may be readily applied thereto.

A still further object is to provide a pinchcock or tube clamp which will be strong and durable in use, simple and practical in construction and comparatively cheap to manufacture.

With these and other objects in view the invention consists in certain novel features of construction, and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a view in front elevation illustrating my improved pinchcock in use with a piece of tubing.

Fig. 2 is a perspective view of the same illustrating the jaws in closed position.

Fig. 3 is a view similar to Fig. 2, showing the jaws in partially opened position.

Fig. 4 is a perspective view illustrating a modification.

Referring in detail to Figs. 1, 2 and 3 of the drawings, my improved pinchcock is preferably formed of a single piece of spring wire bent upon itself.

The intermediate portion of the wire is bent to form a tube-receiving loop 8 of such size as to partially compress the tubing and hold the device in place thereon. The ends of the wire are then bent at right angles to the plane of the loop and extend in the same parallel plane but in slightly diverging paths, forming a pair of spring arms 7, 7.

The ends of the wire are then bent in opposite directions at right angles to the plane of the spring arms forming a pair of coacting pinching jaws 5 and 6, respectively. The ends of the wire are then bent at right angles and extend for a short distance in the direction of the loop as shown at 9. The ends of the wire are again bent at right angles and extend outwardly in opposite directions, in parallel planes but at right angles to the jaws, forming a pair of rigid jaw-operating arms 3 and 4, respectively, the arm 4 passing under the jaw 5. The ends of the wire are then bent forming substantially rectangular handle members 1 and 2, respectively, located in paralellism and alinement with each other and with the jaws 5 and 6 and positioned transversely of the plane of the loop 8.

In the modification illustrated in Fig. 4, I employ a single piece of wire bent upon itself to give the desired construction. The intermediate portion of the wire is bent to form a circular spring 9′. The ends of the spring overlap forming coacting pinching jaws 10 and 11. The ends of the wire are then bent in opposite directions at right angles to the plane of the spring and form a pair of rigid jaw-operating arms 12 and 13, respectively. The arm 13 crosses over the jaw 11 and the arm 12 cross the jaw 12. The ends of the wire are again bent at right angles and in opposite directions and terminate in substantially circular handle members 14 located in alinement and in parallelism with the spring 9′.

The operation of both forms of device will be readily understood. With the preferred form the handles are moved together to open the jaws and allow the tubing to be pressed between the same. The tubing is then compressed and forced sidewise into the loop 8.

The natural tendency of the jaws is to prevent any flow of liquid through the tube, and to permit a flow, it is necessary to squeeze the handles 1 and 2 together, allowing the desired amount of fluid to pass through the tube. Upon releasing the handles, the spring loop 7 will automatically force the jaws together to close the tube.

The operation of the modified form is substantially the same. The tube is passed through the circular spring 9′ and between the jaws 10 and 11. The jaws prevent any flow of fluid through the tube, but by squeezing the handles 14 toward each other a flow may be had.

While the pinchcock is designed primarily for laboratory use, it will be ap-

parent that it might also be employed to regulate the flow of water through a garden hose or similar fluid-dispensing flexible tube.

Various other slight changes might be made in the general form and arrangement of the parts described without departing from the invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. A pinchcock comprising a single piece of wire bent upon itself to form a pair of parallel jaws, a spring holding the jaws together and terminating in a rigid tube-receiving portion positioned transversely thereof, and a pair of handles in parallelism with the spring and jaws and in alinement with the jaws, said spring and jaws so arranged that a movement of the handles toward one another serves to separate the jaws.

2. A pinchcock comprising a single piece of wire bent at its intermediate portion to form a loop and having the ends of the wire bent at right angles to the plane of the loop forming a pair of spring arms, and then bent at right angles to the spring arms and in opposite directions forming a pair of parallel coacting pinching jaws, then bent to form jaw-operating arms and handles, said handles being in parallelism and alinement with each other and with the jaws.

WALTER SANFORD AVERY.