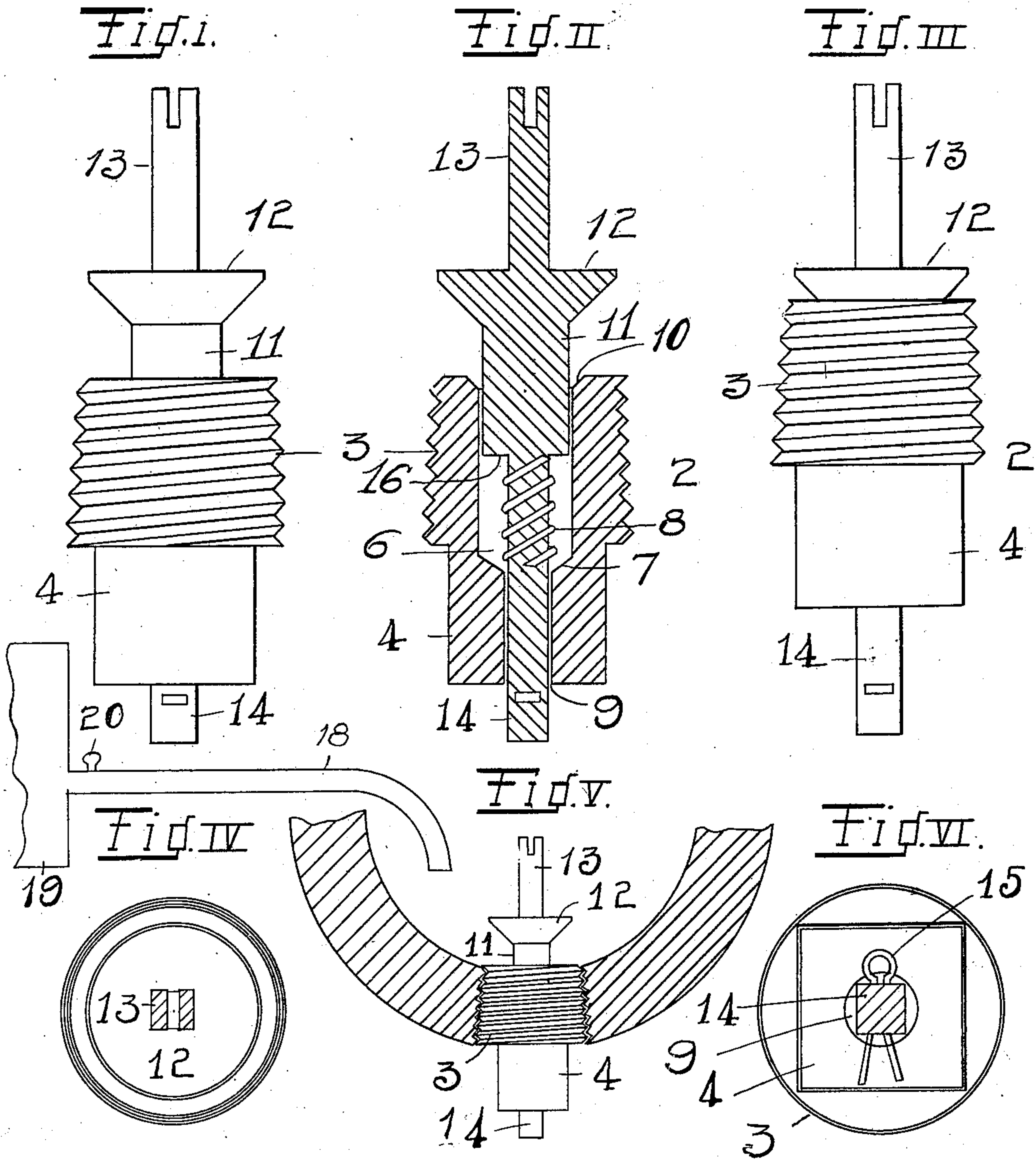


S. L. ERICKSON.  
 DRIPPING VALVE.  
 APPLICATION FILED APR. 30, 1909.

946,914.

Patented Jan. 18, 1910.



WITNESSES:

*Herbert S. Miller*  
*Fred Lindgren*

INVENTOR:

*S. L. Erickson,*  
*By H. M. Richards,*  
*His Atty.*



# UNITED STATES PATENT OFFICE.

SWAN L. ERICKSON, OF GALESBURG, ILLINOIS.

## DRIPPING-VALVE.

446,914.

Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed April 30, 1909. Serial No. 493,194.

*To all whom it may concern:*

Be it known that I, SWAN L. ERICKSON, a citizen of the United States, and a resident of Galesburg, in the county of Knox and State of Illinois, have invented a new and useful Dripping-Valve, of which the following is a specification.

My invention relates to valves of that particular type or class known as dripping-valves.

The primary object of the invention is to provide a valve which is automatically closed by either liquid or fluid pressure, and which is automatically opened when the pressure is removed, to permit the flow of water from a pipe, main valve, drip-cup, radiator or other means with which it is connected. It is especially intended, however, for use in connection with air-brake appliances.

The train-pipe in railway rolling stock equipped with air-brakes extends throughout the length of each car, and a coupling and angle-cock are as a rule provided to connect each end of each section of train-pipe with that of the cars to which it is coupled, whereby air communication is established. Each car is equipped also, as a rule, with what is known as a "triple valve"—a valve which charges the auxiliary air reservoir and sets and releases the brake, it (the triple valve) being connected also to the cross-over pipe which leads to the air cylinder. My improvements are readily attachable to the drip-cup (or water-cup) of any such valve, and the device may be threaded into the opening therein in which a plug has heretofore been inserted, and which plug was necessarily removed in order to permit the water to drip from the cup—an operation which was tedious, dangerous and very frequently forgotten or neglected. On locomotives the act of pumping air into the main air-reservoir invariably causes a quantity of water to be drawn or forced thereinto, and as the compressed air rushes therefrom into the train-pipe a portion of the water is carried along thereby to lodge in the aforesaid drip-cups. The yards of railways and other manufacturing and repair establishments are frequently equipped with elaborate systems of air-pipes, generally exposed, and in each depression thereof water accumulates in the manner and because of the facts hereinbefore stated. Gas-pipes are frequently disabled by this water accumulation. Any such pipe or pipes may be fitted with a T at each

depression, and my device fitted into the depending element thereof. It may be attached to steam and other heat radiators for buildings. In fact it is applicable to and effective with any pipe, valve or other device or means which is subjected to either fluid or liquid pressure and in which water is apt to accumulate to the detriment thereof.

The advantages of the invention arise mainly from the fact that it prevents accumulated water from freezing and bursting or rendering inoperative the valve, pipe or other means to which it is applied; from the fact that the operation of the means to which it is attached is better and said means therefore more effective; and that because it is automatic in its action it requires no attention and is therefore economic in use. On railway trains, in the event of the accumulated water in any part of an air-brake car freezing and bursting its container, that car must be either set out from the train or switched onto the rear end thereof. All danger of this difficulty arising is eliminated by the employment of my device.

The invention consists in novel features of construction and novel combinations of parts and devices hereinafter described and claimed.

Mechanism embodying the preferred structural peculiarities of the several parts forming the subject matter of my improvement, and the arrangement and disposition thereof, is illustrated in the accompanying drawing, in which:—

Figure 1 is an elevation of my improved valve in its open position; Fig. 2, a vertical, central section, the spring in elevation, and the parts in the same relative positions as at Fig. 1; Fig. 3, an elevation, the parts in closed position; Fig. 4, a top plan; Fig. 5, a vertical, central section of a fragment of a drip-cup with my improvements applied thereto, the latter being shown in elevation; and Fig. 6, a bottom plan.

The same reference character wherever herein used refers to the same part in the different figures of the drawing.

2 indicates a valve body comprising a tapered or frusto-conical threaded upper portion 3 and an angular lower portion 4 adapted for actuation by a wrench whereby the portion 3 may be caused to engage the threads of a drip-cup 5 or any other similar means intended for any of the purposes hereinbefore recited. The valve body is



provided with an enlarged axial bore or port 6, a seat 7 for a spring 8, and a constricted, cylindrical axial bore 9. The port opening is flared outwardly to provide a valve-seat 10.

The plunger or piston comprises a cylindrical shaft 11 which fits somewhat loosely in the bore 6 and has an integral head 12, the lower face of which is beveled and machined to conform in contour with, and to snugly fit the valve-seat 10, a transversely grooved extension 13 projecting upwardly therefrom. A preferably square stem 14 is pendent from the shaft 11 and fits within the cylindrical opening 9. At its lower portion it is provided with a transverse slot for a cotter 15. If water should accumulate and freeze around the stem, or even in the cup, the application of a screw-driver to said extension 13 to turn it back and forth will break the ice and permit the water to flow.

At Fig. 5, I have shown a pipe 18 leading from an air reservoir 19 to the drip-cup 5.

In operation, let it be supposed that the parts are in the relative positions shown at Figs. 1, 2 and 5, the cup 5 to be the drip-cup of a triple valve in communication with the source of fluid-pressure supply, as the air-reservoir 19. Upon the cock 20 being turned to permit the compressed air to rush with great force into the valve and thereby the cup, it will act to force the substantially V-shaped valve-disk or closure down to rest partly within the correspondingly shaped opening and on its seat 10, to hermetically seal said opening against the escape of air. An ordinary gasket, not shown, may be used on said seat if desired. Upon the pressure being removed the spring will expand,

and being seated on its seat 7 and its upper portion resting against the shoulder 16 formed by the lower portion of the shaft 11, will cause said shaft and the parts integral therewith to rise to open the port. The water contained in the drip-cup, seeking its level, will flow freely through the opening 9, the size of which is materially increased by the square stem 14 and cylindrical opening 9.

I claim as my invention:—

In a device of the character described, the combination with a valve-body provided with an axial bore, the upper wall about said bore being flared outwardly to provide a valve-seat, and the lower portion of the bore being tubular and constricted, of a valve-closure comprising, integrally, an angular shaft adapted to fit within the upper portion of said bore, a head adapted to rest in one position on said valve-seat, an extension rising from said head and provided with a transverse groove whereby said closure may be given revoluble movements, an angular stem depending from said head and adapted to be revolved, whereby the angular portions thereof may break up accumulated ice within the bore of the valve-body, and a spring embracing said stem and adapted to hold said valve-closure normally in elevated position to open the valve.

In witness whereof I have hereunto subscribed my name this 24th day of April, 1909, in presence of two subscribing witnesses.

SWAN L. ERICKSON.

Witnesses:

FRED LINDGREN,  
HERBERT L. MILLER.