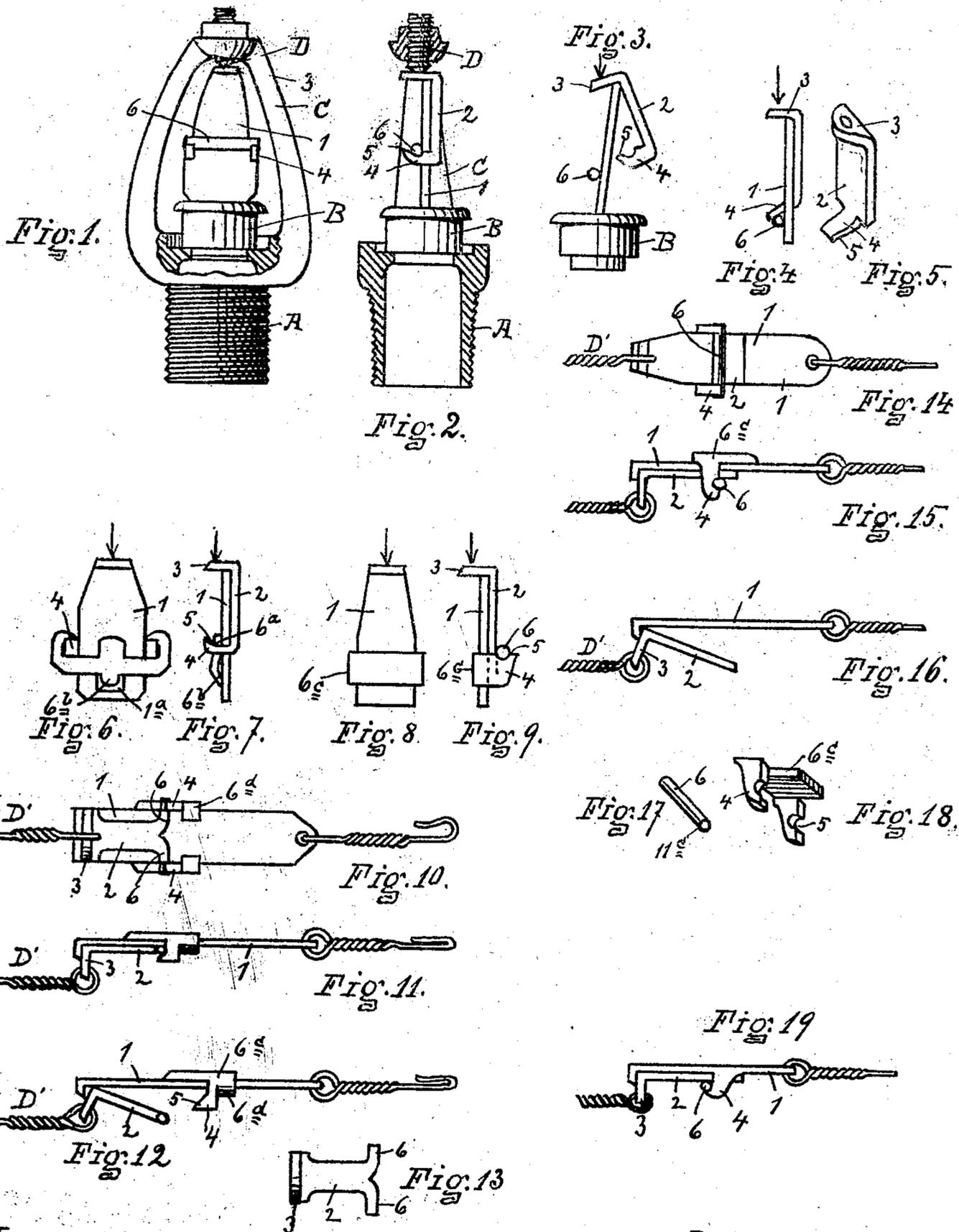


H. W. MARTIN.  
COLLAPSIBLE JOINT.  
APPLICATION FILED FEB. 10, 1905.



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# UNITED STATES PATENT OFFICE.

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## COLLAPSIBLE JOINT.

No. 891,278.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed February 10, 1905. Serial No. 245,073.

To all whom it may concern:

Be it known that I, HERMAN W. MARTIN, a citizen of the United States, residing at Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Collapsible Joints, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to an improved collapsible joint and I do declare that the following is a full, clear, concise and exact description thereof, sufficient to enable one skilled in the art to make and use the same, reference being had to the accompanying drawings in which like letters and numerals refer to like parts throughout.

My invention is shown in the drawings as applicable particularly to an automatic sprinkling device such as is used in factories and the like to check fires, it becoming operative at a certain temperature to release a water plug or valve. It has a multitude of other possible applications not particularly shown or described.

Various modifications of the invention are shown in the drawings in which

Figure 1 is a front view showing a plug or valve and a yoke, with the device therebetween. Fig. 2 is a side view of the same in section. Fig. 3 is a side view of the parts forming the lock in partly broken down position. Fig. 4 is a side view of a modified construction, Fig. 5 being a view of one of its parts. Fig. 6 is a view of a further variety of construction, a side view being shown in Fig. 7. Figs. 8 and 9 are views of a modified form. Figs. 10, 11 and 12 show a different form, one of its parts being shown in Fig. 13. Figs. 14, 15 and 16 are views of a different form of the invention, parts being shown in Figs. 17 and 18. Fig. 19 is a further modification. In Figs. 10 to 19 inclusive the invention is shown with the same essential features but in a construction where the lock is secured against pulling forces, the particulars of the construction being pointed out below.

Referring to the figures in detail A is the water inlet on which is shown an ordinary valve or plug B.

C is a yoke mounted at the inlet and having screw D by which the lock members are

held, when assembled, in proper position to close the valve.

The lock comprises members which are assembled between the screw and the plug, or their equivalents, and are held together by solder, or equivalent means, which will melt, or suitably operate, at a proper degree of heat to release the parts of the lock which will then automatically collapse and permit the valve to open. These members comprise bar 1, integral or otherwise, which extends as here illustrated between the bearing points of the lock and a clip 2, integral or otherwise, which has at one end upset which forms an abutment for the screw or the cord D' as the case may be, the force being applied at a point at one side of the plane of bar 1. The upset bears on the adjacent end of the bar 1.

The main part of the clip lies against bar 1 to which it may be soldered or held as stated, and at the opposite end from the abutment or upset it has a lug or lugs 4, integral or otherwise, which project beyond the face of bar 1. A single lug may be used, Fig. 5, passing through an opening in the bar, or the two may be employed as elsewhere indicated. These lugs have faces 5 which are at an angle to the plane of bar 1 at the point where they project beyond that face or surface of the bar. When the bar and the clip have been thus brought together latch 6 is put in place across the face of bar 1 and against the angular face of lugs 4 where it is soldered or otherwise held suitably to be released when a dangerous degree of heat is reached. The latch may take various forms, some of which are suggested, adapted to perform its office in the device.

The purpose of the invention includes the transference of as much strain as possible from the solder or like means to the members of the lock, as it is found that the former deteriorates and if it bears the entire strain will give way and permit inopportune escape of water. At the same time the device must be such that it will inevitably and instantly collapse and release the plug in case of fire, avoiding any bending or yielding without the complete collapse of the lock. Therefore, make the faces 5 on a slant (although they may be curved within certain limits) so that the lateral pressure under the force applied

to the upset 3 will be borne by the latch 6, to the fullest possible limit, while at the same time, when the solder is melted, the latch will easily and instantly be crowded out of place.

5 For this purpose I may make the latch of a round bar which will have a rolling bearing both on the faces 5 and on the face of bar 1. Or it may take the form of a plate as in other figures having beveled edges 6 (Fig. 7) bearing against the faces 5, or the edges may be curved. The two parts are so constructed and fitted, in short, to sustain the greatest possible lateral pressure, and permit free escape of the latch which requires comparatively little support to hold it to the faces 5. The free and instantaneous collapse of the lock is assured by the limited surface to which the solder is applied. Of course, I do not limit myself to the forms or other particulars shown in the drawings as many modifications can be made without passing from the field of my invention. Some possible changes are shown in the drawings.

25 In Figs. 6 and 7 is shown a latch which has a heel portion 6<sup>b</sup> to be inserted in hole 1<sup>a</sup> in the bar, the heel being bent to engage the upper edge of the hole so that the latch when pressed in place holds the bar 1 and the clip 2 together lengthwise. Any movement of the inclined heel of the latch to release itself will prevent any friction between the latch and the lugs from binding the two and will aid in the escape of the latch and the collapse of the lock, the latch operating substantially as a roller lock.

While the lugs 4 may be integral with clip 2 they need not be, as is seen in Figs. 8, 15 and 18 where they are in a separate clip, as 6<sup>c</sup>, so that the latch may be placed on the opposite side of the lock. The latch may have a greater or less surface contact with the bar 1 to which it is to be soldered and on which it may slide when released. Also the lugs 4 may be integral with the bar 1, Fig. 19.

50 Figs. 10 to 19 show the lock and parts when constructed to resist the pull of opposing forces. The clip and the latch may be integral, being each on one side of the bar (Fig. 10) which is upset at the end to hold the clip. Or the clip and latch may be separate as in Fig. 15. The clip 6<sup>c</sup> (Fig. 12) may have overturns 6<sup>d</sup> to hold it slidably mounted on the bar. In short, the lock which I have illustrated is a device which has certain elements which may be formed, combined, separated and arranged in a variety of styles, cooperating to produce a lock of the necessary strength and firmness, secured by a roller bearing automatically releasable.

60 What I claim as new, and desire to secure by Letters Patent, is:

1. A collapsible joint comprising members disposed between an abutment and a valve,

the said members being held together by a rolling member therebetween, the latter being held in place by a fusible material holding it to each member only at points removed from contact with the other member, substantially as described.

70 2. In a collapsible joint, members disposed to be normally separated by the action of distinct forces, and means for holding the members together, said means comprising a locking member seated between one of the members and an opposite contact surface inclined to said member and connected to the other member, each member being cut away at points opposite to the contact point of the locking member with the other member to expose the locking member to the direct action of heat, substantially as shown.

3. In a collapsible joint, members disposed to be normally separated by the action of distinct forces, an escapement member engaging at different points opposite inclined faces of the said members and directly exposed to heat at all points where not connected to the adjacent member, and a soft solder holding the escapement member to one of said members, substantially as shown.

4. In a collapsible joint, members normally separable under pressure applied to the joint, a rolling lock adapted to be secured to one member and holding the two together by engaging the other by frictional contact on the inclined face thereof, and a soft solder holding the roller lock to one of said members and being applied only at the point where the lock contacts with but one of said members, the other member being cut away at such points, substantially as shown.

5. In a device of the character described, the combination of members to form a joint normally collapsible and means to hold the same from collapse, the said means comprising a member with prongs obliquely inclined to the other member to engage by friction contact a locking means placed between the prongs and the said opposite member, said locking means, and a fusible material to hold the locking means, substantially as described.

6. In a device of the character described, the combination of members to form a joint normally collapsible, and means to hold the same from collapse, said means comprising a clip slidably mounted and having prongs with inclined faces and a roller lock transverse the members and between the one and the prongs of the other, and a fusible solder holding the lock to one of the members and fusible at high temperature to permit the collapse of the lock.

7. In a device of the character described, the combination of members to form a joint normally collapsible and means to hold the same from collapse, the said means comprising a clip portion on one of the members

formed with prongs with faces inclined to the other member, and a locking member adapted to form frictional engagement with the said prongs and with the other member to hold the said members together, and a soft solder applied to the locking member, substantially as described.

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

HERMAN W. MARTIN.

Witnesses:

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