

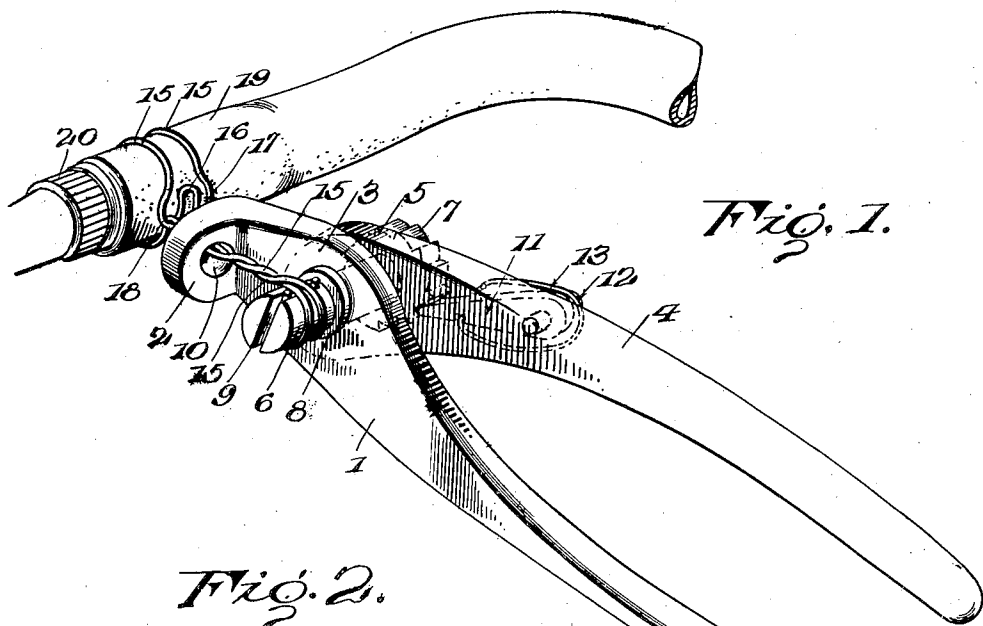
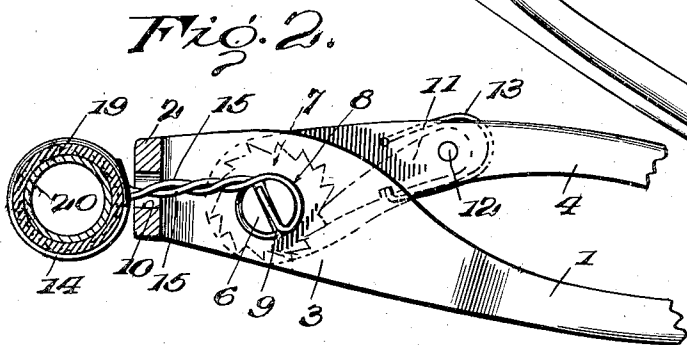
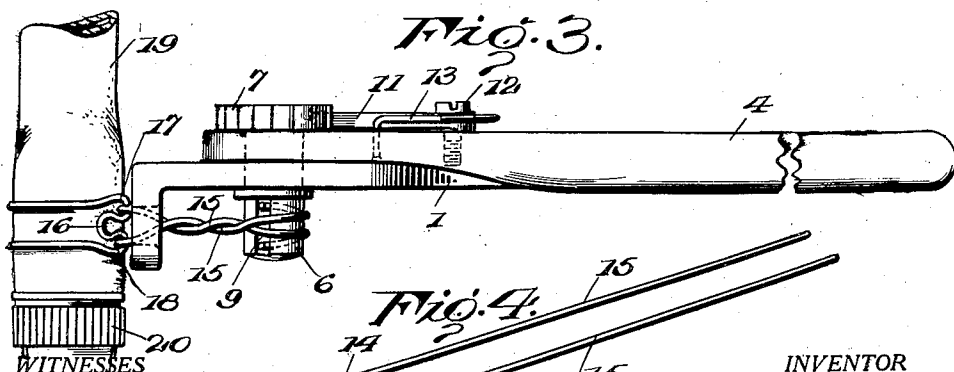
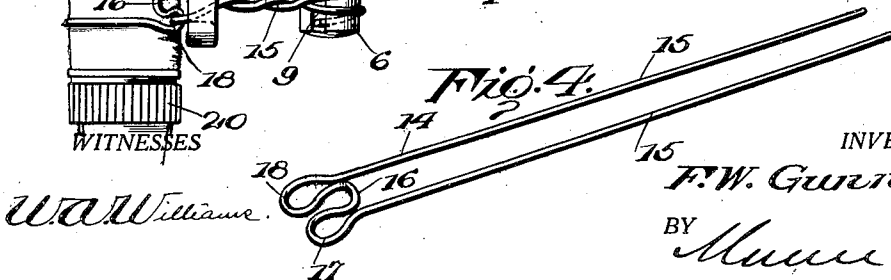
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HOSE CLAMP

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HOSE CLAMP.

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To all whom it may concern:

Be it known that I, FRED W. GUNN, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Hose Clamp, of which the following is a specification.

My invention relates to improvements in clamps for securing hose to a coupling, pipe or like object, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of the invention is to provide a novel clamp for hose or like objects, the clamp being formed of a single length of wire and adapted to be quickly and easily secured on the hose or like object.

Other objects and advantages will be apparent from the following description, considered in conjunction with the accompanying drawings, in which—

Figure 1 is a perspective view showing one form of clamp and a suitable tool in position to secure the clamp on a length of hose,

Figure 2 is a fragmentary section through the hose and through the tool, portions of the tool being shown in side elevation,

Figure 3 is a top plan view of the structure exhibited in Figure 1, and

Figure 4 is a perspective view of the clamp.

A tool suitable for use in applying the clamp comprises an elongated body 1 having at one end a laterally turned portion or head 2 and having a flattened portion 3 adjacent to the head 2. The body 1 constitutes a handle member and is adapted to cooperate with a second handle member 4 having a flattened end portion 5 connected with the flattened portion 3 of the first handle member by a short shaft 6 which extends transversely through aligned openings in the flattened end portion 5 of the handle member 4 and in the flattened portion 3 of the handle member 1. The shaft extends at one end beyond the outer face of the flattened portion 3 and is enlarged and fashioned at its other end to provide a ratchet wheel 7. The ratchet wheel 7 is positioned close to the outer face of the flattened portion 5 of the handle member 4 and the shaft 6 is held against any appreciable axial movement relatively to the handle members 1 and 4 by the ratchet

wheel and a retaining ring or collar 8 which is secured on the shaft in any suitable known manner in adjacent relation to the outer face of the flattened portion 3. The arrangement is such that the shaft is free to rotate about its axis independently of the handle members 1 and 4 and at the same time it serves to connect the handle members 1 and 4 pivotally together.

A transversely extending slot 9 is formed in the end of the shaft 6 remote from the ratchet wheel 7 and this slot may extend longitudinally of the shaft nearly to the plane of the retaining ring 8. An opening 10 is provided through the head 2, preferably in line with the slotted end portion of the shaft 6.

A pawl 11 which is pivotally supported at one end on the handle member 4 as indicated at 12 is adapted to engage at its other end with the teeth on the periphery of the ratchet wheel 7. A spring 13 carried by the handle member 4 cooperates with the pawl 11 to yieldingly hold the latter in engagement with the ratchet wheel 7, the arrangement being such that when the handle member 4 is swung about the axis of the shaft 6 toward the handle member 1, the pawl 11 will engage with the teeth of the ratchet wheel and cause rotation of the shaft 6 in a clockwise direction while the pawl 11 will ride over the teeth of the ratchet wheel without necessarily imparting rotation to the shaft 6 when the handle member 4 is swung away from the handle member 1.

In Figure 4, I show a novel wire clamp for hose or like articles which is adapted to be secured through the use of the tool which has been described in the foregoing. The clamp is designated generally 14 and is made of a single length of wire bent intermediate its ends to provide similar end portions 15, the bight portion of the clamp then being bent rearwardly in the plane of the end portions 15 and between the latter to provide a rearwardly extending loop or tongue portion 16 and similar loops 17 and 18 respectively at opposite sides of the loop or tongue 16.

In use, the clamp 14 is arranged in encircling relation to a hose 19 or like flexible tubing in position to bind the hose or tubing to a pipe or coupling 20 when the clamp has been secured in a manner which will now be described. One of the end portions 15 is inserted through the loop 18 while the other

end portion 15 is inserted through the loop 17, the end portions thus being spaced apart by the rearwardly extending loop or tongue 16. The free ends of the clamp are then 5 passed through the opening 10 and are inserted in the transverse slot 9 of the shaft 6. It will be manifest that when the shaft 6 is rotated through the operation of the handle 4, the end portions of the clamp will be 10 wrapped about the shaft 6 and the clamp will be drawn taut. It is to be understood that the head 2 is pressed firmly against the loops 16, 17 and 18 and that these loops are held against the hose 19 at the time the 15 shaft 6 is rotated to cause tightening of the portion of the clamp which encircles the hose. When the encircling portion of the clamp has been tightened to an extent sufficient to bind the hose to the interfitting 20 member 20, the handles 1 and 4 are grasped and the tool is rotated as a unit about its longitudinal axis, thereby twisting the extending end portions of the clamp together. the twisting operation being continued until 25 the rearwardly extending loop or tongue 16 is engaged by the twisted ends and will thus be held against spreading and against outward displacement from the periphery of the hose. Further twisting movement will cause

the ends of the clamping wire to break in 30 the slot 9 and the remaining twisted together end portions may then be bent oppositely to the loop 16 against the hose. The broken off portion of the wire ends may be easily 35 removed from the slot 9.

Obviously, the invention is susceptible of embodiment in forms other than that which is disclosed in the foregoing and I therefore consider as my own all modifications and adaptations thereof which fairly fall within 40 the scope of the appended claims.

I claim:

1. A wire clamp formed of a single length of wire bent intermediate its ends to provide substantially parallel end portions and 45 a bight, the latter being bent to provide spaced apart wire engaging portions.

2. A wire clamp formed of a single length of wire bent intermediate its ends to provide substantially parallel end portions and a 50 bight, the bight then being bent rearwardly in the plane of and between the end portions to provide a rearwardly extending loop and a pair of loops respectively disposed at opposite sides of the rearwardly extending 55 loop, as and for the purpose described.

FRED WILLIS GUNN.