

A. P. SWAIDMARK.
CLAMP FOR HOSE, &c.
APPLICATION FILED MAY 27, 1918.

1,369,851.

Patented Mar. 1, 1921.

Fig. 1,

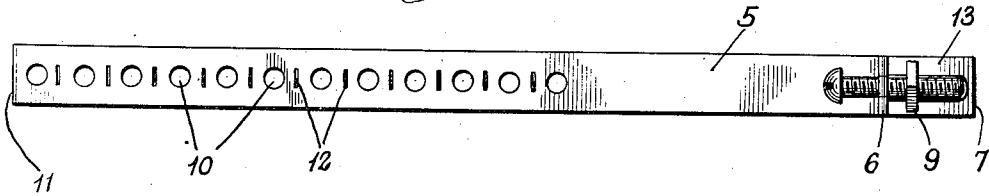


Fig. 2,

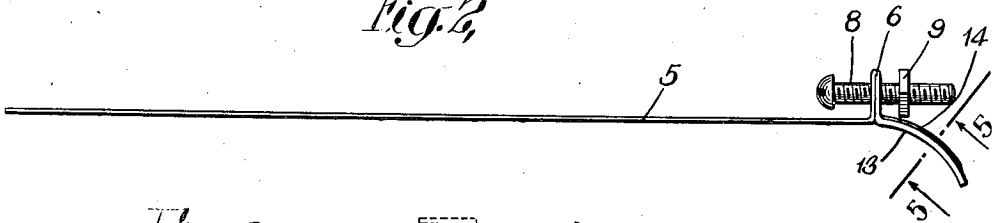


Fig. 3,

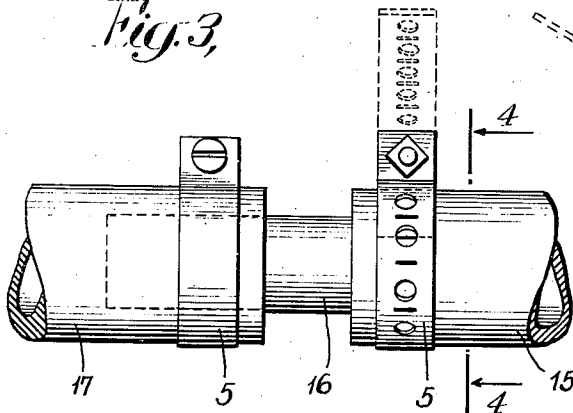


Fig. 4,

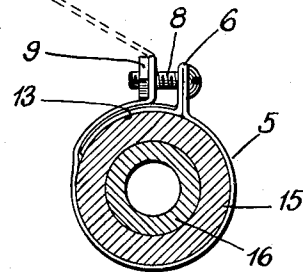


Fig. 6,

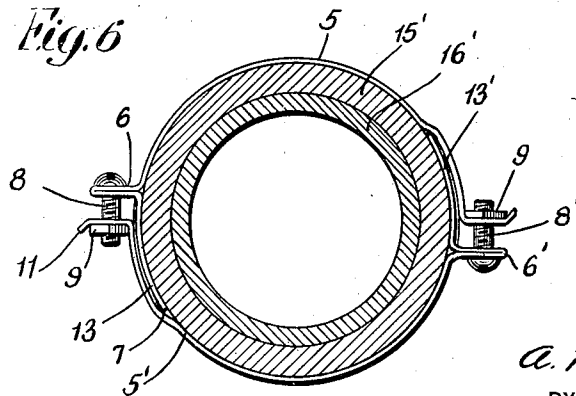


Fig. 5,



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CLAMP FOR HOSE, &c.

1,369,851.

Specification of Letters Patent.

Patented Mar. 1, 1921.

Application filed May 27, 1918. Serial No. 236,675.

To all whom it may concern:

Be it known that I, ALBIN P. SWAIDMARK, a citizen of the United States, residing at Hackensack, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Clamps for Hose, &c., of which the following is a specification.

My invention relates to clamps adapted to be clamped around hose, pipe sections, etc., of varying diameter and is an improvement upon the devices described in my Patent No. 1,219,882, hose clamp, dated March 20, 1917. In the said patent is described a clamp which may be fitted to hose of greatly varying diameters, the clamp comprising a metal ribbon which is wrapped around the hose or other object to be clamped in such a manner that adjustment may readily be made and the excess ribbon readily removed after the clamp has been installed. In the clamp described in said patent, a perpendicular or outwardly extending loop is formed in the ribbon through openings in which a bolt may be extended, the portion of the ribbon extending between the loop and the adjacent end of the ribbon being adapted to be overlapped by the other end portion of the ribbon which contains a longitudinal series of holes with one of which the bolt extending through the loop may be alined. The nut of the bolt is then screwed thereon to firmly clamp the element or elements therein, after which the excess ribbon above the nut may readily be broken away, preferably along scored lines situated between the spaced holes.

My present improvement has to do particularly with the portion of the ribbon extending between the loop and the adjacent end of the ribbon and the coaction of the same with the underlying hose or other element and the portion of the ribbon overlying the same, together with the clamping bolt and nut. I have found that drawing up the nut in the form of my invention just described has a tendency to cause the buckling or wrinkling of the underlying portion of the metal ribbon and of the flexible hose or the like clamped within the same, this resulting in an imperfect joint between the hose and the pipe section or other element clamped within the same. I have now found, as the result of considerable experi-

ment, that this defect may be overcome by providing the portion of the metal ribbon, which extends from the loop to the adjacent end of the ribbon, with a longitudinally extending bead or ridge against which the overlying portion of the metal ribbon is seated and firmly pressed when the nut is tightened on the clamping bolt. With this construction, the pressure exerted by the nut through the overlying portion of the metal ribbon will be taken up by the bead against which the overlying portion of the ribbon is pressed by the nut with the result that the underlying end portion of the ribbon will lie firmly against the periphery of the hose and will be pressed with greater force against the same because of the bead, and neither the ribbon nor the hose will be wrinkled or buckled to any degree whatever the clamping pressure exerted by the nut and bolt may be. In the preferred form of my improved clamp, the portion of the ribbon extending from the loop to the adjacent end, which carries the bead or ridge referred to, is provided with a preformed inward curvature to adapt the same to readily seat against the periphery of a hose or the like.

In order that a clearer understanding of my invention may be had, attention is hereby directed to the accompanying drawings forming part of this application and illustrating certain embodiments of my invention. In the drawings, Figure 1 is an extended plan view of the preferred form of my clamp, Fig. 2 is a side elevation thereof, Fig. 3 is a view of two of my clamps, viewed from opposite sides, joining two hose lengths by means of a pipe section, Fig. 4 is a section taken on line 4-4 of Fig. 3, Fig. 5 is a cross-section taken on line 5-5 of Fig. 2, and Fig. 6 is a cross-section similar to Fig. 4, illustrating the manner in which two or more clamps may be joined together in series to make a clamp of greater length.

Referring to the drawings, the metal ribbon 5, which may be of steel, brass or any suitable equivalent, is bent into a perpendicular loop 6 adjacent one end 7 of the ribbon, this loop being punched or drilled to form a bearing for a bolt 8, provided with a nut 9, the latter being on the same side of loop 6 as the end 7 of the ribbon.

The ribbon is provided with a series of holes 10 spaced lengthwise of the ribbon from the opposite end 11 thereof for a considerable portion of the length of the ribbon. The ribbon is also preferably provided with means for weakening the same between the holes 10, this weakening means preferably taking the form of lightly scored lines 12 formed transversely of the ribbon intermediate the holes 10, 10.

The end portion 13 of the ribbon extending from the loop 6 to the end 7 of the ribbon is provided with an outwardly extending longitudinal rib or bead 14 which is preferably located intermediate the side edges of the ribbon and is preferably formed by pressing the metal of the strip outwardly, as indicated in Fig. 5. The portion 13 of the ribbon is given an inward curvature, as shown, at the same time that the bead 14 is formed therein.

When the clamp is to be in use, as is indicated in Figs. 3 and 4, the portion of the ribbon containing the holes 10 is laid over the forwardly extending portion 13 of the ribbon, the latter being provided with the outwardly extending bead 14. The ribbon is now bent outwardly in a direction more or less parallel to that of the loop 6, this bending being conveniently done along the scored line nearest to the loop when the ribbon has been so wrapped around the hose. The bolt 8 is now passed through the hole 10 in line with the opening through loop 6, and the nut 9 screwed on the bolt. When the nut is tightened, the hose section 15 will be firmly clamped to the pipe section 16 or other element therein. The effect of screwing up nut 9 is to draw the overlying portion of the ribbon lengthwise over the bead 14 and at the same time to cause an inwardly directed pressure to be exerted by the overlying portion of the ribbon upon the bead 14, which pressure is uniformly distributed by the portion 13 of the ribbon upon the hose within the same. The bead not only prevents the buckling of portion 13 of the ribbon, but also, because of the abutment which it forms for the overlying portion of the ribbon, causes the portion 13 to be pressed more tightly against the hose than would be possible if the bead were not used. It thus takes up any slack in the hose, tightens the same throughout its periphery, and prevents any buckling or wrinkling of the same.

After the nut 9 has been screwed up, the excess ribbon may be broken off above nut 9, as is indicated by the dotted lines in Figs. 3 and 4, this breaking away being readily accomplished along the scored line just above the nut, after the scorings are provided.

In Fig. 3, I have shown a hose section 17 clamped to a pipe section 16, upon the other end of which is clamped a hose section 15, a pair of clamping ribbons 5, 5 being used,

this being merely to illustrate one manner of using my clamp, and it will be seen that the clamp is easily and quickly attached and is applicable to varying diameters of hose.

The manner in which a number of clamping ribbons may be joined together in series is shown in Fig. 6. In the figure, a ribbon 5 is shown provided with a loop 6 and a forwardly extending end portion 13. A second clamping ribbon 5' is secured in series to ribbon 5 by extending the bolt 8 of ribbon 5 through the end hole 10 of ribbon 5' adjacent to the end 11 of ribbon 5', ribbon 5' being bent outwardly along the scored line adjacent to the end hole 10 and nut 9 screwed into position as shown. The ribbon 5' then extends lengthwise of ribbon 5 over the end portion 13 of ribbon 5 and past the end 7 of ribbon 5, ribbon 5' being provided with a loop 6' beyond which extends its end portion 13'. The main portion of ribbon 5 may then be extended in the opposite direction around the hose 15', which is shown for purposes of illustration as being clamped to the pipe section 16', the portion of ribbon 5 carrying its spaced holes 10 overlying the end portion 13' of ribbon 5', bolt 8' of ribbon 5' being extended through the aligned opening of ribbon 5, after which the excess length of ribbon 5 beyond nut 9' of bolt 8' may be broken off and thrown away. This procedure is, of course, for the purpose of obtaining a greater length of clamping ribbon when the same is desired.

What I claim is:—

1. A clamp, comprising a metal ribbon adapted to be wrapped around a hose or the like, having an outwardly extending loop formed adjacent one end, with an opening therethrough, with the portion between the loop and said end provided on its outer surface with a longitudinally extending external ridge, said ribbon being provided with a series of holes spaced longitudinally from its other end, and a bolt adapted to extend through the opening in said loop and through the one of said holes aligned therewith, when said ribbon is wrapped around a hose or the like with its portion provided with said holes laid over the portion carrying said ridge and then bent outwardly therefrom, and a nut for said bolt adapted to press the superposed portion of said ribbon firmly against said ridge, and to thereby press the portion of said ribbon carrying said ridge tightly against the inclosed hose.

2. A clamp, comprising a metal ribbon adapted to be wrapped around a hose or the like, having an outwardly extending loop formed adjacent one end, with an opening therethrough, with the portion between the loop and said end curved inwardly and having the metal thereof pressed outwardly to form a longitudinally extending central bead, said ribbon being provided with a

series of holes spaced longitudinally from its other end, and a bolt adapted to extend through the opening in said loop and through the one of said holes alined there-
5 with, when said ribbon is wrapped around a hose or the like with its portion provided with said holes laid over the curved beaded portion, and then bent outwardly therefrom, and a nut for said bolt adapted to press the
10 superposed portion of said ribbon firmly against said bead.

3. A clamp, comprising a metal ribbon adapted to be wrapped around a hose or the like, having an outwardly extending loop
15 formed adjacent one end, with an opening therethrough, with the portion between the

loop and said end curved inwardly and provided with a longitudinal ridge, said ribbon being provided with a series of holes spaced longitudinally from its other end, and a bolt
20 adapted to extend through the opening in said loop and through the alined one of said holes when said ribbon is wrapped around a hose or the like with its portion provided with said holes laid over the portion carry-
25 ing said ridge, and a nut for said bolt.

This specification signed and witnessed this 8th day of May, 1918.

ALBIN P. SWAIDMARK.

Witnesses:

DYER SMITH,
I. McINTOSH.