

A. F. GILLET.
 CLAMP.
 APPLICATION FILED JUNE 6, 1921.

1,397,508.

Patented Nov. 22, 1921.

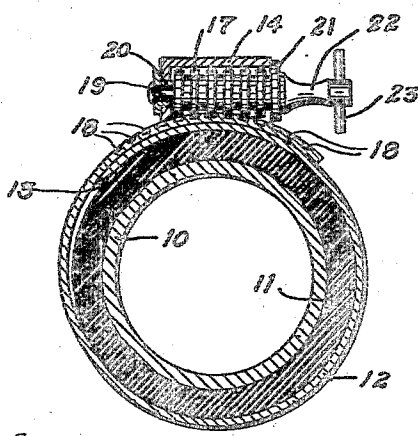


Fig. 1.

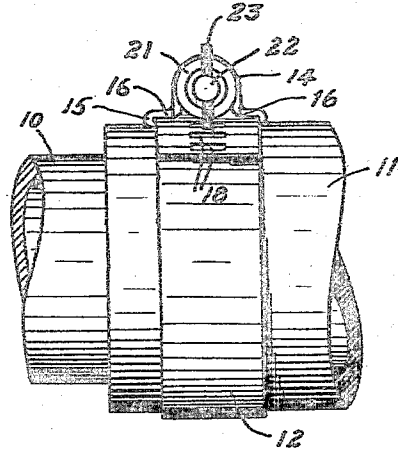


Fig. 2.

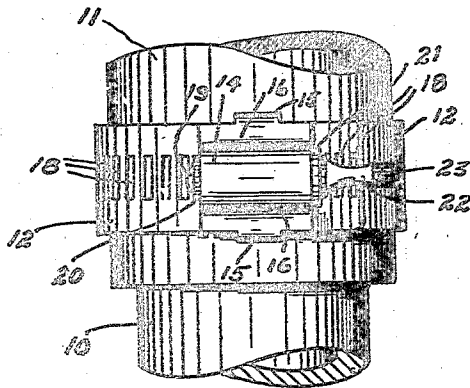


Fig. 3.

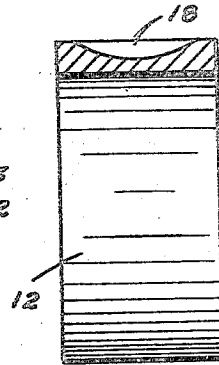


Fig. 4.



Fig. 5.

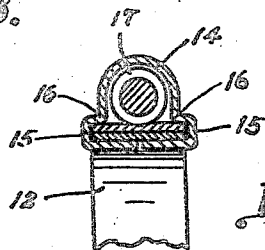


Fig. 6.

Witness
E. R. Morris

Inventor
A. F. Gillet.

334 *Arthur H. Sturges.*
 Attorney

UNITED STATES PATENT OFFICE.

ALEXIS F. GILLET, OF OMAHA, NEBRASKA, ASSIGNOR TO JUBILEE MANUFACTURING COMPANY, OF OMAHA, NEBRASKA.

CLAMP.

1,397,508.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALEXIS F. GILLET, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Clamps, of which the following is a specification.

The present invention relates to clamps, and more particularly to that type known as hose clamps.

An object of the present invention is to provide a clamp which may be used for coupling the hose connections to radiators and the like of internal combustion engines, and to provide a clamp which may be operated with comparative ease in a relatively small space where the usual screw driver and like tools usually employed can not be conveniently used.

Another object of the invention is to provide a hose clamp of this character which may be used on hose connections of different sizes so as to obviate the necessity of a dealer carrying a large stock of assorted sizes, the clamp of the present invention being arranged to be contracted and extended to a considerable extent within practicable limits.

A further object of the invention is to provide a clamp embodying the above characteristics and which comprises but a single operating part mounted upon the clamp as a part thereof and which is not separable therefrom so that all of the parts of the clamp are held in correct position for interlocking engagement and adjustment so that the parts can not be lost or dropped during the removal and replacement of the clamp.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts through the several views:

Figure 1 is a transverse section taken through a clamp constructed according to the present invention and as applied to a section of hose and a nipple and spud to which the hose is clamped;

Fig. 2 is a side elevation of the same;

Fig. 3 is a top plan view thereof;

Fig. 4 is a detail enlarged transverse section through the free end portion of the clamping band, showing one form of depression or opening in the outer side thereof;

Fig. 5 is a fragmentary enlarged view of the inner end of the clamping band, showing the beveled guiding edge thereof; and

Fig. 6 is a transverse section through the clamping band, and the intermediate portion of the contracting worm and its housing mounted on the band.

Referring to the drawing, 10 designates a spud or pipe which may be a radiator or engine jacket connection which is adapted to receive thereon one end of a flexible hose 11 in the usual manner.

The clamp comprising an encircling band 12 which may be formed of a plate of brass or other suitable flexible metal and which is of sufficient length to admit of the overlapping of the free end of the band upon the inner end thereof to thus permit of the expansion and contraction of the band in fitting hose 11 of different exterior diameters and for contracting the band in binding relation thereon. The inner end of the band 12, as shown particularly in Fig. 5, is provided at its extremity with a beveled inner side 13 forming a rounded or inclining guiding edge adapted to slide over the outer surface of the hose 11 and to prevent the cutting or biting in of the inner end of the band 12 when the latter is tightened.

Mounted upon the inner end portion of the band 12 is a bracket 14 which may be constructed of sheet metal and which is substantially cylindrical in form and which has at opposite sides attaching flanges 15 which are overturned about the opposite lateral edges of the band 12 and permanently secured beneath the same by solder or the like as shown in Fig. 6. The flanges 15 are extended outwardly beyond the outer face of the band 12 and are bent inwardly to overhang the band and provide shoulders 16 beneath which is slidably engaged the free end portion of the band. The housing and its flanges thus provide a guideway through which the free end of the band may be slipped and serves to slidably connect the free ends of the band after the latter has been fitted about the object or hose to be compressed.

The cylindrical casing 14 is of suitable length for supporting and housing a worm 17 and the casing and worm are mounted upon the band with the axis of the worm extending in the same direction as the length of the band. The worm 17 is exposed through the lower side of the bracket or housing 14 and is adapted to engage the outer face of the free end portion of the band.

This free end portion of the band has in its outer face a plurality of transverse openings 18 which may be formed in any suitable manner and which are adapted to receive the threads of the worm 17. As shown in Fig. 4, the openings 18 may be formed by rolling concaved depressions conforming substantially to the peripheral edges of the worm threads to provide opposing abrupt walls or shoulders against which the threads of the worm may operate in expanding and contracting the band. On one end of the worm 17 is a trunnion portion 19 which projects through the closed end of the housing bracket 14 and a bushing 20 may be fitted in the opening of the bracket to form a suitable bearing for the trunnion 19. The trunnion 19 is swaged at opposite sides against the outer side of the bushing for holding the latter in place. The other end of the worm 17 is provided with an enlarged head or washer 21 which engages the other end of the bracket 14 to take up tension of the worm when contracting the band. The worm is also provided with a shaft 22 projecting outwardly from the head 21 and through which is fitted a transverse handle or pin 23, adapted to be grasped between the fingers for turning the worm and adjusting the band.

In operation, the clamp may be applied to the hose 11 after the same has been fitted upon the spud 10 by withdrawing the free end of the band and bending the band around the outer side of the hose. The free end of the band is inserted in the outer end of the bracket or housing 14 beneath the shoulders 16 and against the under side of the worm 17. The worm 17 is now turned in a direction to engage the threads of the worm in the openings 18 of the band and continued rotation of the worm causes the same to draw the free end of the band into and through the bracket 14, contracting the band to the desired extent. The pitch of the worm is such that it forms a lock preventing the withdrawal of the band and thus the clamp is securely bound and locked upon the object without the use of clamping bolts, screws and the like which are usually employed. It will be noted that by provision of the worm considerable pressure may be placed upon the band without the use of tools and further that the worm may be tightened without using a screw driver or other relatively long tool which must be

brought into line with clamp screws and other devices in common use.

The bracket 14 is permanently attached to the band and the worm is permanently mounted in the bracket so that all of the parts are maintained in their relative positions and need not be separated for adjustment, removal or application of the clamp.

I do not wish to be restricted to the size, form, and proportions of the various parts, and obviously changes could be made in the construction herein described without departing from the spirit of the invention, it being only necessary that such changes fall within the scope of the appended claims.

What is claimed is:

1. A hose clamp comprising a flexible metallic band, a bracket mounted upon the outer side of one end of the band and spaced therefrom to provide a passage between said end of the band and the bracket for the reception of the other end of the band, and a rotatable worm mounted in said bracket with its axis extending in the direction of the length of the band and exposed at its inner side toward said first end of the band, said other end of the band having openings in its outer side adapted to receive the threads of the worm therein for binding the ends of the band together and for sliding said ends one upon the other.

2. A hose clamp comprising a flexible metallic band adapted to encircle a hose and arranged with its ends in overlapping relation, a bracket carried upon the inner end of the band and being spaced therefrom to receive the other end of the band beneath the bracket, and a worm arranged in the bracket and exposed toward the overlapping ends of the band for binding engagement against the outer end of the band whereby said ends of the band may be clamped together and slid one upon the other for expanding and contracting the clamp.

3. A hose clamp comprising a flexible metallic band of a length adapted to encircle a hose and with its free ends in overlapping relation, a bracket mounted upon the inner end of the band and having a guide-way therethrough for receiving the outer end of the band for maintaining the same in sliding contact with the inner end of the band, and a worm carried in the bracket and arranged to engage the outer side of the outer end of the band whereby to bind said ends of the band together and to effect relative movements of said ends of the bands for contracting and expanding the clamp.

In testimony whereof, I have affixed my signature in presence of two witnesses.

ALEXIS F. GILLET.

Witnesses:

ARTHUR H. STURGES,
E. B. MORRIS.