

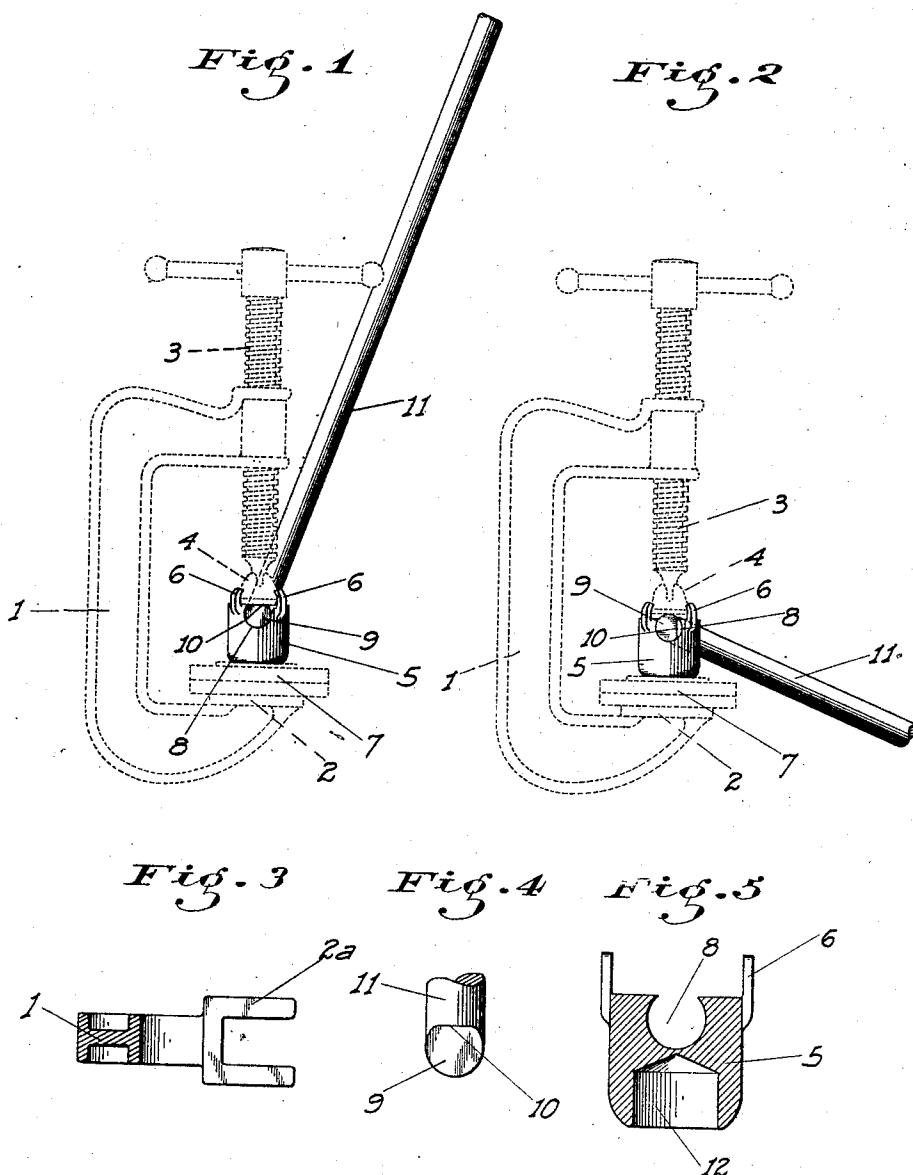
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EXCESS PRESSURE ATTACHMENT FOR CLAMPS

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EXCESS-PRESSURE ATTACHMENT FOR CLAMPS.

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To all whom it may concern:

Be it known that I, LOUIS T. BERGH, a citizen of the United States, residing at Fair Oaks, county of Sacramento, State of California, have invented certain new and useful Improvements in Excess-Pressure Attachments for Clamps; and I do declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in clamping devices, my principal object being to provide an auxiliary clamping device, in the form of an attachment readily applied to an ordinary screw clamp of the C frame type by means of which the power of the clamp is increased considerably. In other words, after the screw of the clamp has been advanced as far as possible by hand against the parts being held, further and almost unlimited pressure may instantly and easily be applied to the parts to force them still closer together without any twisting strain being placed on the screw.

The actuating member of the attachment, once the additional pressure is applied, will not release of itself, but will remain in- definitely in the position to which it has been moved, forming an automatic lock.

The advantages obtainable with this attachment will be evident to those who have occasion to use such clamps, and who have at one time or another expended considerable and sometimes futile efforts in endeavoring to draw two parts together.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a side outline of an ordinary C

frame clamp, showing my attachment applied thereto in a neutral position.

Fig. 2 is a similar view showing the attachment moved to a pressure applying position.

Fig. 3 is a fragmentary plan view of a modified form of clamp-foot or pad, for use in certain special work.

Fig. 4 is an enlarged end view of the cam member on the attachment lever, detached.

Fig. 5 is an enlarged sectional view of the head of the attachment, detached.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 denotes the frame of an ordinary clamp, having a foot-pad 2 and a screw 3 in alinement with the pad, the screw carrying on its end the usual swivelly mounted head 4, positioned to face the pad 2.

These are standard parts, and of themselves form no part of my attachment.

The latter comprises a head 5, of substantially the same diameter as the head 4, and adapted to be loosely hung from the latter by means of lugs 6 provided on the head 5 and adapted to be bent over the edge of the head 4, as clearly shown in Figs. 1 and 2. This head projects toward the pad 2, and engages the adjacent surface of the parts 7 to be clamped and which are placed between said pad and head 5. Extending transversely through the head 5 is a circular orifice 8 which is centered so that the periphery thereof intercepts and cuts through the inner face of the head for a certain arcuate distance. In other words, a circular rod placed in said orifice will project above the inner face of the head 5 somewhat, the extent of such projection depending of course on the location of the center of the orifice relative to the inner face of the head.

Removably and turnably fitted in the orifice 8 is a circular rod 9 having a longitudinal flat surface 10 cut therein to a depth equal to the projection of the plane of the orifice 8 beyond the adjacent face of the head 5. In other words, if the rod is turned so that the flat surface 10 is parallel with the inner face of the head, it will be also

in alinement therewith, or at least will not extend outwardly of said face. Connected to or formed integral with the rod 9 at one end thereof is a handle or lever member 11, disposed in a plane at right angles to the rod.

In operation, the screw 3 is advanced toward the pad 2 to force the parts 7 together as far as possible without using excessive twisting force on the screw.

The adjacent faces of the heads 4 and 5 are then in close contact with each other.

If additional pressure is desired, the rod 9, which is in reality a form of cam, is inserted into the orifice 8 from one end thereof in the only position then possible, that is, with the flat surface 10 of the cam alined with the heads. Now on turning the handle in either direction, the flat portion 10 will be moved around in the orifice, and the circular periphery of the cam will engage the head 4. Since this periphery will project beyond the plane of the adjacent face of the head 5, the two heads 4 and 5 will perforce be separated, and since the screw 3 and pad 2 are then relatively immovable, the parts 7 will be compressed or drawn closer together. The main cam being circular, it will remain of itself in any position to which it may be turned. If the parts tend to remain in the latter position when once so moved, the cam may be retracted to again place the flat surface 10 thereof in alinement with the face of the head 5, the screw advanced to take up the space then remaining between the two heads, and the handle 9 then turned to again separate the heads. It will thus be seen that great pressure can be applied to the parts without twisting the screw or tending to twist the parts.

The additional pressure thus obtainable depends on two factors—the length of the handle 11, and the distance the periphery of the orifice 8 projects beyond the plane of the head 5, the latter factor of course governing the form of the cam. In other words, if the circular portion of the cam can project but slightly beyond the head, a great leverage will be obtained, but the heads will separate but little; whereas with a greater projection of the cam beyond the head, a greater movement of the head 5 will be had, but the pressure or leverage will not be as powerful.

I have in mind, as one use for this attachment, the tightening of wheel spokes in the metal fellyes of automobile wheels. For such service, the clamp foot is forked as at 2^a in Fig. 3, to straddle a spoke, while the head 5 is socketed on the outer face thereof as shown at 12 in Fig. 5, to receive the end of the spoke which projects through the inner face of the felly in the above named form of wheel construction.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:

1. An excess pressure attachment for screw clamps including a head adapted to be placed between the head and foot pad of the clamps, said heads normally abutting, and means applicable to said first named head for separating the heads.

2. An excess pressure attachment for screw clamps including a head adapted to be placed between the head and foot pad of the clamps, said heads normally abutting, and means applicable between said heads for separating the same.

3. An excess pressure attachment for screw clamps including a head adapted to be placed between the head and foot pad of the clamps, said heads normally abutting, and cam means mounted in the first named head and adapted to be moved into engagement with the clamp head to effect a separation of the heads.

4. An excess pressure attachment for screw clamps including a head adapted to be placed between the head and foot pad of the clamps, said heads normally abutting, means connecting the heads in a manner to allow of separation thereof, and cam and lever means applicable at will for so separating the heads.

5. An excess pressure attachment for screw clamps including a head adapted to be placed between the head and foot pad of the clamps, said heads normally abutting, said first named head having a transverse orifice cutting through the face of said head which lies adjacent the clamp head, and a cam turnably mounted in the orifice and adapted to be positioned to normally allow the heads to abut but to project when turned beyond the plane of the first named head.

6. An excess pressure attachment for screw clamps including a head adapted to be placed between the head and foot pad of the clamps, said heads normally abutting, said first named head having a transverse orifice cutting through the face of said head which lies adjacent the clamp head, and a cam turnably mounted in the orifice, said cam having a flat surface which when parallel to the adjacent face of the first named head will not project therebeyond.

7. An excess pressure attachment for screw clamps including a head adapted to be placed between the head and foot pad of the clamps, said heads normally abutting, said first named head having a transverse orifice cutting through the face of said head which lies adjacent the clamp head, a circular cam turnably fitted in the orifice, and a flat surface on the cam cut lengthwise therein to a depth not less than the projection of the periphery of the orifice beyond the plane of the adjacent face of the head. 10

In testimony whereof I affix my signature.

LOUIS T. BERGH.