

March 24, 1931.

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1,797,452

CLASP OR TOGGLE

Filed Feb. 13, 1928

Fig. 1

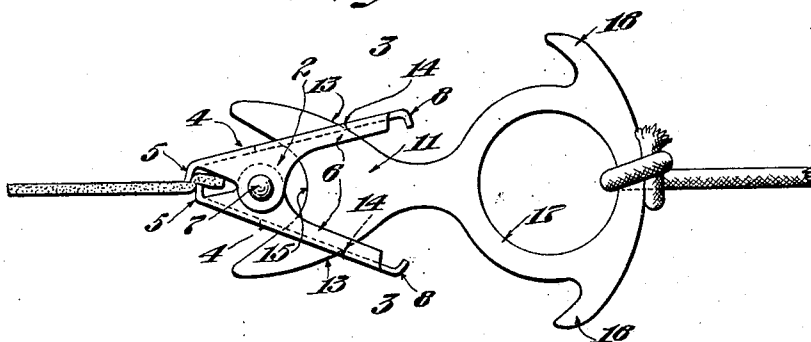


Fig. 2

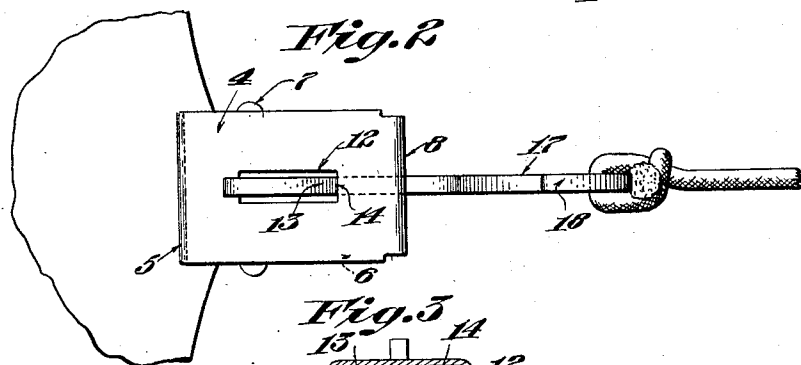


Fig. 3

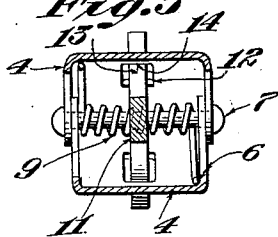
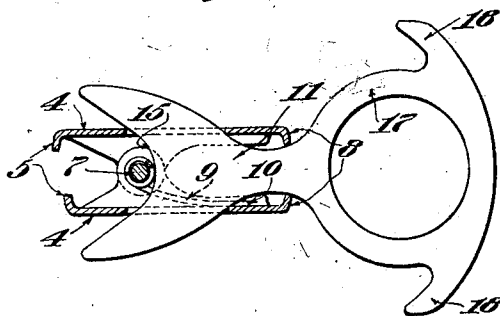


Fig. 4



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CLASP OR TOGGLE

Application filed February 13, 1928. Serial No. 253,807.

The present invention relates to clasps and more particularly to that type of clasp employed in the stretching of leather in drying frames and commonly known as toggles.

5 As heretofore constructed these toggles have comprised various combinations of levers, links, and springs, and are not only expensive to construct, but are liable to excessive wear and breakage in use. Many of these
10 prior constructions are objectionable in that they have a tendency to slip upon the leather, while others are not adapted for easy manipulation by the operator with one hand, or for use with different types of drying frames.

15 The object of the present invention is to provide a clasp or toggle which shall be simple and cheap in construction, which will comprise a minimum of parts, and which will be strong and durable without liability of break-
20 age or excessive wear.

A further object is to provide a form of clasp or toggle which shall hold the leather or material with an unyielding grip irrespec-
25 tive of variations in thickness, and which may be easily manipulated with the hand of the operator.

A still further object of the present invention is to provide a toggle which is adapted for use upon the various forms of drying
30 frames now employed.

With these objects in view the present invention consists in the clasp or toggle herein shown and described and more particularly defined in the claims.

35 In the accompanying drawings which illustrate what is now considered the preferred form of the present invention, Figure 1 is a side elevation of the improved clasp or toggle in operative position; Fig. 2 is a top plan
40 view of the same; Fig. 3 is a vertical transverse section on line 3—3 of Fig. 1; and Fig. 4 is a vertical longitudinal section with the toggle in open or inoperative position.

45 The toggle illustrated in the drawing comprises a pair of levers or members 4 pivoted

together intermediate their ends and having at one end cooperating gripping jaws 5. Each member 2 is formed of a single piece of sheet material, with its front end bent substantially at right angles to form the grip-
50 ping jaw. The sides 6 are formed of bent-over portions which not only stiffen and strengthen the member, but also afford a bearing for the pivot pin 7. Each member is bent over at its rear end 8 to stiffen it trans-
55 versely and to provide a smooth, rounded surface for the fingers of the operator.

The members are normally held with the jaws closed by the action of a coil spring 9 which surrounds the pivot pin, and has its
60 ends 10, 10, engaging the members to the rear of the pivot. This spring is not so strong but it may be easily overcome by the hand of the operator, being intended to give
65 only a preliminary gripping of the work, sufficient to hold the toggle in its adjusted position prior to any stretching action on the leather.

The jaws are positively forced together to grip the leather securely by means of a cam 11
70 of general wedge shape, which acts to force the rear portions of the members apart. This cam is located between the rear portions of the members 2 with its wider end toward
75 the front, that is, toward the jaws, and extending through longitudinal slots 12 formed medially in the members 2.

When the cam is moved rearwardly the actuating faces or edges 13 engage the rear walls
80 14 of the slots 12 and positively force apart the rear portions of the members, thereby closing the jaws.

In order to compensate in whole or in part for the difference in angular position of the
85 two members when gripping leather of different thicknesses, the cam faces 13 are preferably curved, as shown in Fig. 4 instead of being straight throughout their length, the closing effect of the cam thus being made
90

more nearly uniform throughout the range of its movement.

To shorten the length of the toggle to make it more compact, the front or broad end of the wedge or cam member is recessed as shown at 5 to provide clearance for the spring and pivot pin. Thus the cam may be located further forward in the toggle and the overall length of the complete device correspondingly reduced.

Also, in order to permit the closer approach of the rear portions of the members 2 and a correspondingly wider opening of the jaws 5, the wedge or cam 11 is of reduced thickness or height opposite the rear ends 8 of the members.

For the purpose of facilitating the rearward or operative movement of the cam 11 by the operator, the cam is provided with a ring-shaped or annular extension 17, having an opening of sufficient size to receive the finger of the operator, or to facilitate the grasping of the cam in other convenient manner.

Where the toggle is to be used with the common form of stretching frame, a cord is fastened through this annular portion 17, which cord may be attached to the stretching frame in the well known manner.

To adapt the toggle for use on that type of frame in which a plurality of holes or openings are provided, the rear portion of the cam is formed with two ears or prongs 18 adapted to be caught in one of such openings to connect the toggle with the stretching frame.

In operation these toggles are attached around the entire margin of the skin or leather at spaced intervals, and the skin or leather is stretched by pulling or drawing on the toggles, the latter being then secured to the frame either by the cord or by the prongs, according to the type of stretching frame employed.

In attaching the individual toggles, the operator grasps the rear end of the members of the toggle between his thumb and fingers, and compresses these portions against the action of the spring. This opens the gripping jaws, the cam sliding forward as the rear ends of the slots engage the cam surface. The edge of the leather or skin is inserted between the jaws and the toggle released, whereupon it grips the leather with sufficient force to prevent accidental dislodgment before the stretching strain is applied. The operator then takes the toggle either by the annular or ring portion at the rear of the cam members or by the cord and pulls the same rearwardly, the cam acting first to close the jaws more tightly upon the leather, and then to impart the stretching strain thereto as the cam member is drawn further backwards. The harder the pull the more firmly the jaws grip the leather.

After the stretched leather has been prop-

erly dried, the toggles may be detached from the stretching frame and quickly released from the leather by compression of the rear ends of the members.

The improved toggle is of simple construction, involving only five different parts, three of which may be died or pressed out of sheet metal; there are no loose parts to become separated and lost, and no small parts to be broken or liable to excessive wear. The toggle is compact, the cam slots lying substantially equidistant from the front and the rear ends of the members with the front portions of the slot overlying the pivot pin. Thus the actuating portions of the cam are located at all times substantially between the front and rear ends of the toggle.

Having thus described the invention, what is claimed is:

1. A clasp or toggle comprising two members having cooperating gripping jaws at their front ends, a pivot pin for connecting the members intermediate their ends, each of said members being provided with a longitudinally disposed slot a portion of which overlies the pivot pin, a wedge shaped cam mounted in the slots for actuating the members to close the jaws, the front or wider portion of the cam being recessed to provide clearance for the pivot pin.

2. A clasp or toggle comprising a pair of members formed of sheet metal and having turned over ends to form gripping jaws at one end and finger engaging portions at the other, said members having turned over sides to stiffen the members and to receive a pivot pin for connecting the members, a coiled spring surrounding the pin, each of said members being provided with a longitudinal slot, and an actuating cam mounted in the slots, the cam having a portion of reduced thickness to provide clearance for the rear ends of the members to permit the wider opening of the jaws.

3. A clasp or toggle comprising two members pivoted together intermediate their ends, each of the members having a longitudinally disposed slot and a cam member comprising a pair of opposed external cam faces, each face engaging the end of one of the slots, and a solid body portion between the cam faces to prevent distortion of the cam member due to compressive strains in operation.

4. A clasp or toggle comprising two substantially straight members with bent over side portions and cooperating gripping jaws at their front ends, each of said members being provided with a substantially medial slot extending therethrough, a pin mounted in the side portions intermediate the ends of the members and pivotally connecting the same, and a wedge shaped cam having external cam faces and a solid body portion therebetween to prevent distortion of the cam member due to compressive strains in operation mounted

in the slots at the rear of the pin and movable rearwardly to force the rear ends of the members apart thereby closing the gripping jaws.

5 5. A clasp or toggle comprising two members formed of sheet metal having turned over sides and with cooperating gripping jaws at their front ends, each of said members having a medially disposed slot positioned substantially equidistant from each end, a pivot pin
10 mounted in the turned over sides and intermediate the ends of the members for connecting the members together, and a wedge shaped cam having external cam faces and a solid body portion therebetween to prevent distortion of the cam member due to compressive
15 strains in operation with the thinner end of the wedge to the rear, the cam faces engaging the ends of the slots distant from the pivot pin for separating the rear ends of the members,
20 the cam being recessed at its front end to provide clearance for the pivot pin.

6. A clasp or toggle comprising a pair of members pivoted together, each member having a gripping jaw at its front end and a slot,
25 a wedge shaped cam mounted in the slots for actuating the members, the cam having a solid body portion and being provided at its rear end with a finger receiving opening whereby the cam may be actuated to close the
30 jaws and thereafter to exert tension on the clamp, and also being provided with a prong to secure the clamp in position in an opening in a frame.

7. A clasp or toggle comprising a pair of
35 members pivoted together, each member having a gripping jaw at its front end and a slot, a cam mounted in the slots for actuating the members, the cam being ring shaped at its rear end to provide a finger receiving opening
40 whereby the same may be actuated to close the jaws and thereafter to exert tension on the clamp, the ring shaped portion of the cam being provided with a pair of prongs on opposite sides thereof to secure the clasp in position in an opening in a frame.
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8. A clasp or toggle comprising a pair of members pivoted together, each member having a gripping jaw at its front end and a slot in its rear portion, a cam mounted in the slots
50 and movable rearwardly for actuating the members, the cam being wedge shaped and having a solid body portion with diverging external actuating faces the rate of divergence diminishing toward the thicker end of the
55 wedge to compensate for different angular positions of the members due to variations in thickness of the material between the jaws.

9. A clasp or toggle comprising two members having cooperating gripping jaws at
60 their front ends, a pivot pin for connecting the jaws intermediate their ends, a coiled spring encircling the pin and with one free end engaging one member and the other free end engaging the other member tending normally
65 to close the jaws, each member being provided

with a longitudinally disposed slot located in the rear portion of the member and a wedge-shaped cam mounted in the slots with the thinner portion of the wedge to the rear, and with external cam faces for positively separating
70 the rear portions of the members to close the jaws, and a solid body portion between the cam faces to prevent distortion of the cam member due to compressive strains in operation.
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In testimony whereof, I have signed my name to this specification.

LAWRENCE HOWES TEEL.

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