G. L. HOFFER.

CLAMP.

APPLICATION FILED DEC. 31, 1907.

903,380. Patented Nov. 10, 1908.

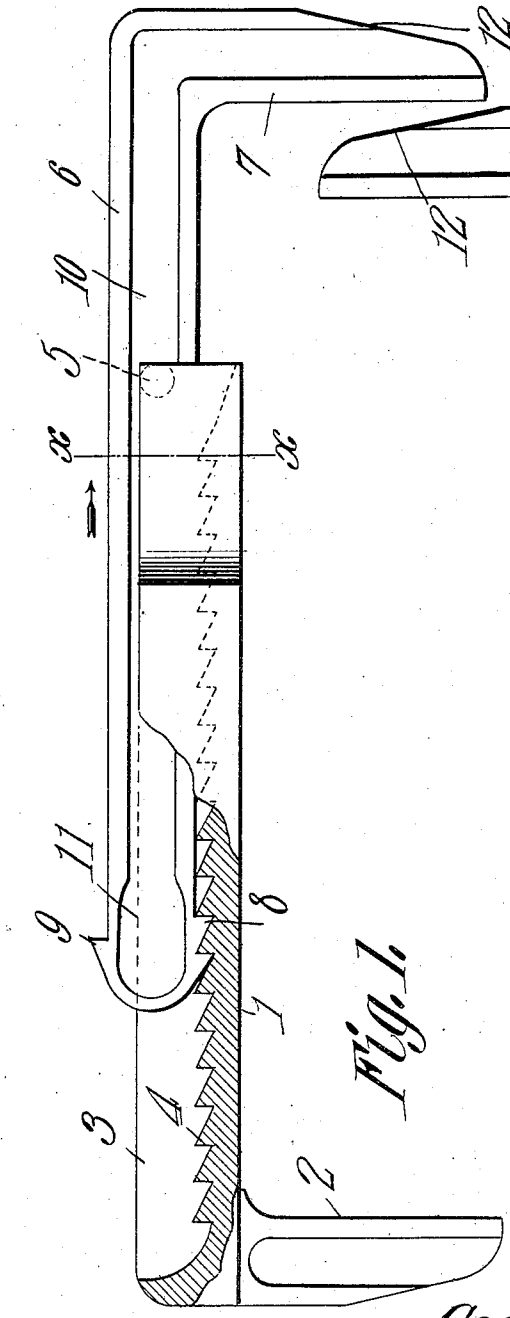


Fig. 1.

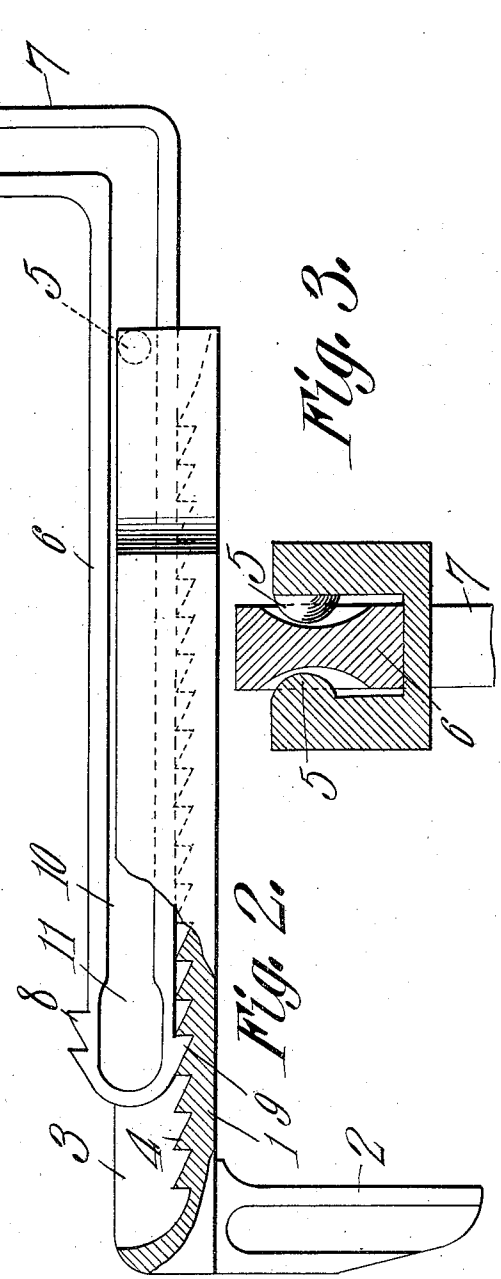


Fig. 2.

Fig. 3.

WITNESSES:

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GEORGE L. HOFFER, OF LAUREL, MISSISSIPPI.

CLAMP.

No. 903,380. Specification of Letters Patent. Patented Nov. 10, 1908.

Application filed December 31, 1907. Serial No. 408,745.

To all whom it may concern:

Be it known that I, GEORGE L. HOFFER, a citizen of the United States, residing at Laurel, in the county of Jones and State of Mississippi, have invented a new and useful Clamp, of which the following is a specification.

This invention relates to clamps and is particularly designed for use in connection with molding flasks.

The object of the invention is to provide a simple two-piece clamp which can be quickly adjusted to flasks of different sizes and can be quickly changed so as to be used either as a U-clamp or a Z-clamp.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a view partly in section and partly in elevation of a clamp embodying the present improvements. Fig. 2 is a similar view showing the same adjusted for use as a Z-clamp. Fig. 3 is an enlarged section on line *x*—*x*, Fig. 1, one of the guide projections being shown in section.

Referring to the figures by characters of reference, 1 designates the base member of the clamp, the same having a jaw 2 extending from the end of one face thereof and at right angles thereto. The opposite face of the member 1 is channeled longitudinally as indicated at 3 and the inner wall of this channel is provided with ratchet teeth 4. That end of the channel farthest removed from jaw 2 is open and also provided with oppositely disposed projections 5 preferably semi-spherical and which are for the purpose hereinafter set forth. The adjustable member of the clamp consists of a bar 6 having a jaw 7 extending at right angles from one end thereof, while the other end of the bar has teeth 8 and 9 extending from opposite faces thereof and designed to engage the ratchet 4. Grooves 10 are formed in opposite side faces of the jaw 7 and bar 6, said grooves extending from the outer end of the jaw throughout the length thereof and thence longitudinally of the bar 6. The grooves terminate at points between the teeth 8 and 9, said grooves being preferably enlarged at these points as shown at 11. The grooves are of sufficient depth to permit the projections 5 to extend loosely thereinto as indicated in Fig. 3. The outer end of jaw 7 is preferably tapered as indicated at 12 for the purpose hereinafter set forth. When it is desired to use the device as a U-clamp jaw 7 is placed in alinement with the open end of channel 3 and with bar 6 and jaw 2 extending in opposite directions. The jaw 7 is then inserted into the channel so that the projections 5 will ride within the groove 10. The bar 6 is then swung downward into alinement with the bar 1 and slid into the channel 3 until the projections 5 assume positions within the enlarged portions 11 of the grooves. Bar 6 is then swung upward with the projections 5 as a pivot until the two jaws assume parallel positions as indicated at Fig. 1 whereupon bar 6 can be pushed inward so as to cause channel 8 to slip over the teeth of the ratchet 4. The parts may be detached by reversing the foregoing operation.

Should it be desired to use the device as a Z-clamp the bar 6 is placed at right angles to the bar 1 and with its jaw 7 within the channel 3 and pointed toward the projections 5. Said jaw is then slid between the projections and the bar 6 swung downward into the channel 3 as shown in Fig. 2. The channel 9 will thus be brought into engagement with the ratchet 4. It will be seen that the clamp is of very simple, durable and efficient construction and inasmuch as it is formed of but two parts it can not get out of order. The device can be quickly adjusted to flasks of different proportions and by reason of the peculiar disposition of the parts the engagement of the teeth and ratchet will be increased in proportion to the pressure exerted upon the jaws 2 and 7. By tapering the jaw 12 the same can be readily inserted into the open end of the channel without binding upon the adjoining end of the ratchet in channel 3. By enlarging grooves 10 as indicated at 11 it is possible to swing the bar 6 upon the projections 5 without causing the teeth 8 and 9 to engage the adjoining portion of the ratchet.

What is claimed is:

1. A clamp comprising a channeled member having retaining means within the channel and a jaw, and an adjustable member interposed between and slidably and pivotally engaging the retaining means, said adjustable member having an integral jaw, and separate means upon the members for holding the jaws in adjusted relation.

2. A clamp comprising a channeled member, a retaining device within said member, a slidable member within the channel and detachably and pivotally engaging the retaining device, jaws upon the members, and separate means integral with said members for holding the jaws in adjusted relation.

3. In a clamp the combination with a channeled member having a ratchet within the channel, and a retaining device within said channel; of an adjustable member slidably mounted within the channel and detachably and pivotally engaging the retaining device, means upon said member for engaging the ratchet, and jaws extending from the members.

4. In a clamp the combination with a channeled member, and oppositely disposed retaining devices within the channel; of a longitudinally grooved member interposed between and slidably and pivotally engaging the retaining devices, jaws extending from the members, and separate means upon said members for locking the jaws in adjusted relation.

5. A clamp comprising a channeled member, a ratchet within said channel, and oppositely disposed retaining means within the channel; of a longitudinally grooved member movably mounted within the channel, said grooves being disposed to receive the retaining devices, means upon said member for adjustably engaging the ratchet, and jaws extending from the members, said grooved member being slidably and pivotally mounted upon the retaining devices.

6. In a clamp the combination with a channeled member and a retaining device within the channel; of a reversible longitudinally grooved member movably mounted within the channel, the retaining device being seated within the groove, jaws extending from the members, and separate means upon the members for locking the jaws in adjusted relation, said grooved member being pivotally and slidably mounted upon the retaining device.

7. In a clamp the combination with a channeled member, and a projection within the channel; of an adjustable member having a longitudinal groove constituting a seat for the projection, said member being reversible and slidable within the groove, jaws extending from the members, and separate means for locking the jaws in adjusted relation, said adjustable member being pivotally and slidably mounted upon the projection.

8. In a clamp the combination with a longitudinally channeled member, said channel being open at one end, a ratchet within the channel, and a projection within the open end of the channel; of a slidable and reversible member having a longitudinal groove disposed to receive the projection, oppositely extending teeth at one end of said member and disposed to engage the ratchet, and jaws extending from the members, said reversible member being slidably and pivotally mounted upon the projection.

9. The combination with a longitudinally channeled member, said channel being open at one end and throughout its length, there being a ratchet within the channel, and a projection within the open end of the channel; of a member mounted within the channel, said member being longitudinally grooved for the reception of the projection and mounted to slide and swing upon the projection and being reversible relatively to the channeled member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE L. HOFFER.

Witnesses:
C. L. SIMPSON,
M. V. HOFFER.