No. 878,491. PATENTED FEB. 11, 1908.

E. BARKER.

GLUING CLAMP.

APPLICATION FILED APR. 11, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

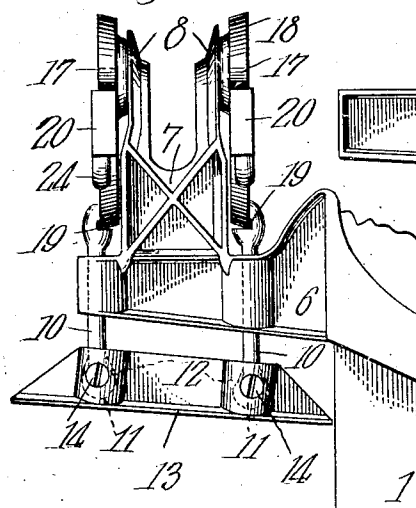

Fig. 2.

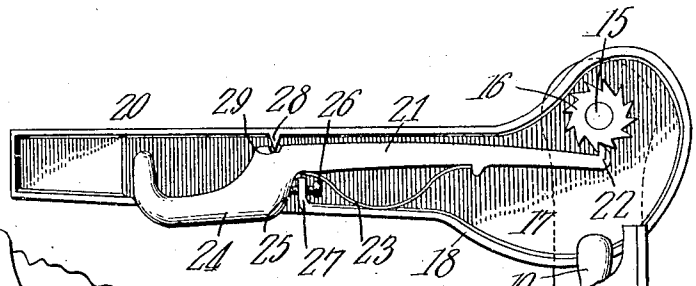

Fig. 3.

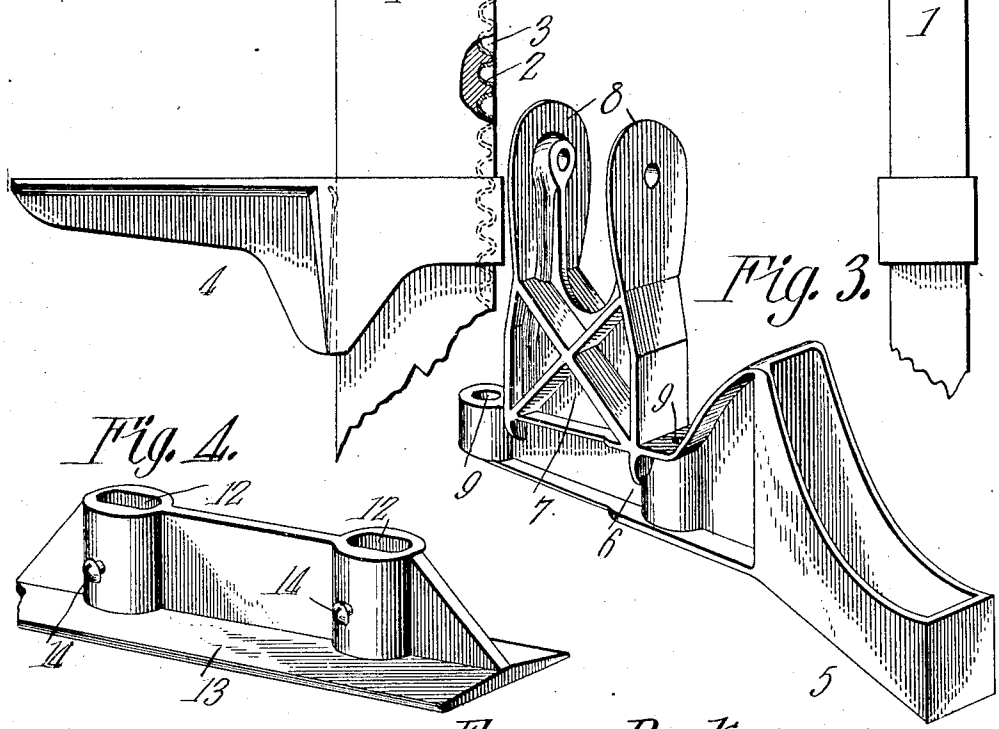

Fig. 4.

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2 SHEETS—SHEET 2.

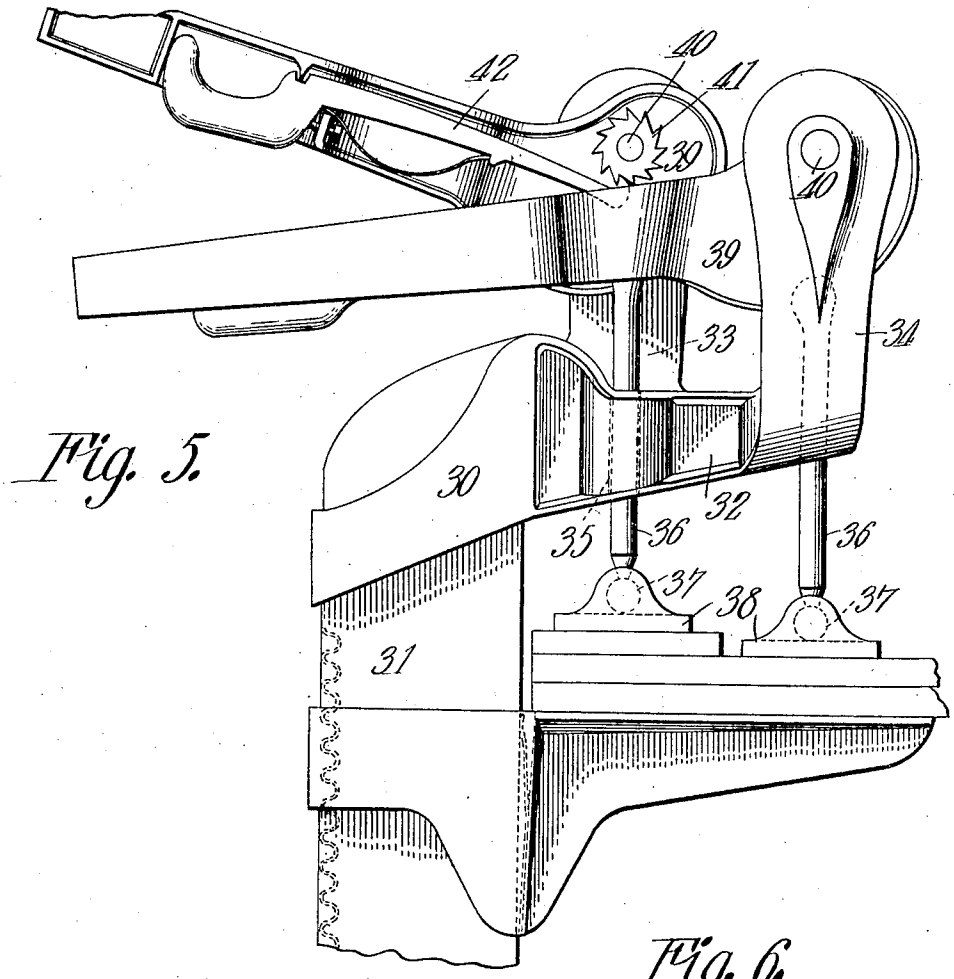
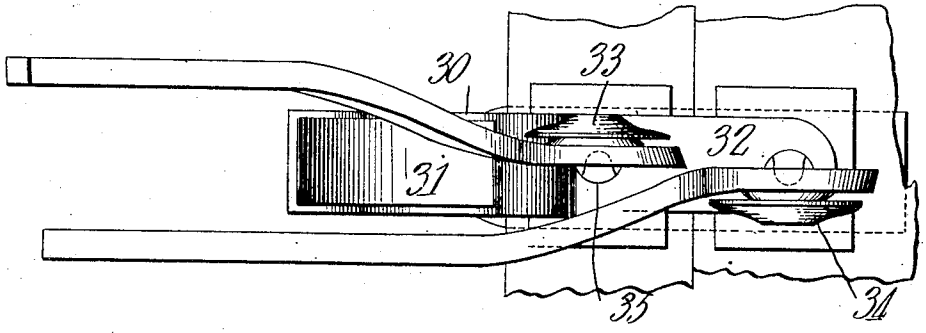


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

EUGENE BARKER, OF BATAVIA, NEW YORK.

GLUING-CLAMP.

No. 878,491. Specification of Letters Patent. Patented Feb. 11, 1908.

Application filed April 11, 1907. Serial No. 367,689.

To all whom it may concern:

Be it known that I, EUGENE BARKER, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented a new and useful Gluing-Clamp, of which the following is a specification.

This invention relates to gluing clamps and its object is to provide means whereby an object having an irregular or an inclined surface can be firmly clamped upon another object to which it is to be glued.

Heretofore it has been necessary to employ blocks and other spacing means between one of the jaws of a clamp and the irregular or inclined surface of the object to be clamped and these spacing devices have been found objectionable not only because of the time necessary to adjust them but also because it is practically impossible to get them of the proper proportions so that an even pressure will be exerted by the jaw against the object to be clamped. It has also been impossible to equally distribute pressure upon the jaw from its actuating means and therefore when an object is placed against the jaw and close to the bar of the clamp it does not receive the same degree of pressure which it would receive if placed close to the actuating means or adjacent the outer end of the jaw.

It is the object of the present invention to provide a jaw having means whereby the same will clamp as efficiently upon an object close to the bar as upon an object adjacent the outer end of the jaw.

It is also the object of the invention to provide means whereby the jaw can be moved to various angles and locked in any position to which it may be adjusted so as to evenly distribute pressure upon a clamped object of any contour and securely hold said object against displacement.

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 drawing is shown the preferred form of the invention.

In said drawings: Figure 1 is an elevation of the jaws of a clamp embodying the present improvements, only a portion of the bar being shown; Fig. 2 is an elevation of the clamp and looking in the direction of the arrow in Fig. 1, a portion of the guide arm being broken away; Fig. 3 is a detail view of the guide and supporting member of the clamp; Fig. 4 is a detail view of the jaw; Fig. 5 is an elevation of a modified form of clamp; and Fig. 6 is a plan view of the clamp shown in Fig. 5.

Referring to the figures by characters of reference, 1 designates the bar of the clamp, the same being preferably provided with rack teeth 2 formed of a transversely corrugated metallic strip inserted in a groove 3 in one face of the bar. A jaw 4 is loosely mounted upon the bar and is designed to engage the rack teeth so as to be held against movement when subjected to pressure.

Surrounding and secured to the bar is a collar 5 having an arm 6 extending therefrom and formed with an integral upstanding web 7 from which project arms 8. Guide openings 9 extend through the arm 6 at opposite sides of the web 7 and slidably mounted within each of these openings is a push bar 10 having a rounded enlarged head 11 at its lower end. The heads of the two push bars project into sockets 12 formed within a jaw 13 and these heads are loosely secured within the sockets by means of retaining screws 14 or in any other preferred manner. These screws permit the jaw 13 to change its angle to the push bars 10. It is of course to be understood that the heads 11 are of the same or less diameter than the push bars 10 so that said bars can be inserted into the arm 6.

Extending from each of the arms 8 is a stud 15 having a ratchet wheel 16 at the free or outer end thereof and pivotally mounted on each of these studs and between the ratchet wheel and the arms is a cam 17 formed with a flange 18 designed to work within a groove 19 formed in the enlarged upper end of one of the push bars 10. A handle 20 extends from each cam and fulcrumed therein is a locking lever 21 having a head 22 designed to engage the ratchet wheel. This head is held normally in engagement with the ratchet wheel by means of a spring 23. One end of the lever 21 extends beyond the handle as shown at 24 and forms a shoulder 25 which constitutes an abutment for an adjusting screw 26 mounted within an ear 27 extending inwardly from the flange 18. Lever 21 is fulcrumed upon a lug or projection 28 which projects loosely into a recess 29 in the lever.

It will be obvious by referring to the draw-

ings in connection with the foregoing description that the cams 17 can be independently actuated so as to cause the push bars connected thereto to move longitudinally within the openings 9. When either handle 20 is swung toward the bar 1 the pawl formed by head 22 will slip over the ratchet wheel 16 but will automatically engage said wheel so as to prevent movement of the handle in the opposite direction. By pushing the outwardly projecting portion 24 of the lever inwardly, however, the ratchet wheel can be released from the lever and the movement of the cam can be reversed. This movement of the lever can be produced by the same hand grasping the handle 20. It will be seen that as either end of the jaw 13 can be adjusted toward the jaw 4 said jaw 13 can be made to bear equally well upon a surface disposed perpendicularly to the bar 1 or inclined thereto. Also if a small object is placed between the jaws and close to the bar 1 the inner end of jaw 13 will bear as firmly and tightly thereagainst as if said object should be positioned between the outer ends of the jaws. The lever 21 has a slight longitudinal movement with respect to its fulcrum 28 so that should the head 22 be slightly removed from one of the teeth of the ratchet 16 when the proper movement of the cam has been accomplished said head can be shifted against the tooth by turning the screw 26 against shoulder 25. The cam will therefore be held absolutely against movement because all lost motion will thus be taken up and a very minute adjustment of the jaws against the work be secured.

In some work it is desirable to have the jaw rest upon two flat surfaces disposed in different planes and in order that this may be accomplished the construction shown in Figs. 5 and 6 has been devised. In this construction the jaw is made up of two separate sections instead of one section as shown in Figs. 1 and 2. It will be noted that the collar 30 which is secured to bar 31 has an arm 32 extending therefrom and formed with an inner upwardly extending arm 33 and an outer upwardly extending arm 34. Guide openings 35 are formed within the arm 32 to receive push bars 36 and each of these push bars is connected by a ball and socket joint 37 with a jaw 38 consisting of separate sections one section being attached to each push bar. The upper ends of the push bars engage cams 39 which are similar to the cams hereinbefore described and are pivotally mounted upon studs 40 extending from the arms 33 and 34. Each of these studs has a ratchet wheel 41 thereon designed to be engaged by a spring pressed locking lever 42. It will be noted that the two cams 39 are disposed in planes extending longitudinally of the jaws of the clamp whereas the cams 17 are disposed in planes extending at right angles to the jaws. It is to be understood that either arrangement of the cams may be used with either construction of clamp.

It is thought that the operation of the construction shown in Fig. 5 will be apparent. Either section of the jaw 38 can be locked at a desired elevation so that objects having their surfaces in different planes can be subjected to the same pressure at the same time.

It will be understood that in both constructions which have been described two separately movable cams are utilized for operating each clamping mechanism, although in one instance said mechanism includes but a one-piece jaw, whereas in the second construction the jaw is made up of two parts. It is to be understood therefore that by the term "jaw" it is intended to cover both the single jaw shown in Figs. 1 and 4 and the two-part jaw disclosed in Fig. 5.

What is claimed is:

1. The combination with a bar, a supporting arm outstanding therefrom, and upstanding arms upon the supporting arms; of push bars guided within and extending through the supporting arm, a jaw having spaced sockets, said push bars being pivotally mounted within the respective sockets, actuating cams pivotally connected to the upstanding arms, said cams engaging and disposed to actuate the push bars in either direction, said cams being disposed in parallel planes.

2. The combination with a bar, and a tiltable jaw movable longitudinally of the bar; of an arm outstanding from the bar, push bars slidably mounted within the arm and pivotally connected to opposite portions of the jaw, and means carried by the arm for independently actuating the push bars in either direction to shift the jaw.

3. The combination with a support; of a cam carried thereby, a ratchet fixedly secured adjacent the cam, a locking lever carried by the cam and disposed to engage the ratchet, means carried by the cam for adjusting the locking lever upon its fulcrum, and a jaw connected to and disposed to be actuated by the cam.

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

EUGENE BARKER.

Witnesses:
E. HUME TALBERT,
HERBERT D. LAWSON.