(No Model.)

M. E. CROWELL.

CLAMP BRACKET.

No. 588,401. Patented Aug. 17, 1897.

FIG. 1.

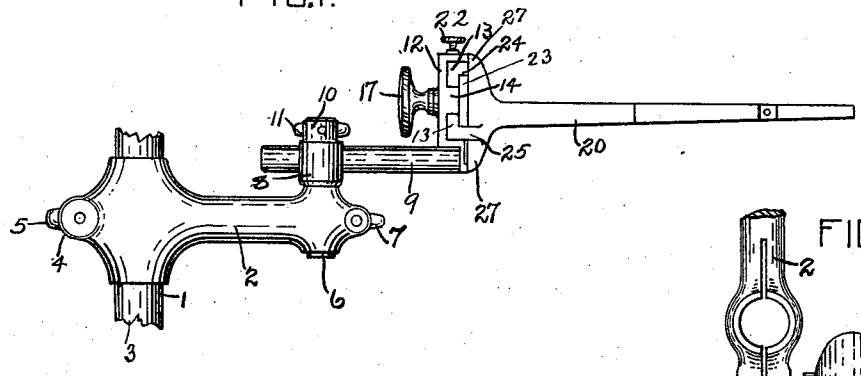


FIG. 4.

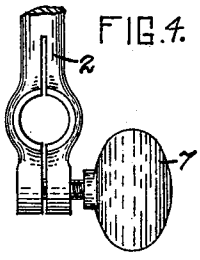


FIG. 2.

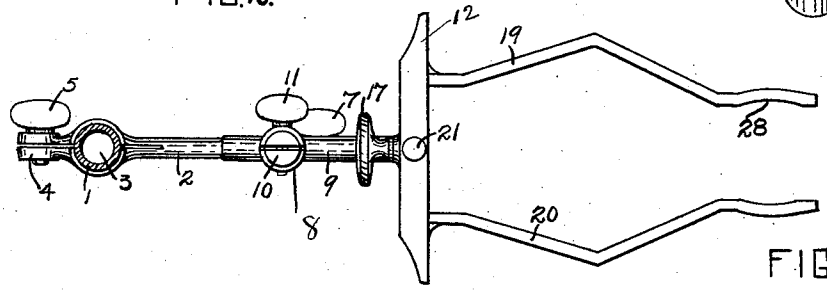


FIG. 5.

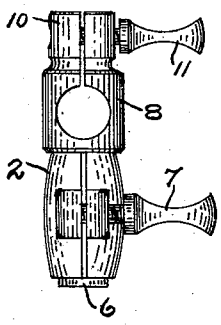
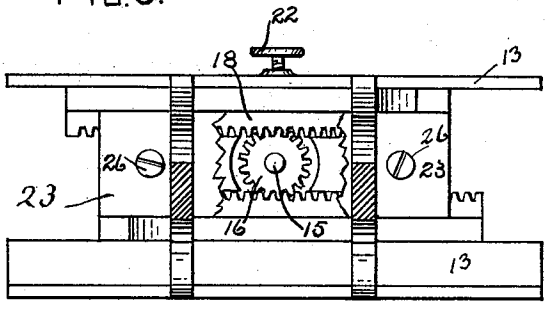


FIG. 3.



WITNESSES:

H. A. Beck

Zula Green

INVENTOR

Melvin E. Crowell

BY

V. H. Lockwood

His ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MELVIN E. CROWELL, OF INDIANAPOLIS, INDIANA.

CLAMP-BRACKET.

SPECIFICATION forming part of Letters Patent No. 588,401, dated August 17, 1897.

Application filed October 7, 1896. Serial No. 608,168. (No model.)

To all whom it may concern:

Be it known that I, MELVIN E. CROWELL, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Clamp-Bracket; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like figures refer to like parts.

My invention relates to a clamp-bracket consisting of such a combination of parts and the various parts so formed as to enable the bracket to be moved and held in almost any desired position and the distance between the jaws of the bracket to be quickly and conveniently adjusted and when adjusted all parts of the device to be securely held in place. The use to which I have applied this device has been the holding of various kinds of apparatus in a physical laboratory.

The full nature of my invention will appear from the accompanying drawings and the description and claims following.

In the drawings, Figure 1 is a side elevation of my bracket in a straight horizontal position. Fig. 2 is a plan view of it in the same position. Fig. 3 is a front elevation of the means for adjusting the arms of the bracket, such arms and also a portion of the face-plate being broken away. Fig. 4 is a plan view of the free end of the clamping-arm. Fig. 5 is a front elevation of the means for supporting the clamping-bracket, the bracket not being shown.

In detail, 1 is a vertical metallic rod, secured in any suitable manner. While it is shown here in the vertical position, obviously the clamp-bracket may be attached to a rod in any desired position. A clamping-arm 2 is secured to such rod 1 by an integral clamp, made in the following form: The clamping-arm is split vertically from its rear end to the opening 3, in which the rod 1 is received, and also to a point somewhat beyond such opening 3, thereby forming on the rear of such arm 2 a pair of clamping-jaws 4. When the clamping-arm 2 is inserted over the rod 1, the pair of clamping-jaws are drawn together by the clamping-screw 5, which extends loosely through one of the jaws 4 and is screwed into the other one. By this construction it is obvious that the pair of jaws 4 cannot spring very far from each other, just far enough to permit the clamping-arm 2 to be removed from the rod 1. The advantage of this arrangement is that the arm 2 can be clamped tightly to the rod 1 with less than a single turn of the clamping-screw 5, which is of great importance in the quick manipulation of apparatus, especially in the laboratory and lecture-room. The other end of the clamping-arm 2 is formed similar to that of the end which has just been described, only, as herein shown, it is of smaller dimensions. It is provided with an aperture (similar to aperture 3) that receives the bolt 6, and the free ends, being thus divided into a pair of jaws like the jaws 4, are clamped by the clamping-screw 7, which operates in the same way as the clamping-screw 5. The clamp at this end of the clamping-arm 2 therefore can be operated by less than one turn of the clamping-screw and released by less than one turn thereof, so that the bolt 6 may be removed.

The bolt 6 has a body 8 with a horizontal opening to receive the shank 9 of the bracket. The shank 9 is round, and likewise the opening that receives it. From this opening in the body 8 of the bolt 6 the head 10 of the bolt is split, like the two ends of the clamping-arms 2, and in the same manner forms a pair of clamping-jaws, which are clamped on the bracket-shank 9 by the clamping-screw 11.

Secured to the bracket-shank 9 is a bracket-frame 12, provided with two parallel guideways 13, which are separated by a central rib 14. Extending centrally through the bracket-frame 12 there is a rotatable pin 15, carrying on its front end a small pinion 16 and on its rear end a finger wheel or disk 17, whereby the pinion 16 is actuated. The central rib 14 is centrally cut out, as shown in Fig. 3, to provide a recess in which such pinion may be placed. The diameter of the pinion is somewhat greater than the width of such rib. Above and below the rib in the guideways 13 are placed a pair of racks 18, that are engaged by the pinion. On one end of the upper rack is secured the clamp-arm 19, and on the opposite end of the other rack the clamp-arm 20 is secured, as seen at 25 in Fig. 1. It is obvious that when the pinion 16 is rotated in one direction these clamping-arms will be moved by the racks and pinion toward each

other, and when such pinion is rotated in the opposite direction they will be moved apart.

In the upper portion of the bracket-frame 12 I provide an aperture 21, that is threaded to receive the clamping-screw 22, which when turned down engages the upper surface of the rack 18 and prevents the further operation of the racks and pinion. This will hold the bracket-arms in any desired position. The racks are held in the guideways by the face-plate 23, whose lateral edges fit into the longitudinal grooves made in the rack at 24. The plate is secured to the bracket-frame by the screws 26, that enter the central rib 14.

The arms have at their inner ends a pair of extensions 27, that extend in opposite directions and are in sliding engagement with the upper and lower portions of the bracket-frame 12. This gives additional strength to the arms and regularity in movement. The bracket-arms 19 and 20 are curved in directions opposite each other in series, as shown in Fig. 2, where there is seen a large curve or lateral bend to receive and hold large instruments and devices and also a small curve or bend 28 near the free ends of the arms that will grasp very small articles. This series of oppositely-posed curves may be increased in number as desired.

It will be seen from this description that the clamps can be altered from an engaging to a non-engaging position, or vice versa, by less than one turn of the clamping-screws, the parts or jaws being so formed that they can be separated but slightly. It is also obvious that the bracket-arms, by reason of the peculiar arrangement and combination of the racks and pinion, may be very quickly adjusted, as both arms move simultaneously away from or toward each other, also, when the bracket-arms have been adjusted in any desired position the clamp-screw on top of the device enables the operator to easily and quickly clamp them from further movement.

By reason of the peculiar conformation of the clamping-arms and their bracing by the extensions 27 they can receive small or large articles and hold them without danger of the article being too loosely grasped or the bracket-arms being too weak to support the article.

Attention is also called to the fact that the clamping-bracket may be moved into almost any desired position. For example, the bracket may be clamped so that the arms are on the same level or be so clamped that one will be above the other or be fixed in an inclined position with relation to each other. This is effected by turning the bracket-shank 9 in its clamp until the arms have assumed the desired position and then tightening the clamp. By means of the bolt 6 the bracket may be swung about on the clamping-arm 2 until the bracket engages the rod 1; and, furthermore, the clamping-arm 2 may be turned about on the rod 1 in any desired position, so that the clamping-arms as well as the bracket-arms may be turned and adjusted in any desired position, and it may be done very quickly.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A bracket comprising a frame provided with a pair of parallel guideways, a rack movable in each of such guideways, bracket-arms secured to such racks at their opposite ends, and a pinion mounted in the bracket-frame in engagement with such racks.

2. A bracket comprising a suitable frame, racks slidably mounted in opposite portions of such frame, a pinion mounted in the frame that engages the rack on either side, and a bracket-arm secured at one end of one rack and another at the opposite end of the other rack, such bracket-arms having bracing extensions at their bases that engage the opposite sides of the frame.

3. A bracket comprising a suitable frame, racks slidably mounted in opposite portions of such frame, a pinion mounted in the frame between the racks so as to engage them on either side, arms secured to such racks at their opposite ends, and a set-screw mounted in the frame that engages one of said racks whereby the racks and pinion may be locked.

In witness whereof I have hereunto set my hand this 1st day of October, 1896.

MELVIN E. CROWELL.

Witnesses:
V. H. LOCKWOOD,
SHERMAN MOTT.