I. A. ROMMER.

ADJUSTABLE AND QUICK ACTING CLAMP.

APPLICATION FILED MAY 19, 1910.

972,253. Patented Oct. 11, 1910.

Fig. 1

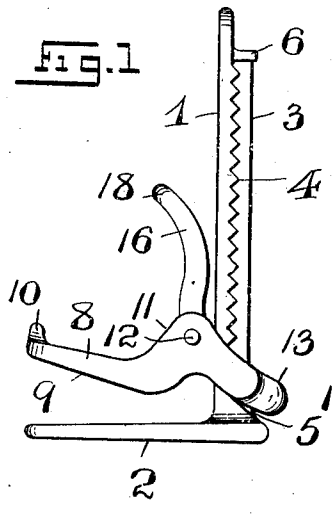


Fig. 3

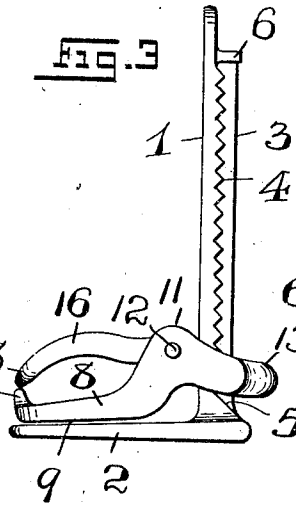


Fig. 5

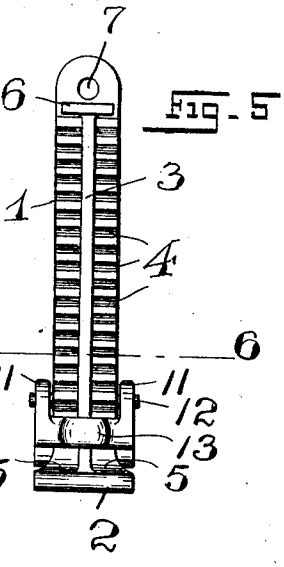


Fig. 2

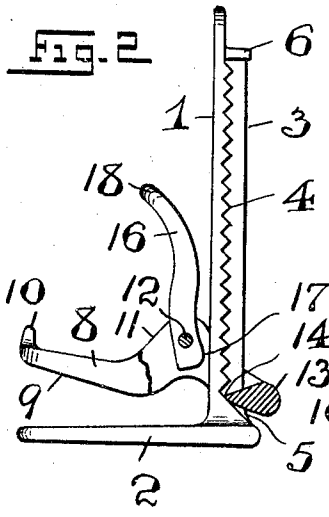


Fig. 4

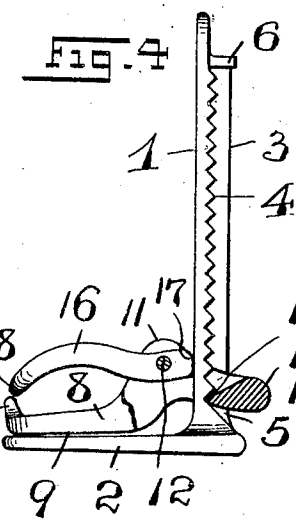


Fig. 7

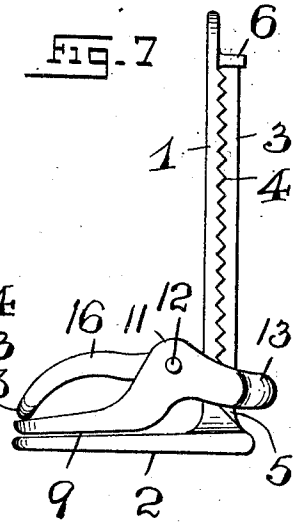
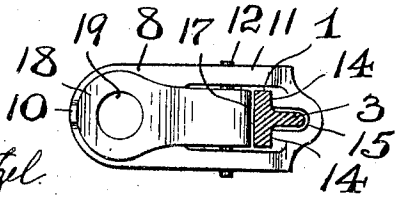


Fig. 6



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UNITED STATES PATENT OFFICE.

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ADJUSTABLE AND QUICK-ACTING CLAMP.

972,253. Specification of Letters Patent. **Patented Oct. 11, 1910.**

Application filed May 19, 1910. Serial No. 562,327.

To all whom it may concern:

Be it known that I, ISAAC A. ROMMER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Adjustable and Quick-Acting Clamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

This invention relates, generally, to adjustable and quick-acting clamps; and, the present invention has reference, more particularly, to that class of clamping devices wherein the clamping action is produced by means of a clamping jaw having a cam-like action.

The present invention has for its principal object to provide a novel and simply constructed device of the general character hereinafter more particularly set forth, the device being constructed on such lines so as to readily provide a self-supporting, adjustable, quick-acting, and positive clamp, which is adapted for use more particularly upon yielding materials, such as layers of paper or woven fabrics, and to be used mostly in workshops and factories, where a large quantity of such above-mentioned materials or fabrics are handled.

Other objects of this invention not at this time more particularly enumerated will be clearly understood from the following detailed description of the present invention.

With the various objects of the present invention in view, the said invention consists, primarily, in the novel adjustable and quick-acting clamp hereinafter set forth; and, the invention consists, furthermore, in the novel arrangements and combinations of the various devices and parts, as well as in the details of the construction of the same, all of which will be more particularly described in the following specification, and then finally embodied in the clauses of the claim which are appended to and which form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a clamping device, showing one embodiment of the principles of the present invention, with the clamping jaws or members thereof represented in their open relation; and Fig. 2 is a similar view of the same device, with the front arm of one of the clamping jaws shown broken away. Fig. 3 is a side elevation of the clamping device, with the clamping jaws or members of the device represented in their clamped or closed relation; and Fig. 4 is a similar view of the parts represented in said Fig. 3, but showing the front arm of one of the clamping jaws broken away. Fig. 5 is a rear end view of the clamp; and Fig. 6 is a horizontal sectional representation of the said clamp, said section being taken on line 6—6 in said Fig. 5. Fig. 7 is a side elevation of a clamp of a slightly modified construction, with the clamping jaws or members of the same represented in their clamped or closed relation.

Similar characters of reference are employed in all of the above described views, to indicate corresponding parts.

Referring now to the several figures of the drawings, the reference-character 1 indicates an upright or standard, which is preferably T-shaped in cross-section, said upright or standard being preferably integrally formed with a base 2, said base forming a lower clamping jaw, as will hereinafter more fully appear. Upon the rear of said upright or standard, and on both sides of a rib 3 with which said upright or standard is provided, are suitably formed teeth or serrations 4, said teeth or serrations being formed at right angles to the said rib. At the lower end of said rib, and upon each side thereof, is an inclined surface, as 5, each inclined surface 5 forming a continuation of the last tooth, as will be clearly evident from an inspection of Figs. 2 and 4 of the drawings. The upper end-portion of the rib 3 is also formed with a member 6, providing projections or extensions upon the opposite sides of the rib, said projections or extensions providing suitable stops, as will be understood. The upright or standard 1 may also be provided in its upper portion above said member 6 with a suitably shaped hole or perforation 7. Loosely mounted upon said upright or standard 1, and slidably arranged therein between said mem-

ber 6 and the said base 2 is a sliding bracket 8, said bracket consisting, essentially, of a flat clamping part 9, and two arms 11, said arms carrying a stud or pintle 12, and the said arms also extending toward and being arranged so as to embrace the said upright or standard 1. The said arms 11 are connected at their rear end-portions, beyond the said upright or standard 1, by means of a cross-bar or bridge 13, having its inwardly disposed surface formed with a sharp marginal edge-portion, in the form of a knife-edge 14 and provided with a recess, as 15, all arranged to provide a suitably formed opening wherein the said standard or upright 1 is inserted and arranged in substantially the manner illustrated more particularly in Fig. 6 of the drawings. In the said bracket 8, and pivotally mounted upon the said stud or pintle 12, is a curved cam-lever 16, said lever having upon one end an eccentric cam-like portion 17, and its other end-portion terminating, preferably, in a downwardly curved end 18. The said cam-lever may also be provided with a suitably formed hole or opening, as 19.

As shown more particularly in Figs. 1, 2, 3, 4 and 6 of the drawings, the clamping part 9 may be provided upon its extremity with an upwardly projecting extension or tooth-like projection 10; but, it will be understood, however, that this extension or projection 10 may be dispensed with, if desired, in which case the several parts of the device are made in the manner indicated in Fig. 7 of the drawings.

Having in the foregoing in a way described the general arrangement and construction of the several devices and parts comprising one embodiment of clamp made according to the principles of the present invention, I will now briefly set fortl. its operation.

The clamp is designed to be operated while standing upon a work-bench or table, and the parts thereof are worked preferably in the following manner:—The lever 16 is raised with the forefinger, while with the thumb and the middle finger the arms 11 are grasped, the parts being raised upon the standard or upright 1, sufficiently high, as may be required, to insert or place the quantity or pile of material which is to be compressed directly between the upper face of the base 2 and the lower face of the flat clamping arm 9. After the material or goods have thus been inserted between these parts, a downward pressure is exerted upon the arms 11, with the same fingers that were upholding them, which will produce whatever pressure may be desired for the particular kind of work on hand, and thereupon a slight depression of the cam-lever 16 will cause its cam-shaped portions 17 to come in contact with the flat surface of the upright or standard 1, and cause the previously mentioned knife-edges to enter the nearest depression between the serrations or teeth 4. As the downward pressure is continued, the cam owing to its eccentricity will cause the free end of the part 8 to descend for a limited distance with great force; and, as the end 18 of the lever 16 is brought down upon the projection or extension 10, as in the construction represented in Figs. 1 to 6 inclusive, or upon the upper surface-portion of the part 9, as shown in Fig. 7 of the drawings, the clamp will become positively locked, as will be clearly evident.

The operations and functions of the several parts of the clamp become self-evident from the foregoing description of the device. It may be further stated, that the broad base 2 lends stability to the device; its slight vertical taper facilitating the insertion of the base under the mass or pile of fabric-material which is to be compressed. Furthermore, the rib 3 is for the purpose of giving the requisite strength to the upright or standard 1; the teeth 4 are for the purpose of locking the sliding bracket at any desired height above the base 2; the inclined surface 5 is for the purpose of limiting the downward travel of the knife-edges, and thus preventing injury to the clamp from excessive pressure of metal against metal; and, the member 6 forming the previously mentioned stops limits the upward travel of the sliding parts, so as to prevent the accidental separation of the parts of the clamp. Furthermore, the tooth or projection 10, when the same is used, by coming in contact with the end 18 of the lever 16, prevents a premature opening of the clamp by some of the loose material that might enter into that space. The recess 15 in the bridge 13 provides a sufficient clearance space for the rib 3, and the hole or opening 19 in the lever 16, as well as the hole or perforation 7 in the upright or standard 1, facilitates the handling of these parts in large quantities by enabling the workman to string many parts upon a wire when such parts are to be galvanized or japanned. It will also be evident that the entire device may be made of any suitable metal, usually cast iron, so as to insure simple and strong construction.

I am aware that some changes may be made in the general arrangements and combinations of the various devices and parts, as well as in the details of the constructions of the said parts, without departing from the scope of the present invention as set forth in the foregoing specification and as defined in the clauses of the claim which are appended thereto. Hence, I do not limit the present invention to the exact arrangements and combinations of the devices and parts as described in the said specification, nor do I con-

fine myself to the exact details of the construction of the said parts as illustrated in the accompanying drawings.

I claim:—

1. An adjustable quick-acting clamp comprising a self-supporting standard, said standard being formed with a rib so as to provide a standard which is T-shaped in cross-section, a multiplicity of teeth extending from said standard upon the opposite sides of said rib, a lower clamping jaw integral with said standard, a sliding bracket, said bracket being formed with an open portion, and a cam-lever pivotally mounted in the open portion of said bracket for forcibly depressing the free end of said sliding bracket in the manner described and for the purposes set forth.

2. An adjustable quick-acting clamp comprising a self-supporting standard, said standard being formed with a rib so as to provide a standard which is T-shaped in cross-section, a multiplicity of teeth extending from said standard upon the opposite sides of said rib, a lower clamping jaw integral with said standard, said jaw forming a base, a sliding jaw-like bracket provided with arms arranged to embrace said standard, the ends of said arms being connected by a bridge formed with inwardly disposed knife-edges, and a cam-lever pivotally mounted between said arms, substantially as and for the purposes set forth.

3. A device of the character described comprising a self supporting upright standard, said standard being formed with a rib so as to provide a standard which is T-shaped in cross-section, a base extending from said standard and forming an integral part thereof, said base forming a lower clamping jaw, a multiplicity of teeth extending from said standard on opposite sides of said rib, a sliding bracket, means at both ends of the rib of said standard for limiting the travel of said sliding bracket, said bracket having a flat clamping portion, a tooth-like projection upon the end of said flat clamping portion, and said bracket being formed with two arms arranged to embrace said upright standard, a bridge connecting the said arms, said bridge having inwardly disposed knife-edges, a cam-lever pivotally mounted between said arms, said cam-lever having a cam-shaped portion disposed toward the upright standard and arranged to operate against the flat surface of said standard, and the said cam-lever having a downwardly curved portion adapted to be brought into engagement with the tooth-like projection of said flat clamping portion, substantially as and for the purposes set forth.

4. An adjustable quick-acting clamp comprising a self-supporting standard, said standard being formed with a rib so as to provide a standard which is T-shaped in cross-section, a multiplicity of teeth extending from said standard upon the opposite sides of said rib, a lower clamping jaw integral with said standard, a sliding bracket, said bracket being formed with an open portion, and a cam-lever pivotally mounted in the open portion of said bracket for forcibly depressing the free end of said sliding bracket in the manner described, and means at both ends of the rib of said standard for limiting the travel of said sliding bracket.

5. An adjustable quick-acting clamp comprising a self-supporting standard, said standard being formed with a rib so as to provide a standard which is T-shaped in cross-section, a multiplicity of teeth extending from said standard upon the opposite sides of said rib, a lower clamping jaw integral with said standard, said jaw forming a base, a sliding jaw-like bracket provided with arms arranged to embrace said standard, the ends of said arms being connected by a bridge formed with inwardly disposed knife-edges, a cam-lever pivotally mounted between said arms, and means at both ends of the rib of said standard for limiting the travel of said sliding bracket.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 14th day of May 1910.

ISAAC A. ROMMER.

Witnesses:
A. W. HEISER,
W. H. CHAPIN.