

(No Model.)

H. KELLS.
CLAMP.

No. 420,236.

Patented Jan. 28, 1890.

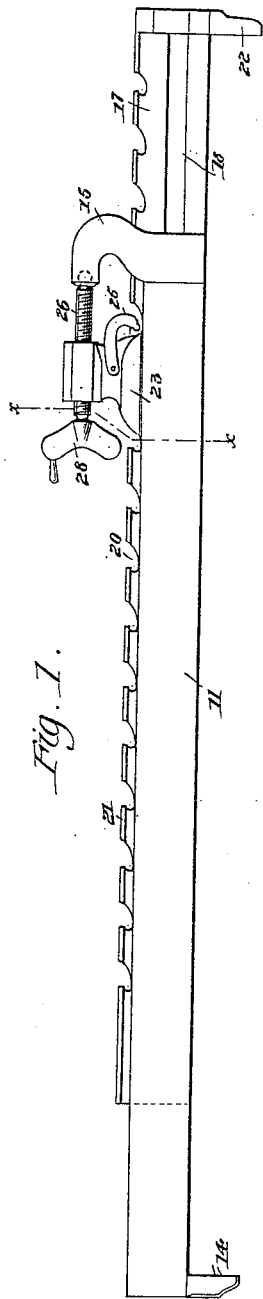


Fig. 1.

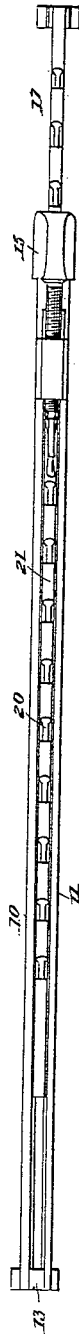


Fig. 2.

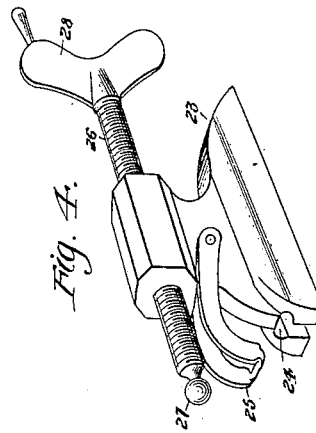


Fig. 3.

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HERBERT KELLS, OF ASTORIA, NEW YORK.

CLAMP.

SPECIFICATION forming part of Letters Patent No. 420,236, dated January 28, 1890.

Application filed July 3, 1889. Serial No. 316,424. (No model.)

To all whom it may concern:

Be it known that I, HERBERT KELLS, of Astoria, in the county of Queens and State of New York, have invented a new and useful
5 Improvement in Clamps, of which the following is a full, clear, and exact description.

My invention relates to an improvement in clamps, and has for its object to provide an extension-clamp especially adapted for use in
10 connection with articles to be glued, cemented, or otherwise attached, and for other purposes requiring the several parts of an article to be bound together.

A further object of the invention is to provide a clamp of light simple construction, convenient of transportation, having no projecting ends, and which may be extended to clamp work at least as wide again as its normal length.

Another object of the invention is to provide a clamp in which the strain will be equalized by exerting power upon one longitudinal side upon pressure against the opposed side, and also to provide a clamp having a perfectly-straight contact-surface, whereby in panel-work or work of similar character the extra piece of wood or metal usually employed in connection with the old form of clamp to true up the work is dispensed with.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the clamp partially extended. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section on line *xx* of Fig. 1, and Fig. 4 is a perspective view of the traveling head.

In carrying out the invention, the body of the clamp consists of two spaced side pieces 10 and 11, united at one end by a block 13, which is made to project vertically downward and is widened beneath the lower edge of the body to form an end bearing-surface 14, as illustrated in Figs. 1 and 3. The ends of the side pieces at the opposite end of the clamp are braced and united by a fixed head-block 15, the upper end of which block is curved in

the direction of the extremity of the body of the clamp carrying the bearing-block 14, as illustrated in Fig. 1, and the lower portion of the said block is bifurcated, the members thus formed being rigidly secured to the outer faces of the said side pieces 10 and 11. In forming the side pieces 10 and 11 of the body a longitudinal rib 16 is produced at or near the center of their inner faces, as best illustrated in Fig. 3. The inner or sliding section 17 of the clamp consists of a strip of wood or metal of slightly greater width than the side pieces of the body, and in the sides of the sliding section 17 a longitudinal groove 18 is formed, in which grooves the ribs 16 of the body-section slide when the inner section is slid into the said body-section, as is likewise illustrated in Fig. 3.

In each side of the inner or sliding section 17, near its top, a narrow groove 19 is produced, and in the upper edge of this sliding section a series of curved recesses 20 are formed, producing virtually a series of teeth 21, which teeth are T-shaped in cross-section. At the outer end of the sliding section 17 a bearing-block 22 is secured, corresponding in contour with the bearing-block 14 of the body-section, and being in longitudinal alignment therewith. The central grooves are formed in the sliding section 17 and the ribs 16 upon the side pieces of the main section, in order that the under surface of the inner section may be carried down perfectly flush with the under surface of the body-section, and both the under surface of the body and the inner section are made as true as possible, so that they will form a perfect guide when the clamp is in use.

The sliding head-block 23 is adapted for use in connection with the teeth 21 of the inner section, which head is illustrated in detail in Fig. 4. The under surface of the head, which is sufficiently wide to travel upon the upper edge of the side pieces of the body-section of the clamp, is provided with an essentially T-shaped longitudinal slot 24, adapted to receive the teeth 21 of the inner clamp-section, the said teeth serving as a guide for the head 23 in its travel from end to end of the clamp.

Upon the head 23, at that end facing the fixed head 15, an essentially U-shaped latch

25 is pivoted, the bowed end of which latch is curved downward to enter the recesses 20 between the teeth 21. The recesses 20 are each undercut at one side wall, the opposite side wall being beveled or downwardly curved. Thus when the latch enters the undercut portion of the recesses 20 it is prevented from riding upward above the teeth. In the upper surface of the head a straining device 26 is located, which straining device may consist of a cam-faced lever, or any device capable of bearing against the upper surface of the fixed head 15 to force the sliding head therefrom when the latch has been engaged with one of the recesses 20.

In the drawings the straining device employed consists of a screw having a ball 27 formed at one end, capable of entering a recess or cavity in the upper end of the fixed head, as shown in Fig. 1, and provided at its opposite extremity with a winged head 28, whereby the screw may be readily revolved.

In operation, when the two sections have been drawn apart a sufficient distance to permit the bearing-blocks 14 and 22 integral therewith to engage with the outer edges of the work to be clamped, the latch 25 is lifted and the head 23 is slid forward in the direction of the fixed head 15 until the latch will have engaged with the undercut portion of the recess 20 nearest to the said fixed head. When the latch is thus engaged, the screw 26 is turned until the ball 27 has entered the socket in the fixed head, and the screw is then further turned, thus exerting a tension in opposite directions upon the body-section of the clamp through the medium of the fixed head and upon the inner section through the medium of the latch and sliding head. By this means the outer bearing-blocks 14 and 22 are made to bear firmly and securely upon the work, and when sufficient tension has been exerted upon the latter the revolution of the screw is discontinued.

I desire it to be distinctly understood that I do not confine myself to any particular material in the construction of the clamp. Metal, however, is preferred. Nor do I confine myself, as heretofore stated, to a screw for forcing the sliding head from the fixed head when the former has been engaged with the inner section.

It will be observed that the device may be made very light, since the strain thereon is equalized as power is exerted upon one side against the pressure brought to bear upon the opposite side.

It will be further observed that as one section is capable of being slid into the other section the clamp is rendered very convenient to carry, and but little material projects beyond the extremities of the several sections.

This is a very important feature, as it often becomes necessary to produce a hole or aperture or to do other work upon the material clamped very close to the point where the pressure of the clamp is applied. This is very

difficult to perform when the ordinary clamp is employed; but when the clamp above described is used any bit may be used close to the clamp, even though that bit be placed in a bit-stock. Again, in panel-work it is often necessary that the work should be glued or cemented perfectly straight. With the old form of clamp it is usual to use an extra bar or strip having a straight edge to contact with the work which is clamped thereto. The use of this extra bar or strip is dispensed with when my clamp is employed, as it matters not how far the sections may be drawn apart, the inner or contacting face of the clamp is always perfectly straight, and a hand-screw may be placed upon the clamp at any time, if so desired.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A clamp comprising a body portion, a sliding section working in the body portion, a movable head resting upon the body portion and engaging the sliding section, and a straining device carried by the movable head and engaging the body portion, substantially as described.

2. The combination, with a clamp provided with an inner sliding section, of teeth formed upon the inner section, a fixed head attached to one end of the outer section, a latch-carrying head adapted to travel upon the teeth of the sliding section, and a straining device carried by the sliding head adapted for contact with the fixed head, substantially as and for the purpose specified.

3. As an improved article of manufacture, a clamp comprising a body-section and an inner section capable of sliding in the body-section, a bearing-block secured to each outer end of the inner section and the body-section, the under surface of the inner section being flush with the under surface of the body-section, and the said under surfaces being straight, substantially as shown and described.

4. In a clamp, the combination, with a body-section, an inner section held to slide in the body-section, a bearing-block secured to the outer end of each section, and teeth produced upon the upper longitudinal surface of the inner section separated by recesses having one undercut wall, of a head fixed to the end of the body-section opposite to that having the bearing-block secured thereto, a head held to slide upon the teeth of the inner section and the upper edge of the body-section, a downwardly-curved latch pivoted to the sliding head capable of contact with the undercut wall of the said recesses, and a straining device carried by the sliding head capable of contact with the fixed head, substantially as and for the purpose specified.

5. In a clamp, the combination, with a body-section comprising two spaced side pieces, each having a longitudinal rib formed upon its inner face, a second section held to slide

between the side pieces of the body-section, provided upon each side with a longitudinal groove adapted to receive the ribs of the body-section, and a bearing-block secured to
5 each outer extremity of each section, of a series of teeth produced upon the upper edge of the inner section having one undercut end wall, a fixed head attached to the end of the body-section opposed to that carrying the
10 bearing-block, a second head slotted to slide upon the teeth of the inner section, a latch

pivoted to the sliding head, essentially U-shaped and having its outer end downwardly curved for contact with the undercut wall of the recesses, and a straining device attached 15 to the sliding head capable of contact with the fixed head, all combined for operation substantially as shown and described.

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Witnesses:

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