(No Model.) 2 Sheets—Sheet 1.

J. FRIST.

MECHANICAL MOVEMENT.

No. 334,699. Patented Jan. 19, 1886.

Fig. 1.

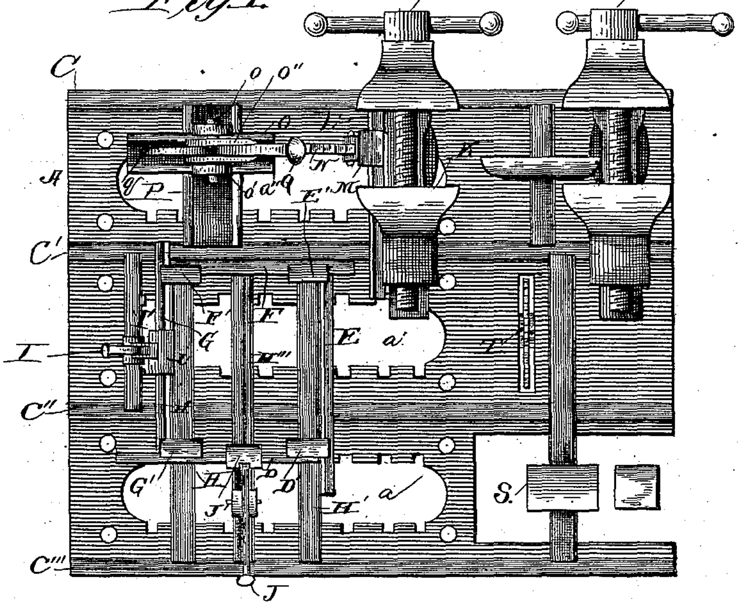
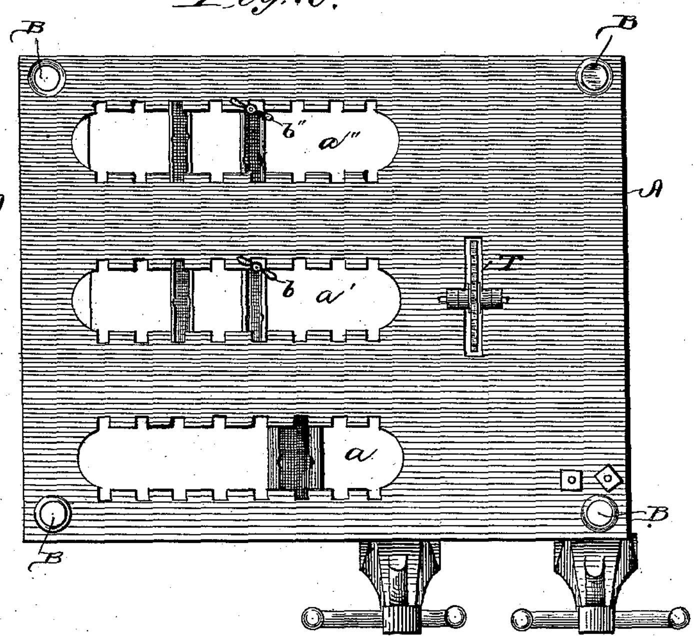


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

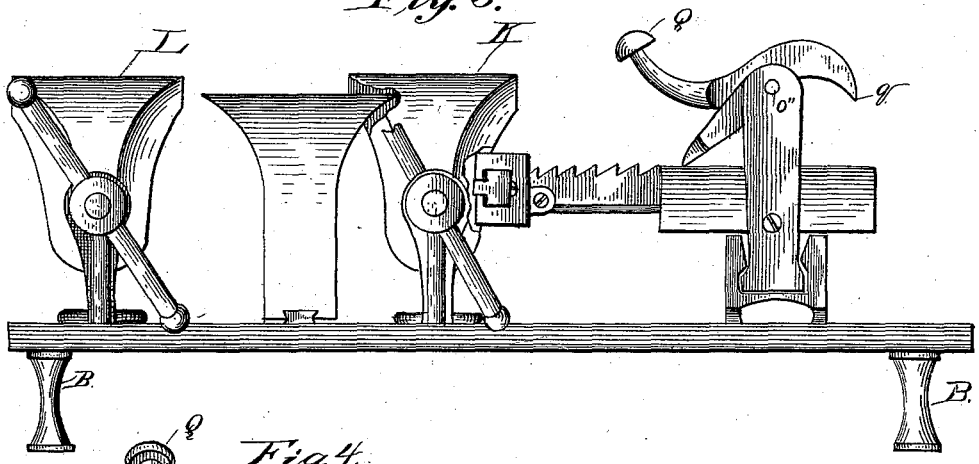


Fig. 4.

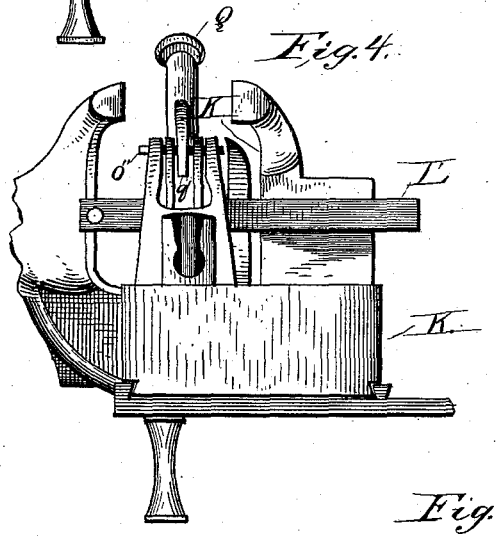


Fig. 6.

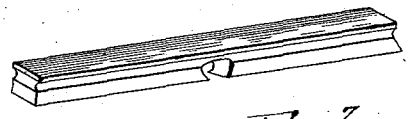


Fig. 7.

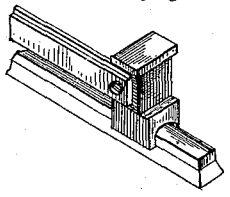
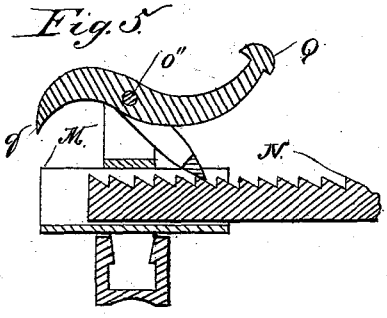


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES FRIST, OF BALTIMORE, MARYLAND.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 334,699, dated January 19, 1886.

Application filed October 31, 1885. Serial No. 181,682. (No model.)

To all whom it may concern:

Be it known that I, JAMES FRIST, of Baltimore city, and State of Maryland, have invented certain new and useful Improvements in Mechanical Movements; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 the letters of reference marked thereon, which form part of this specification.

My invention is in the nature of a mechanical movement which may form a component part of many machines and devices in general use—such as clamps, vises, presses for hay, cotton, &c., and many others—which will improve said devices by increasing their capacity, rendering them more readily operative, and adapting them to a much greater range of usefulness than has been possible heretofore; and with these ends in view my invention consists in the improved construction, arrangement, and combination of parts, as will be hereinafter fully and accurately described, and the specific points of novelty in which will be pointed out in the claims annexed to and forming part of this specification.

In the accompanying drawings, Figure 1 is a top plan view of a device which I have constructed by which to illustrate my invention in several of its modes of application to machinery now in use. Fig. 2 is a bottom plan view of the same. Fig. 3 is an end elevation of the same device, parts thereof being omitted to render the drawings clear and prevent confusion of lines therein. Fig. 4 is a partial end elevation of the same, looking from the left of Fig. 1. Fig. 5 is a partial section through the device, taken through the left-hand upper portion of Fig. 1 on line *x;* and Figs. 6 and 7 are detail views.

Like letters of reference mark the same parts wherever they occur in the different figures.

Referring to the drawings by letters, A is a plate or base-piece of metal, upon which all the various devices by which I illustrate the application of my invention are supported, and which itself is, by way of convenience, mounted on legs B, of any ordinary and well-known construction, and in any suitable number or location.

C C′ C″ C‴ are ribs, dovetailed, T-headed, or similarly formed with plate A, and located longitudinally on the upper surface thereof.

D, E, F, and G are bars placed in relation to each other as the four sides of a rectangle, each of which is shaped in cross-section as a dovetail, and has at one end a block secured to it, such blocks being marked D′, E′, F′, and G′, each of which is provided with a dovetail groove on one side, in which engages and slides at right angles to each adjacent dovetail-shaped bar D E F G, respectively, (see Fig. 7,) the bar E sliding in block D′ on bar D, and at right angles thereto, the bar F in block E′ on bar E, the bar G in block F′ on bar F, and the bar D in block G′ on bar G. These blocks have also dovetail grooves in their bottoms, (see Fig. 7,) which fit over and slide on dovetail bars H H′, (see Fig. 6,) which in their turn have transverse dovetail grooves in their under sides to fit over and slide on the dovetail rib C″ on plate A, while each end of the bars H H′ is shaped to fit under and engage the side of the ribs C′ C‴ on said plate. The plate A is provided with openings *a a′ a″*, whose edges are notched, for the purpose of receiving clamp thumb-screws *b b′*, which pass up into the bottom of bar H′, whereby it may be rigidly secured in position, when desired, by turning up said clamp-screws. It will thus be seen that the bars D, E, F, and G may be caused to approach each other, or a central point between them, by any suitable power. Examples of such power may be seen at I and J. The first of these, I, is a lever mounted on a fulcrum-block, I′, secured by a link, *i*, to a dovetail block, *i′*, on bar G, and having in its under side a dovetail groove fitting a dovetail bar, H″, located at right angles to and reaching from ribs C′ to C″ on plate A. The second, J, is a lever pivoted on a fulcrum-block, J′, mounted by means of a dovetail groove on its under side on a dovetail bar, H‴, constructed in a manner similar to the bars H H′, and secured on rib C″ and between ribs C′ and C‴ in the same manner.

Fig. 6 shows the construction of bars H, H′, and H‴, and bar H″ is similar, except the under transverse dovetail groove. By operating these levers the bars D E F G may be

brought toward each other, the space included decreasing in each dimension as this is done. This movement is, as may be seen at a glance, especially applicable to presses—such as hay, cotton, or cider presses—as well as many other devices, and might of itself be sufficient to fully illustrate my invention; but in order to more fully show its application I have shown other devices as follows:

K and L are two vises, each of which, as is well known, having one jaw dovetailed and the other grooved to correspond, and moved on each other by screws. This gives a movement of the jaws toward each other of the two sets of jaws. In order to give the opposite movements, I shape the bottom of each vise so that it dovetails in between the two ribs C C′ on plate A, and I make a dovetail groove in the jaw K′, of vise K, in which slides a dovetail bar, L′, attached rigidly to the other jaw of the vise K. On the bar L′, I mount a block, M, having a dovetail groove to fit over the bar, to which is hinged a bar, N, having serrations *n* on its top. (See Figs. 3 and 5.) This bar is also dovetailed or T-shaped in section, and moves in a corresponding groove in a block, O, shaped at its bottom to run in a dovetailed groove in a block, P, placed at right angles to the block O, and fitted at its ends to dovetail between the ribs C C′ on plate A. The block O is extended upward, forming ears *o o′*, between which on a shaft, *o″*, a forked dog, *p*, is pivoted, which engages the serrations *n* in bar N. The shaft *o″* passes through the forks of this dog, and between them, on the same shaft, is a lever, Q, whose outer end, *q*, is curved, so as to engage said serrations, whereby the bar N can be pushed forward, carrying with it all its connections—viz., vise K—and held in any position by dog *p*. By means of the arrangements shown this pushing and holding device may be adjusted horizontally in either direction with relation to the vises, and a double adjustment of all the parts obtained. I have contemplated using this arrangement of vises in connection with a turning-lathe, and for that purpose have provided a tool-rest, as at R, which slides on a bar, *r*, which of itself slides between the ribs C C′ on plate A, at right angles to its length, giving it also a double adjustment. I also provide a sliding block, S, on a rod which also slides, which illustrates the manner in which I intend to apply the movement as a wood-carrier for a saw, (shown at T.) It will be seen by this description that my invention has a wide range of usefulness, and may be utilized in many different ways.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with plate A, having ribs C′ C″, of the four bars placed at the sides of a rectangle and provided with levers or equivalent devices for moving them simultaneously or separately toward a central included point, the opening being at all times complete, substantially as set forth.

2. The combination, with the plate A, having ribs C′ C″ C‴, of the bars D E F G, provided with grooved blocks D′, E′, F′, and G′ on one of their ends, respectively, each adjacent bar sliding in the groove in the adjoining block, and each block having a groove in its under side to engage bars H H′, as set forth.

3. In combination, plate A, having its ribs C′ C″ C‴, the bars H H′ H″, the fulcrum blocks and levers, and the bars D E F G, having doubly-grooved blocks D′ E′ F′ G′ on their ends, all arranged and operating as set forth.

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

JAMES FRIST.

Witnesses:
O. E. DUFFY,
JULIUS SOLGER.