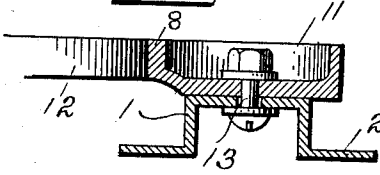
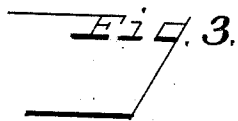
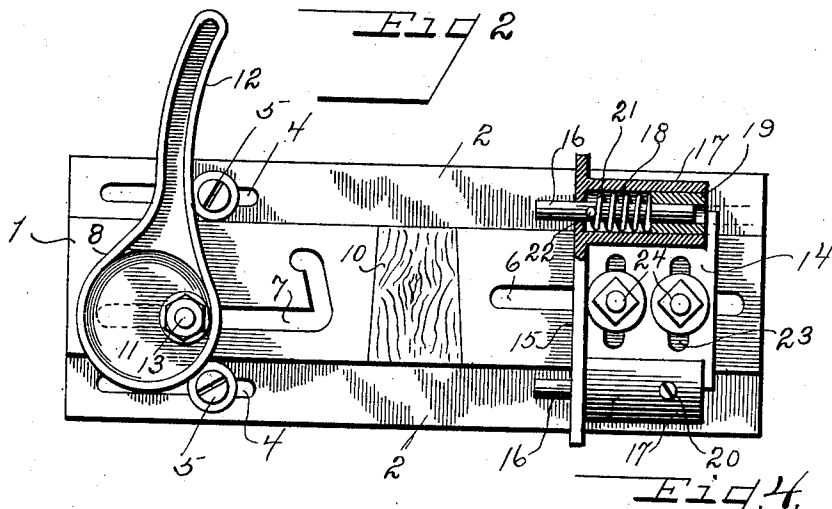
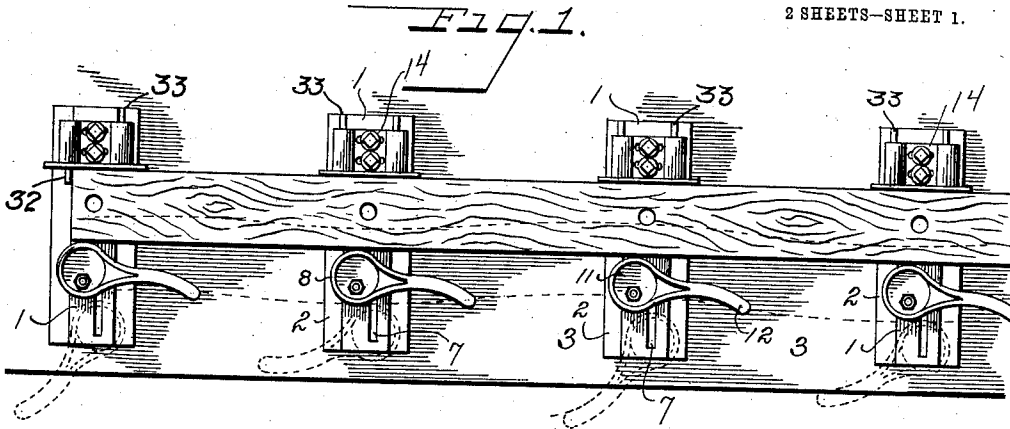


J. J. WOODMAN.  
CLAMP AND GAGE.  
APPLICATION FILED MAR. 25, 1908.

1,016,594.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 1.



WITNESSES:

M. W. Gillespie  
H. W. Dickinson.

INVENTOR.

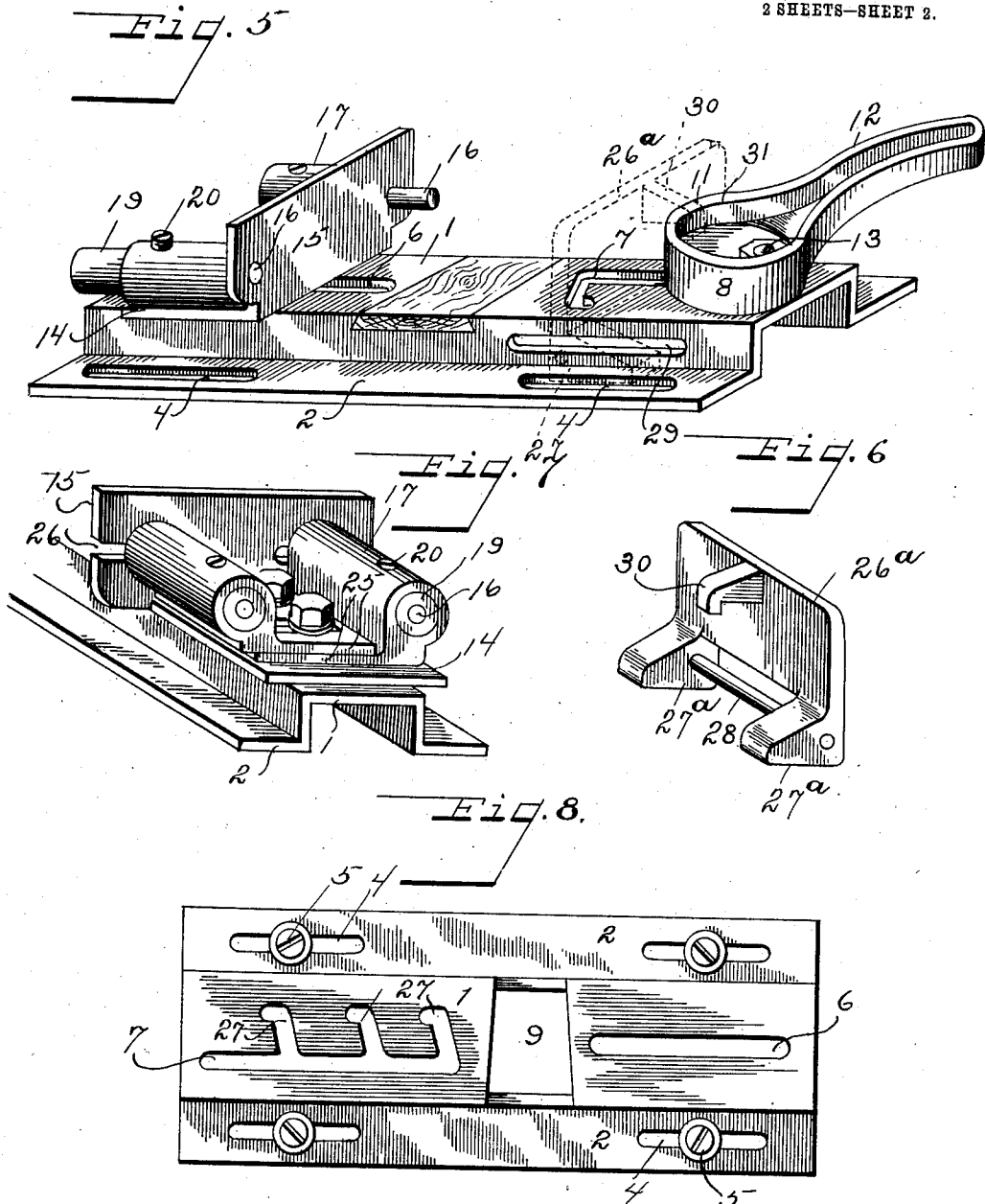
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# UNITED STATES PATENT OFFICE.

JOHN J. WOODMAN, OF SPRINGFIELD, OHIO, ASSIGNOR OF ONE-HALF TO CARL BACKUS, OF SPRINGFIELD, OHIO, AND ONE-HALF TO FRANK L. WALKER, OF DAYTON, OHIO.

## CLAMP AND GAGE.

1,016,594.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed March 25, 1908. Serial No. 423,103.

*To all whom it may concern:*

Be it known that I, JOHN J. WOODMAN, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Clamps and Gages, of which the following is a specification.

My invention relates to wood working appliances and particularly to clamps and gages, and is especially adapted to use with boring or other wood working machines, but is not limited to such use, but may be employed as a vise, or in connection with other classes of work.

The object of the invention is to greatly simplify the construction as well as the means and mode of operation of such devices, whereby they will not only be cheapened in construction, but will be rendered, more efficient and positive in operation, easily operated, and unlikely to get out of repair.

A further object is to provide in such a device, not only a gage for alining the work, but an automatic end gage adapted to locate the work in a predetermined position; to provide a pivoted clamping jaw adjustable in its relation to the stationary jaw, and which may be readily shifted to and from operative position to enable the operator to more readily insert and remove the work, thus making the device conducive to rapid and accurate work.

With the above primary and other incidental objects in view as will appear from the specification, the invention consists of the means, mechanism, construction and arrangement of parts, together with the mode of operation, or their equivalents, hereinafter described and set forth in the claims.

In the drawings Figure 1 is a plan view of the table of a boring, or other wood working machine, with a plurality of the devices forming the subject matter hereof in their operative positions. Fig. 2 is a plan view of the device, partly in section. Fig. 3 is a side elevation of the device with the work in place showing the relation of the work to the boring bit, and diagrammatically the method of inserting and removing the work. Fig. 4 is a detail transverse sectional view, through the pivoted clamping member. Fig. 5 is a perspective view of the assembled device, also showing

in dotted lines the addition of a sliding vise jaw to the structure. Fig. 6 is a perspective view of the removable sliding jaw. Fig. 7 is a perspective view of a modification of the adjustable gage features. Fig. 8 is a plan view of the main frame member, also showing therein means for engaging the clamping member in different positions.

Like parts are indicated by similar characters of reference throughout the several views.

In constructing the device there is employed a main frame member 1 of a substantially inverted U shape, having lateral flanges 2 by which it may be secured to the table 3 of the machine, or other structure. The flanges 2 are provided with slots 4 through which extend screws 5 engaging the table, thereby providing for adjustment of the device upon its support, whereby several of the devices may be brought into alinement. In the upper surface of the member 1 is a longitudinal slot 6 in which is longitudinally adjustable a gage member or stationary jaw hereinafter described. There is also located in the member 1 an offset slot 7 shown in the drawing as L shaped, but which might be otherwise shaped, in which is slidably mounted an eccentrically pivoted clamping member 8. Intermediate the slots 6 and 7 is a recess 9 in which is inserted a wood or fiber block 10 whereby the bits hereinafter mentioned will not be injured by contacting the metallic frame member after passing through the work. The block 10 is preferably slightly tapered, and the recess dovetailed, to permit the block to be firmly wedged in place. The clamp member 8 comprises a substantially circular head 11 from which extends an integral operating handle 12. The clamp member is eccentrically pivoted on a stud or bolt 13 extending through said member and engaging the slot 7 in which it is adapted to slide. This construction is best shown in Fig. 4.

Adjustably mounted on the main frame and engaging the slot 6, is the gage, 14, having the working face 15 perpendicular to the main frame, and normally extending across said frame at right angles therewith. Projecting from the working face of the gage is one or more spring pressed depressible plungers 16, mounted in barrels or casings 17 forming a part of the gage member. The barrel or casing 17 is bored out

to form a chamber 18 in which is located a bushing 19 secured in place by a setscrew 20, and forming a bearing for the plunger 16. Located within the chamber 18 is a spring 21 surrounding the plunger 16 and bearing at one end on the bushing 19 and at the other end on a pin 22 in the plunger, thereby tending to project the plunger 16 beyond the working face 15 of the gage.

The gage 14 is provided with transverse slots 23, through which slots and the slot 6 extend bolts 24 adapted to positively secure the gage in its adjusted position. By means of the slots 23 and 6 the gage 14 may be variously adjusted upon the frame member 1.

The drawings show two depressible plungers in each gage 14, but it is to be understood that one or more may be employed, and for certain operations, the plungers may be omitted entirely. While the plunger casings may be integral with the balance of the gage, as in Figs. 1 and 2, in which the plungers are permanently located in relation to each other, the plungers may also be carried on separate slides 25 independently adjustable and independent of the main portion of the gage member as shown in Fig. 7. In this case the face 15 of the gage is slotted as at 26 to permit the lateral adjustment of the plungers.

The slot 7 may be formed with a plurality of offset branches 27 (see Fig. 8) whereby the clamping member may be operatively engaged in different positions.

In Fig. 5 which is a perspective view of the assembled device, there is indicated by dotted lines a sliding clamp jaw 26<sup>a</sup>, shown in detail in Fig. 6, adapted to ride upon the main frame, and having pendant portions 27<sup>a</sup> projecting downward on either side of the frame, and a pin 28 extending through said portions 27<sup>a</sup> and slots 29 in the main frame, to retain the sliding jaw in place. The jaw 26 is movable with the clamping member 8, an offset finger 30 projecting from the rear face of the jaw being adapted to engage the flange 31 of the clamping member. When the device is being used as a vise or other purposes wherein the exact location of the work is not material, the set screw 20 may be loosened, and the bushing 19 withdrawn from the barrel 17 as shown in Fig. 5, thereby withdrawing the plungers 16 to a position flush with the face of the gage 14.

In boring machines of the usual type, the bits revolve continuously, and without means as herein provided for shifting the clamping member it is necessary to either draw the work longitudinally from under the bits, or to raise the bits to a position considerably above the work in order to remove the work from the machine or to place it therein. In the first instance a great amount

of space is necessary adjacent to the machine in which to handle long strips, and in handling such pieces unless the operator exercises unusual care the work is apt to come in contact with the revolving bits during the removal, and thereby become marred. To elevate the bits of the usual type of boring machine at each operation requires a great amount of time and labor, all of which objections are obviated by the use of the device herein described.

In inserting or removing work from a machine embodying the improved form of clamping device herein described the bit is elevated only sufficient to clear the work, as in Fig. 3, the clamping member 8 is shifted along the slot 7 to the outer end thereof as shown in Fig. 5, and indicated by dotted lines in Figs. 1 and 3. When the clamping member is so shifted, the work may be inserted or removed by an inclined lateral movement as indicated by dotted lines and arrows in Fig. 3. The work is pressed back against the faces 15 of the respective gage portions, and to locate the work in a predetermined position the end of the strip is brought into contact with any one of the plungers 16 as may be desired, as at 32 Fig. 1, according to the desired relation of the holes to be bored with the end of the strip, the plungers 16 intermediate the ends of the work being depressed as at 33. When the work comprises long strips of wood, it is frequently found that the strips are warped or crooked as shown by dotted lines in Fig. 1. The shifting clamp permits such pieces to be inserted as easily as straight strips, and by the operation of the eccentric clamp member the crooked strip is firmly pressed against the gage portions, which causes it to be straightened, the curvature being removed while under pressure, thereby permitting the holes to be properly located. To clamp the work it is only necessary to slide the member 8 along the slot 7 to the extremity of the lateral branch, and turn the member on its pivotal connection, whereby the eccentric head 11 will be caused to engage the work and press it toward the gage 14.

While the device has been particularly described as applied to a boring machine, it is to be understood as equally applicable to other machines and uses, one of which is that of clamping a number of strips which have previously been glued together, or may be used singly as a vise or clamp for small work.

From the above description it will be apparent that there is thus produced a device of the character described, possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportion, detail construction and

arrangement of parts, without departing from the principle involved or sacrificing any of its advantages.

Having thus described my invention, I claim:

1. In a device of the character described, a stationary main frame, upon which the work is adapted to rest and having in the work supporting surface thereof a longitudinally disposed slot provided with a lateral branch terminating at a point back of the line of intersection of the branch and main slot, and an eccentrically pivoted clamping member operating in a plane parallel with the work supporting surface both revolvably movable about its pivotal connection and slidingly movable in conjunction with its pivotal connection within the limits of the said slot and the branch thereof.
2. In a device of the character described, a stationary main frame, forming a support for the work and having in the work supporting surface thereof a slot provided with a lateral branch extending angularly therefrom, a revoluble eccentrically pivoted clamping member, a pivoted stud therefor engaging in the slot and projecting perpendicular to the supporting surface of the main frame, the clamping member and the pivoted stud thereof being free to slide to and from operative position within the limits of the slot and the lateral branch thereof.
3. In a clamping device as described, a main frame member, an adjustable clamping member, a stationary gage member on said main frame, a depressible plunger projecting beyond the working face of the gage member and forming an end stop for the work, substantially as specified.
4. In a clamping device as described, a main frame member, an adjustable clamping member, a stationary gage member, a casing on said gage member, a bushing in said casing and forming a bearing for a depressible plunger, a spring within said cas-

ing tending to project said plunger beyond the working face of said gage member, substantially as specified.

5. The combination with a table or support, of a plurality of clamp devices adjustably secured thereon, whereby the said devices may be alined, each clamping device including an adjustable gage member adapted to determine the lateral location of the work, depressible plungers projecting from the working face of said gage members any one of which may be selected to determine the longitudinal location of the work, and eccentrically pivoted clamping members, said clamping members being adjustable to and from the work independent of their eccentric clamping movement.

6. In a clamping device as described, a main frame member having a slot therein, an offset portion in said slot, an eccentrically pivoted clamping member engaging with said slot and slidingly movable within the limits thereof independent of the movement about the pivotal connection, said clamping member being engaged in said offset when in operative position.

7. In a device as described, a main supporting member, a gage member carried thereon and adapted to determine the lateral position of the work, spring actuated, depressible plungers projecting from the working face of said gage member and adapted to form an end stop for the work, and means to press the work into contact with said gage member, whereby the plungers intermediate the ends of the work will be depressed, substantially as specified.

In testimony whereof, I have hereunto set my hand this 16 day of March A. D. 1908.

JOHN J. WOODMAN.

Witnesses:

SCOTT SMITH,  
EDW. J. LYNCH.