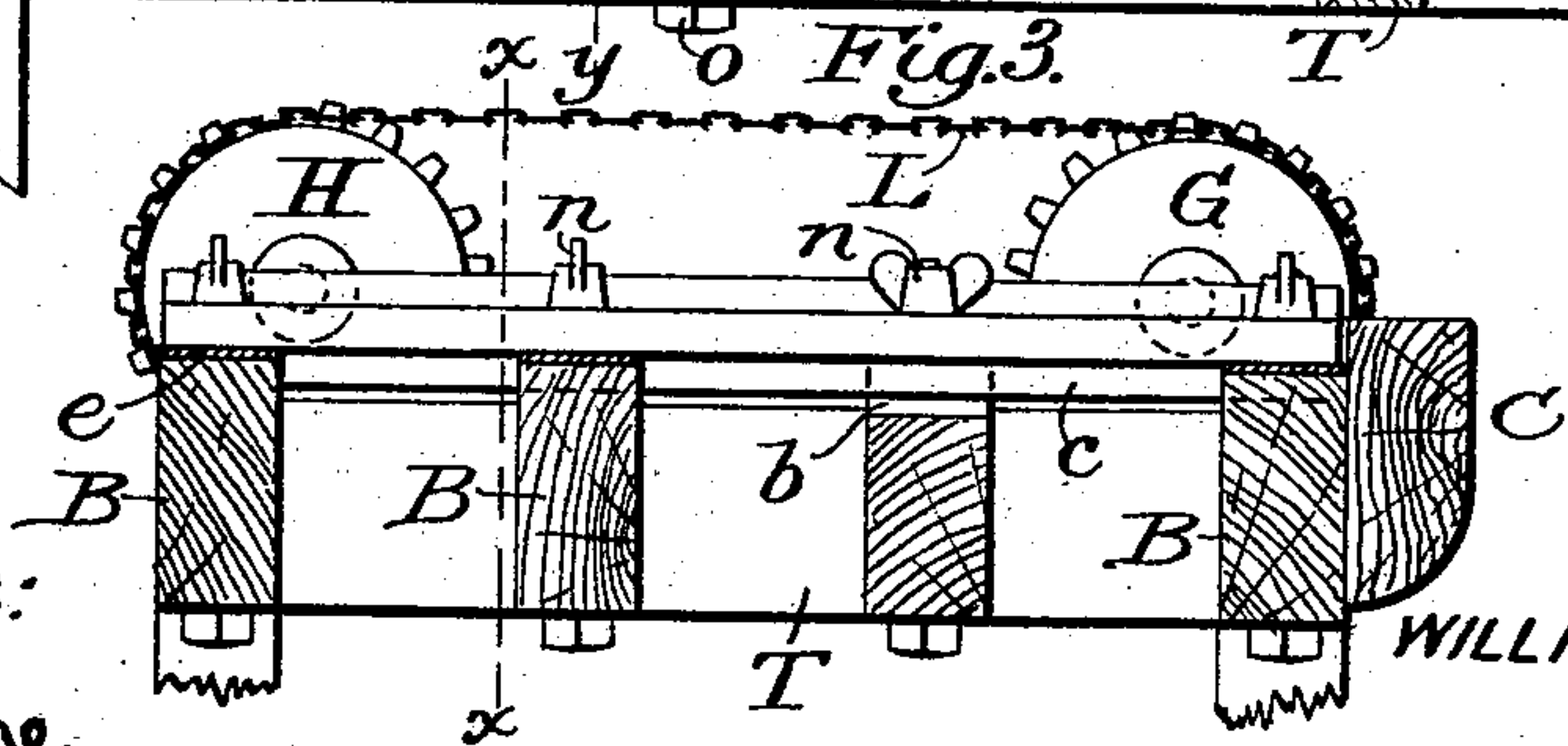
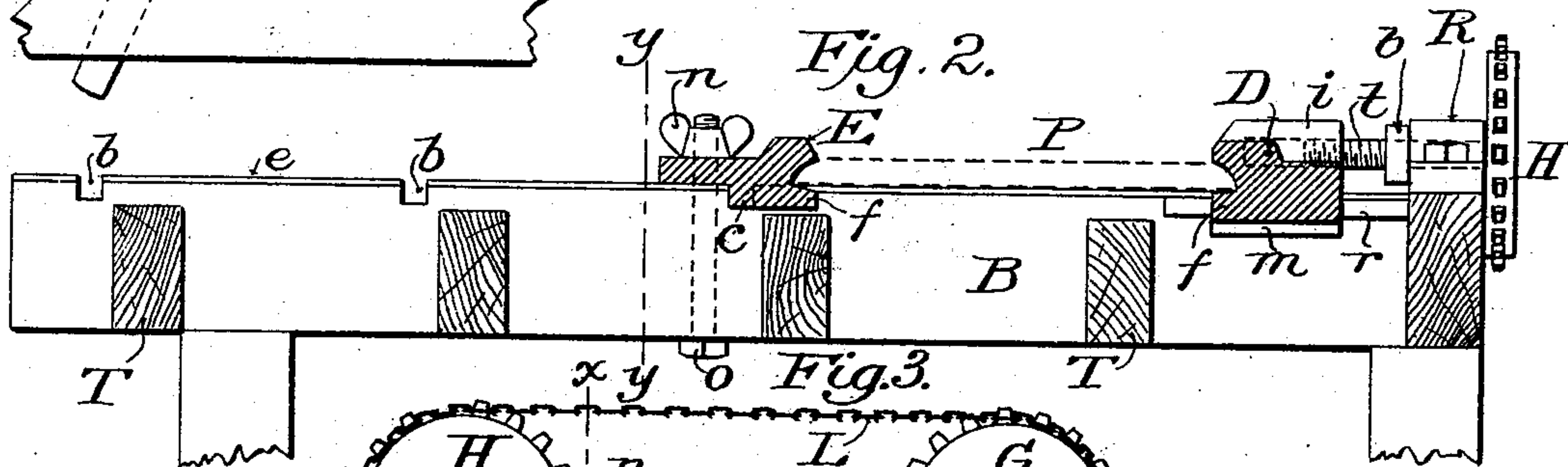
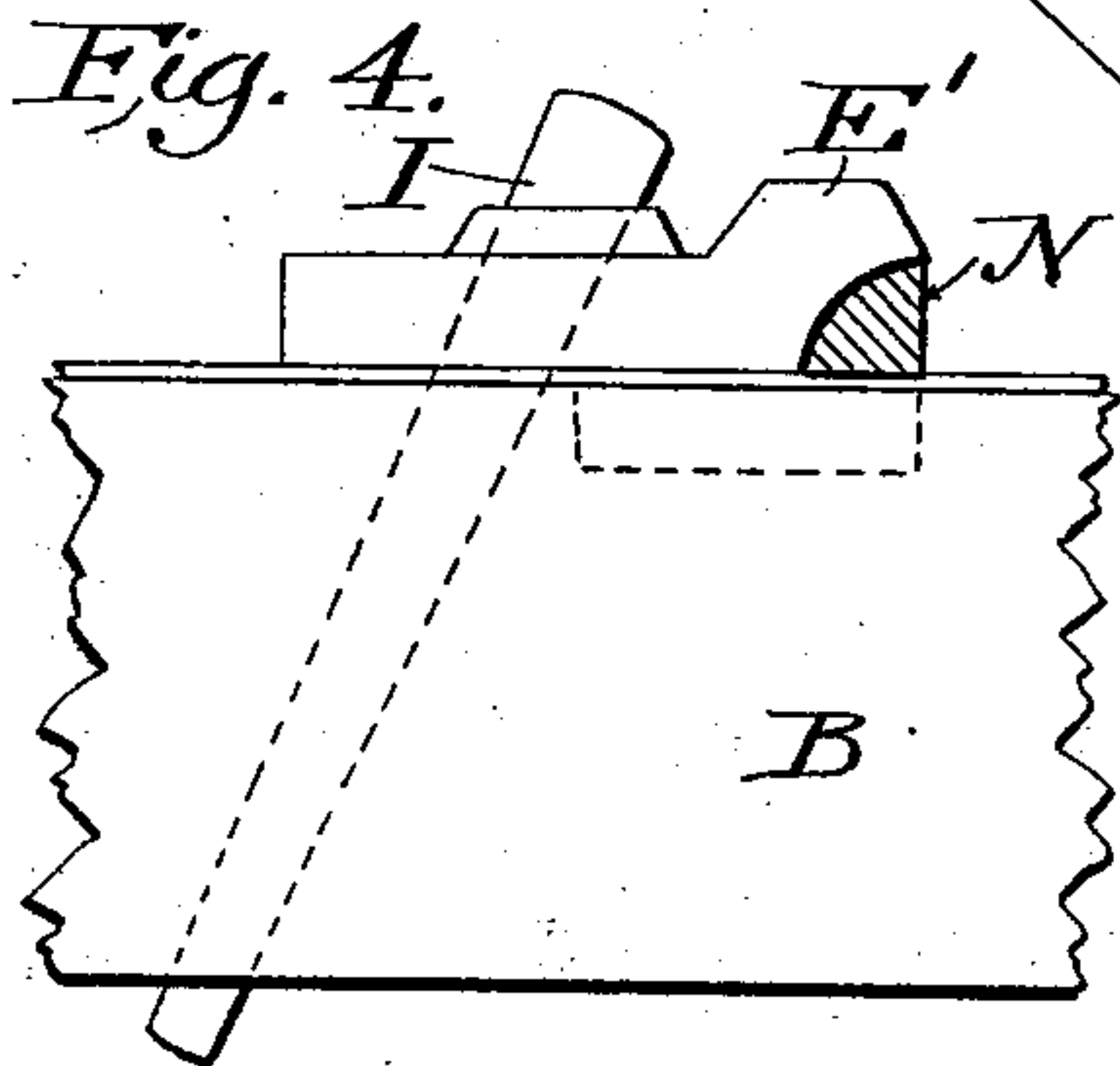
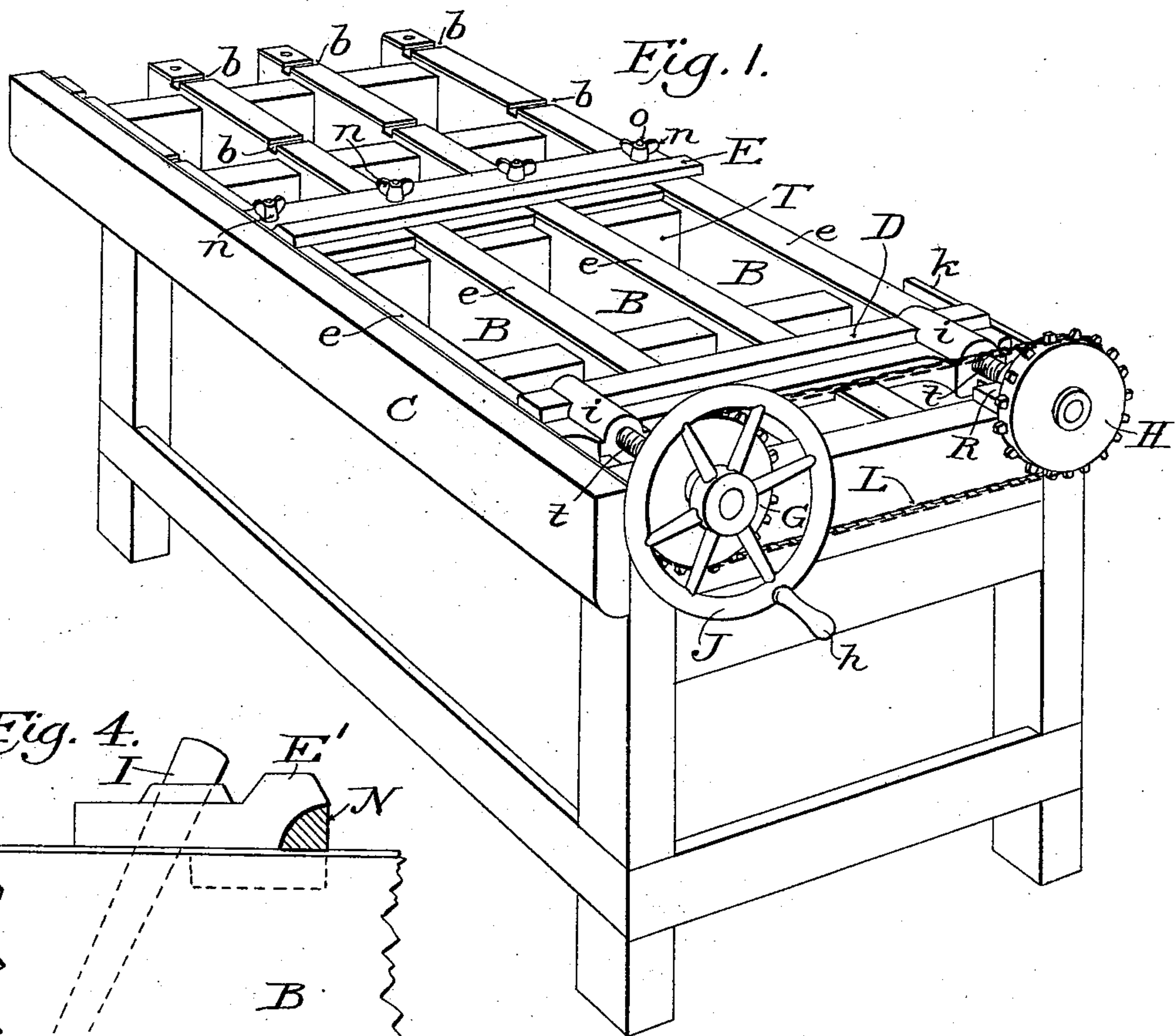


(No Model.)

W. HORROCKS.
CLAMPING MACHINE.

No. 507,131.

Patented Oct. 24, 1893.



Witnesses:
Horace A. Dodge.
Charlotte B. Bull.

WILLIAM HORROCKS,
Inventor,

by Dodge & Sons
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM HORROCKS, OF HERKIMER, NEW YORK.

CLAMPING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 507,131, dated October 24, 1893.

Application filed April 27, 1893. Serial No. 472,034. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HORROCKS, a citizen of the United States, residing at Herkimer, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Clamping-Machines, of which the following is a specification.

This invention relates to machines for clamping panels and similar cabinet work, and the invention consists in certain novel features of construction as hereinafter more fully set forth.

Figure 1 is a perspective view of the machine complete. Fig. 2 is a longitudinal vertical section on the line $x-x$ of Fig. 3. Fig. 3 is a transverse vertical section on the line $y-y$ of Fig. 2, and Fig. 4 represents a modification of the means for holding the adjustable jaw in position.

The object of my present invention is to produce a clamping table, on or by which finished panels or similar cabinet work can be clamped without marring or bruising the rounded or molded and finished edges, and which will leave the panels perfectly square and true, ready for use without further finishing, and which in the act of clamping the parts together will not tend to spring or open the joints on one side more than on the other.

The special class of work for which this device is designed, is the panels used in the manufacture of desks of various kinds, though it may be used on other classes of cabinet work also.

To construct a clamping table on my plan, I provide a rigid frame consisting of a series of longitudinal timbers or bars B which I term the bearers, and which are connected by cross pieces T, this frame or bed being supported on legs as shown, to bring it to the proper height for convenient use.

As shown in Figs. 1 and 2, the upper faces of the bearers B project a little above the top of the cross pieces T, and are covered with metallic strips or plates e , which are made smooth and true on their upper surfaces, for the panel or work to rest upon while being clamped. I then provide two clamping jaws D and E as shown, they being made of cast iron, and of a length equal to the width of the bed, as shown in Fig. 1.

The jaw E is made adjustable lengthwise of the bed to adapt the table to panels of different sizes. It is provided on its under side with a rib c , Fig. 2, which fits into recesses or notches b , formed in the tops of the bearers B as shown in Fig. 1, care being taken to have these notches arranged at an exact right angle to the inner face of bar C which, as shown in Figs. 1 and 3, is made to project above the face of the bearers B, so as to form a bearing for one side or edge of the panel or work to be clamped. This jaw is thus held perfectly true and rigid, and to keep it in place it is secured by bolts o which extend through holes in the bearers, and are provided with thumb nuts n , as shown in Figs. 1, 2 and 3, so that they can be readily detached and adjusted at any other point when required.

Both jaws have the front faces curved in cross section to adapt them to clamping panels the outer edges of which are beveled, molded or rounded, this latter style being extensively used in making desks and similar articles with rounded corners; and their faces are planed off straight and true lengthwise, so as to bear evenly throughout on the edge of the panel being clamped. Each jaw is also provided on its under side with a series of lips f , which consist of metal plates, either cast integral with the jaw or secured thereto by bolts, as may be found most convenient, their upper faces being made true and smooth, and so adjusted as to come just flush or even with the top of the bearers or the plates e thereon, they being of such a length as to reach from one bearer to another, their function being to support the lower edge of the panel and prevent it from springing or being forced downward by the curved edge of the jaw, when pressure is applied.

The other jaw D, is provided at each end with a lip m which engages under the projecting edge of a plate r , secured upon the outside bearers, one of which is shown in Fig. 2,—these plates thus serving to form a smooth and true surface or track for the jaw to move on, and also to prevent it from rising or tending to tip up when pressure is applied. If desired a plate K may be secured to the outer side of the bearer on the side opposite

the bar C as shown in Fig. 1, for the end of the jaw D to work against, but this is not considered necessary, if the guide plates *r* are properly fitted to bear against the ends of the jaw, where they project down alongside the outer bearers. This movable jaw D is provided with bosses *i*, in which screw threads are cut to receive the ends of two screws *t*, which are journaled in boxes R upon the end bar of the bed or frame, as shown in Figs. 1 and 2.

Each screw is provided with a collar *l*, and at its outer end with a sprocket wheel as shown, and the two sprocket wheels G and H are connected by an endless chain, L as shown in Figs. 1 and 3, one being provided with a hand wheel J and handle *h*, or equivalent crank, for simultaneously operating the two screws, and thereby moving the jaw equally at both ends, or with uniformity throughout its entire length.

The holes for the screws do not extend entirely through the jaw, but nearly through as shown in Fig. 2, thus leaving the front edge of the jaw smooth and unbroken throughout its entire length, so as not to bruise or injure the edge of the panel. As only about a half inch movement of this jaw is required to clamp a panel, after it has been put together and placed on the bed, the screws *t* need be but a few inches in length.

The panels for the ends of desks are all of uniform height or length, but differ in width according to the width of the various sizes and styles of desks, and the notches *b* for the adjustment of the jaw E will be spaced or arranged accordingly. It will however be necessary to adjust or change this jaw E only at long intervals, as in practice a large number of the panels of one size will be made up at one time, and then those of another size, and so on, quantities of the various sized panels being kept ready for use whenever wanted. In constructing these panels the mortises and tenons do not extend entirely through, and hence the edges of the stiles or pilasters can be finished complete before the parts are put together, and will require no subsequent planing or machining as is the usual custom.

In practice, the parts are put together after glue is applied to the joints, and the panel is then laid on the bearers between the jaws, as shown by the dotted lines marked P in Fig. 2, with its edge abutting against the side rail C, when by the use of a suitable block and hammer it is driven up against the rail C sufficiently to close the joints which are parallel with the rail, when a turn or two of the handle *h* will force the jaw D forward and clamp or press it between the jaws so as to completely close all the joints which run parallel with the jaws. It is only necessary to hold it under pressure but a minute or so, when it can be removed and another substituted, and thus the work can be done very

rapidly. As the bearers and the lips on the under side of the jaws entirely overcome any tendency of the panel when pressed to spring or curve downward, as they otherwise would because of the curved faces of the jaws, it will be seen that the parts will be pressed squarely together, and that consequently the joints on both faces of the panel will be closed alike, thus avoiding the tendency of being more open on one face than on the other.

To enable the machine to be used with equal facility on square edged work, I provide either metallic or hard wood strips N as shown in cross section in Fig. 4, and which only require to be laid in place in the grooved face of the jaws, when it is desired to operate on work having flat or right angled edges.

In order to adapt the machine to use on miscellaneous work, and with which it may be necessary to frequently adjust the jaw E, I provide the jaw E' with holes in which pins I can be inserted, and which fit loosely in inclined holes in the bearers, as shown in dotted lines in Fig. 4. The jaw for this purpose will be an extra one, made without the rib *c* on its under side so it will rest flat on the bearers at any point, without reference to the notches or recesses *b*. By providing a series of these inclined holes in the bearers, it will be seen that the jaw can thus be adjusted quickly from one position to another by merely lifting it up and setting it down where wanted, and thus the machine while designed for a special class of work can be quickly adapted for operating on other or miscellaneous work.

Having thus described my invention, what I claim is—

1. The combination in a clamping machine, of a bed composed of a frame having intermediate parallel bars for supporting the panels to be clamped, a stationary side rail C projecting above the face of the supporting bars, an adjustable jaw E extending across the bed with means for securing it in position, and a movable jaw, with mechanism substantially such as described for moving it bodily and with uniformity toward the opposite jaw, all arranged to operate substantially as herein shown and described.

2. In combination with the parallel bars B, the clamping jaws E, D, each provided on its opposing faces with a curved recess or groove extending from end to end, and with projecting lips *f* arranged to slide between the bars B and having their upper faces flush with the upper faces of said bars, substantially as shown and described.

In witness whereof I hereunto set my hand in the presence of two witnesses.

WILLIAM HORROCKS.

Witnesses:

CHAS. AVERY,
D. WEBSTER STODDARD.