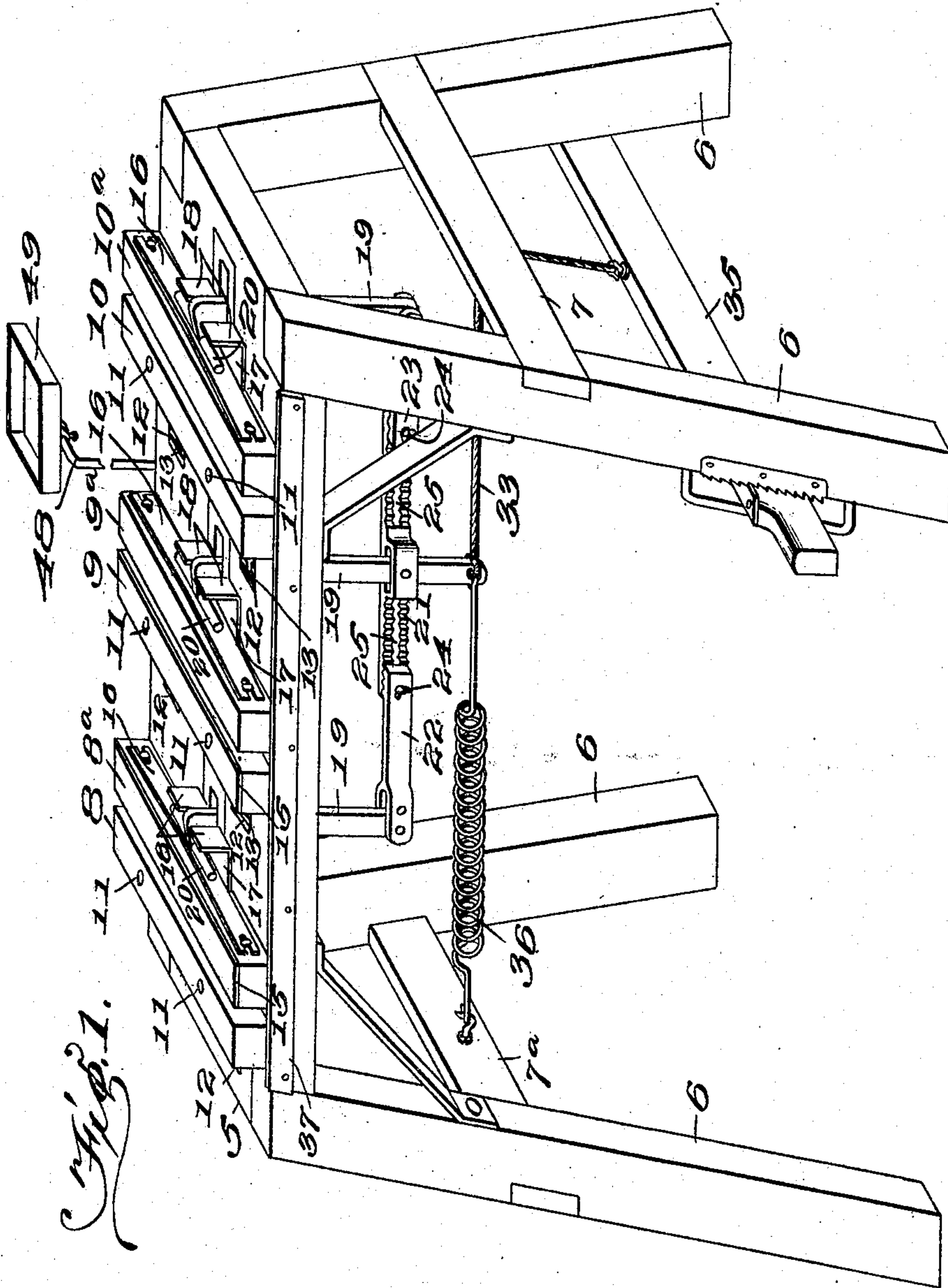


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WOODWORKING CLAMP.  
APPLICATION FILED MAY 23, 1908.

919,930.

Patented Apr. 27, 1909.  
2 SHEETS—SHEET 1.



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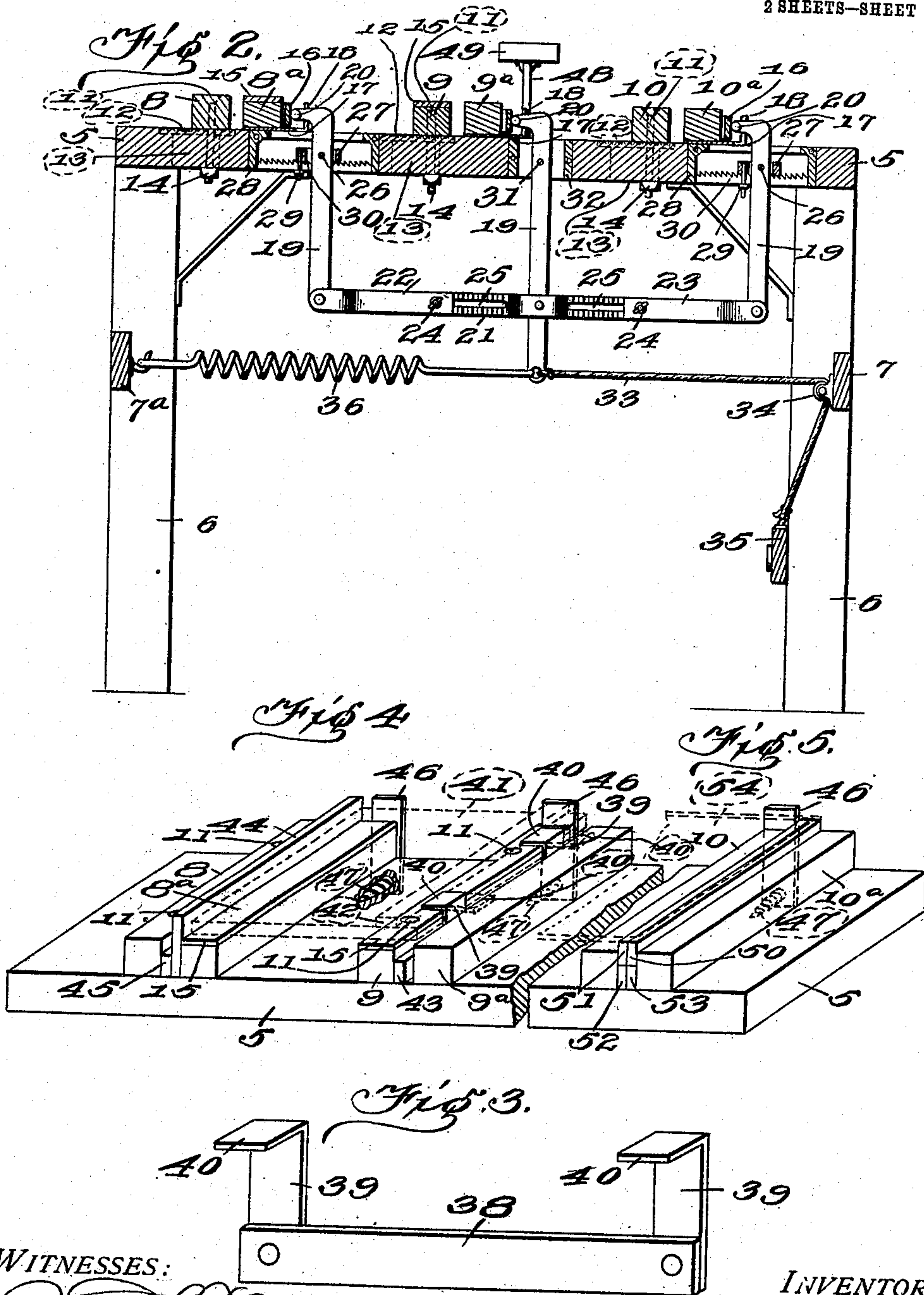
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# UNITED STATES PATENT OFFICE.

FRED W. NICHOLS AND FRANK J. HASTINGS, OF HELENA, MISSOURI.

## WOODWORKING-CLAMP.

No. 919,930.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed May 23, 1908. Serial No. 434,684.

*To all whom it may concern:*

Be it known that we, FRED W. NICHOLS and FRANK J. HASTINGS, citizens of the United States, residing at Helena, in the county of Andrew and State of Missouri, have invented certain new and useful Improvements in Woodworking-Clamps, of which the following is a specification.

This invention relates to woodworking-clamps, more particularly one for holding the end walls and the partition of a box or similar structure while the side walls thereof are being nailed on.

The object of the present invention is to provide a clamp of this kind in which the jaws can be adjusted to suit boxes of different lengths, and also other novel features of construction to be hereinafter described and claimed.

In the accompanying drawing, Figure 1 is a perspective view of the invention. Fig. 2 is a longitudinal section. Fig. 3 is a perspective view of the gage. Figs. 4 and 5 are fragmentary perspective views illustrating the method of securing cleats to the end walls and the top of the box.

Referring specifically to the drawings, the supporting-frame of the machine is a bench comprising a top plate 5 mounted on legs 6 which are connected by braces 7 and 7<sup>a</sup>, respectively. On the bench top 5 are mounted stationary clamping-jaws 8, 9 and 10, respectively, and movable clamping-jaws 8<sup>a</sup>, 9<sup>a</sup> and 10<sup>a</sup>, respectively, cooperating therewith. The jaws 8, 8<sup>a</sup> and 10, 10<sup>a</sup> are for the purpose of holding the end walls of the box or case to be constructed while the sides and bottom walls thereof are being nailed on, and the jaws 9, 9<sup>a</sup> hold the partition.

The jaws 8, 9 and 10 are rigidly secured to the bench top by bolts 11. The bench top is inlaid with notched plates 12 and the bottom of the stationary jaws are also notched so that said jaws may be more firmly held in place. The bench top and the plates 12 are slotted as indicated at 13 through which slots the fastening bolts 11 extend which enables the stationary jaws to be adjusted according to the length of the box to be constructed. After placing the stationary jaws in proper position they are securely held on the bench top by tightening nuts 14 screwed on the bolts 11 against the under side of the

bench top. The jaw 9 is secured to the bench top in the same manner as the jaws 8 and 10 in order that it may be adjusted if extra thick lumber is used. Each jaw is a wooden block which extends across the entire width of the bench top, and the jaws 8<sup>a</sup> and 9 are faced on top with a clenching strip 15.

To the back of the movable jaws 8<sup>a</sup>, 9<sup>a</sup> and 10<sup>a</sup> are secured flat steel springs 16, and to the bottom of said jaws are secured plates 17 which extend outwardly a short distance and have upstanding forked ends 18 which are located in front of the springs 16. The movable jaws 8<sup>a</sup>, 9<sup>a</sup> and 10<sup>a</sup> are each operated by a lever 19 which extends between the branches of the fork 18 and has a T-shaped end 20 the branches of which extend between the springs 16 and the fork.

The three levers 19 are connected by a bar in order that they may operate the three jaws simultaneously. This connecting bar is in three pieces indicated at 21, 22 and 23, respectively, the middle section 21 being connected to the middle lever 19, and the sections 22 and 23 to the end levers 19. The three sections are connected by bolts 24, and the section 21 is slotted as indicated at 25 through which slots the bolts 24 pass in order that the sections may be lengthened or shortened. The contiguous faces of the sections are serrated so that they may be more securely fastened together.

The end levers 19 are fulcrumed at 26 in a slotted block 27 mounted in a box or supporting-frame 28 which is let into the bench top 5. The block 27 is adjustable in the box 28. The top and bottom of the box are slotted through which slots the levers extend. The block 27 is fastened in the box by a bolt 29. The contiguous faces of the box and block are notched or serrated as indicated at 30 in order that the block may be more securely fastened.

The middle lever 19 is fulcrumed at 31 in a slotted block 32 let into the bench top 5. The fulcrum of this lever is not adjustable as the position of the jaws 9, 9<sup>a</sup> with respect to the jaws 8, 8<sup>a</sup>, and 10, 10<sup>a</sup> will be always the same. The middle lever 19 is longer than the end levers, and has connected to its lower end a rope or chain 33 which passes over a pulley 34 secured to the brace 7, and its end is connected to a foot-lever 35.



Upon pressing down on the foot-lever, the three levers 19 swing on their fulcrums in a direction to push their T-shaped ends 20 against the springs 16 which advances the movable jaws toward the stationary jaws. When the pressure is removed from the foot-lever, a spring 36 swings the levers 19 in an opposite direction to pull on the forks 18 and thus open the jaws. The spring is fastened at its ends to the lower end of the middle lever and to the brace 7<sup>a</sup>. Suitable means are provided for locking the foot-lever in order that the jaws may remain closed until it is desired to release the work.

To the front edge of the bench top 5 is secured a metal strip 37 which extends the entire length thereof and projects a short distance above the same. This strip serves as a gage to line up the ends and partition of the box.

At 38 is indicated a strip of suitable length to the ends of which are secured outwardly projecting plates 39 having at their ends lateral bends 40. This device is used as a gage for properly placing cleats on the ends of boxes or cases.

In use, the partition of the box or case to be constructed is placed between the jaws 9, 9<sup>a</sup>, and the end walls between the jaws 8, 8<sup>a</sup> and 10, 10<sup>a</sup>, after which the jaws are closed on the work in the manner hereinbefore described to securely hold the same. One of the side walls of the box or case is then nailed on and the partly finished box is released and turned over and again clamped in position to nail on the bottom. After this, the box is again released and placed on top of the jaws without being clamped and the other side is then nailed on. The box is now complete and the partition will be properly located in the middle thereof.

By the springs 16 the movable jaws are made to engage the work yieldingly, and they will take up various thickness in which the boards may run. Thus box ends of different thickness can be placed between the jaws and they will be securely held without adjusting the stationary jaws or the operating levers 19.

The cleating gage operates as follows: The end wall 41 of the box is placed on top of the jaws 8<sup>a</sup> and 9 as shown by dotted lines in Fig. 4, and the gage is placed between the jaws 9, 9<sup>a</sup> with the parts 40 projecting over the box end 41. The extremities of the parts 40 determine the distance between the edge of the box end and the cleat 42. If the cleats are to be nailed flush with the edge of the box end, the gage will be reversed as shown by dotted lines in Fig. 4 so that the parts 40 will extend in an opposite direction, the part 39 then serving as a gage to line up the cleat flush with the edge of the box end.

In order that the gage may be securely held between the jaws a strip 43 is placed therebetween to fill up the space; or the jaws can be closed on the gage, but by using the strip 43 (which may be an unused cleat), the adjustment of the clamps, to a certain sized box which is in the course of construction, need not be changed, and the entire box can be cleated and put together without changing the adjustment of the clamps. Between the jaws 8, 8<sup>a</sup> is placed a gage strip 44 for holding the opposite edge of the box end, and a filling strip 45 is also placed between these jaws for the same purpose as the strip 43. To the rear edge of the bench top 5 are secured upstanding gage strips 46 for lining up the ends of the box ends and cleats. These gage strips are fastened to the bench top by screws 47 and when not in use they are swung down out of the way by loosening said screws. The plates 15 clench the nails which fasten the cleats to the box ends. From the rear edge of the bench top rises a stem 48 which carries a nail-box or tray 49.

The box lids are cleated as follows: Cleats 50, 51, 52 and 53 are placed between the jaws 10, 10<sup>a</sup> and the lid 54 is placed on top thereof as shown by dotted lines in Fig. 5, and nailed to the cleat 50. Four cleats are placed between the jaws 10, 10<sup>a</sup> in order to fill the space therebetween so that the adjustment of the jaws need not be disturbed, and also to project the cleat 50 sufficiently above the top of the jaws to enable the lid to be nailed on.

The clamp herein described is simple in construction and can be easily and readily operated, the clamps can be readily adjusted to suit boxes of different lengths, and the box, crate or similar structure can be quickly and accurately made. The connection between the operating levers 19 and the fulcrum of the end levers are made adjustable as herein described in order that the levers may be adjusted along with the end-clamps.

We claim:

1. In a woodworking clamp, a fixed jaw, an opposite movable jaw, a support for the jaws, a spring attached to the movable jaw, a furcate plate carried by the jaw, and an operating lever extending between the branches of the plate and having laterally extending branches fitting between the plate and the spring.

2. A woodworking-clamp comprising a support, a clamp extending across the same, means for operating the clamp, and a gage comprising a strip held in the clamp and having projections at its ends extending above the clamp and laterally at a right angle to the body of the strip.

3. A woodworking-clamp comprising a support, center and end clamps thereon,



each of which comprises a stationary and a  
movable jaw, means for adjusting the end-  
clamps toward and from the center clamp,  
operating levers for the movable jaws, an  
5 adjustable fulcrum for the operating levers  
of the movable jaws of the end-clamps, and  
an adjustable connection between the levers.

In testimony whereof we affix our signa-  
tures, in presence of two witnesses.

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FRANK J. HASTINGS.

Witnesses:

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