

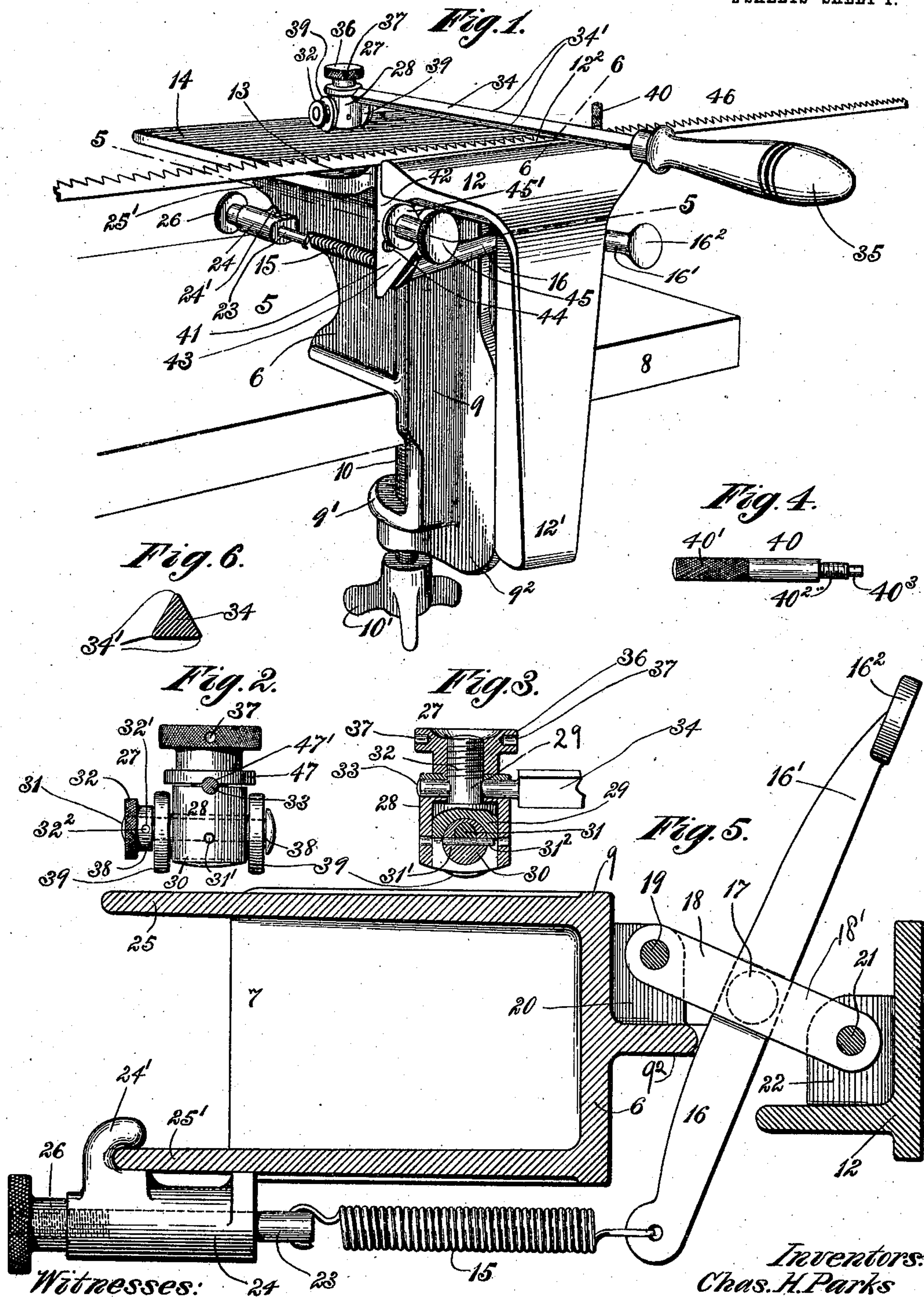
No. 847,599.

PATENTED MAR. 19, 1907.

C. H. PARKS & R. S. BROWN.
MEANS FOR CLAMPING AND FILING SAWS.

APPLICATION FILED AUG. 9, 1905.

2 SHEETS—SHEET 1.



Witnesses:
H. E. Anderson.
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Inventors:
Chas. H. Parks
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By their Attorney,
Wm. H. Fitzgerald

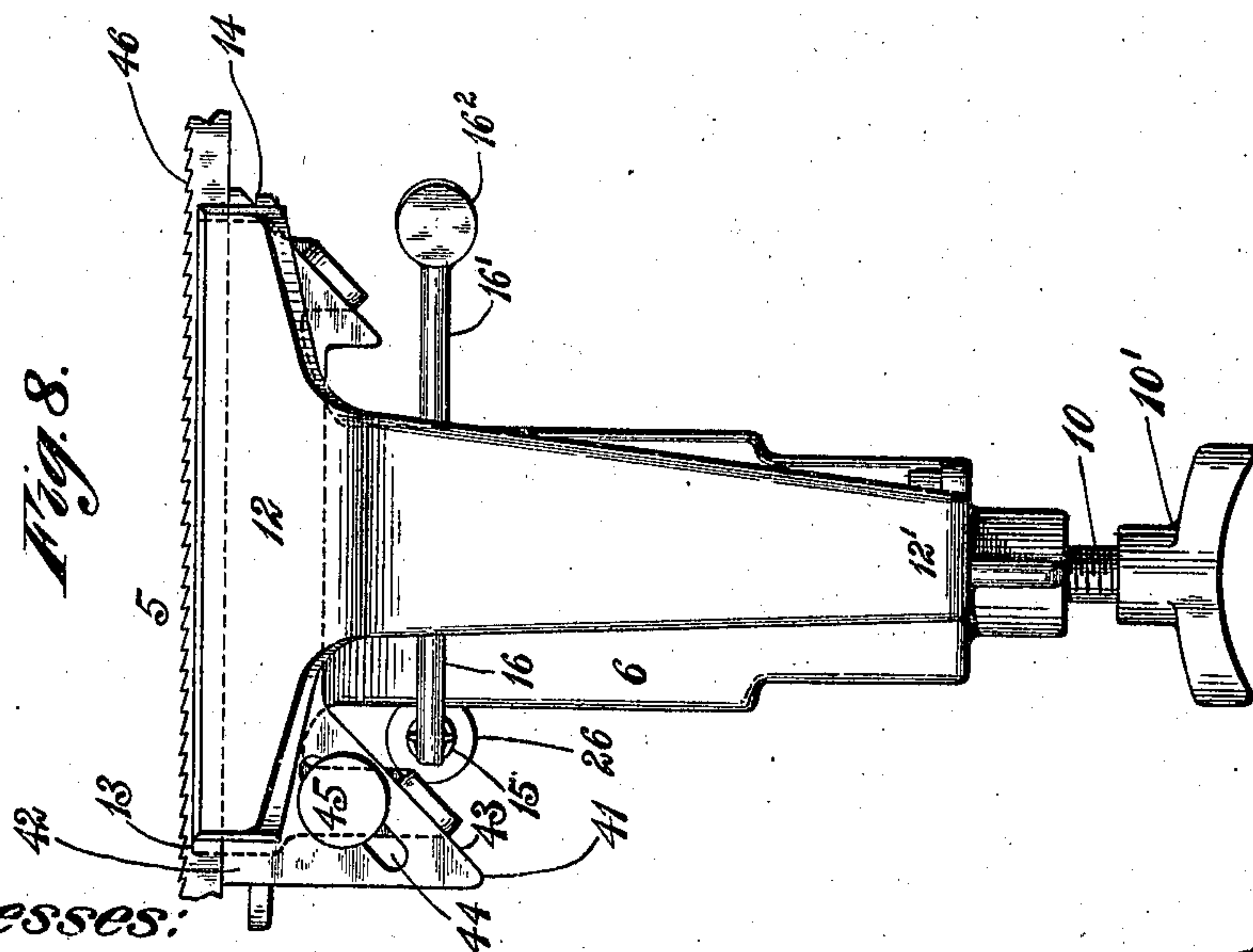
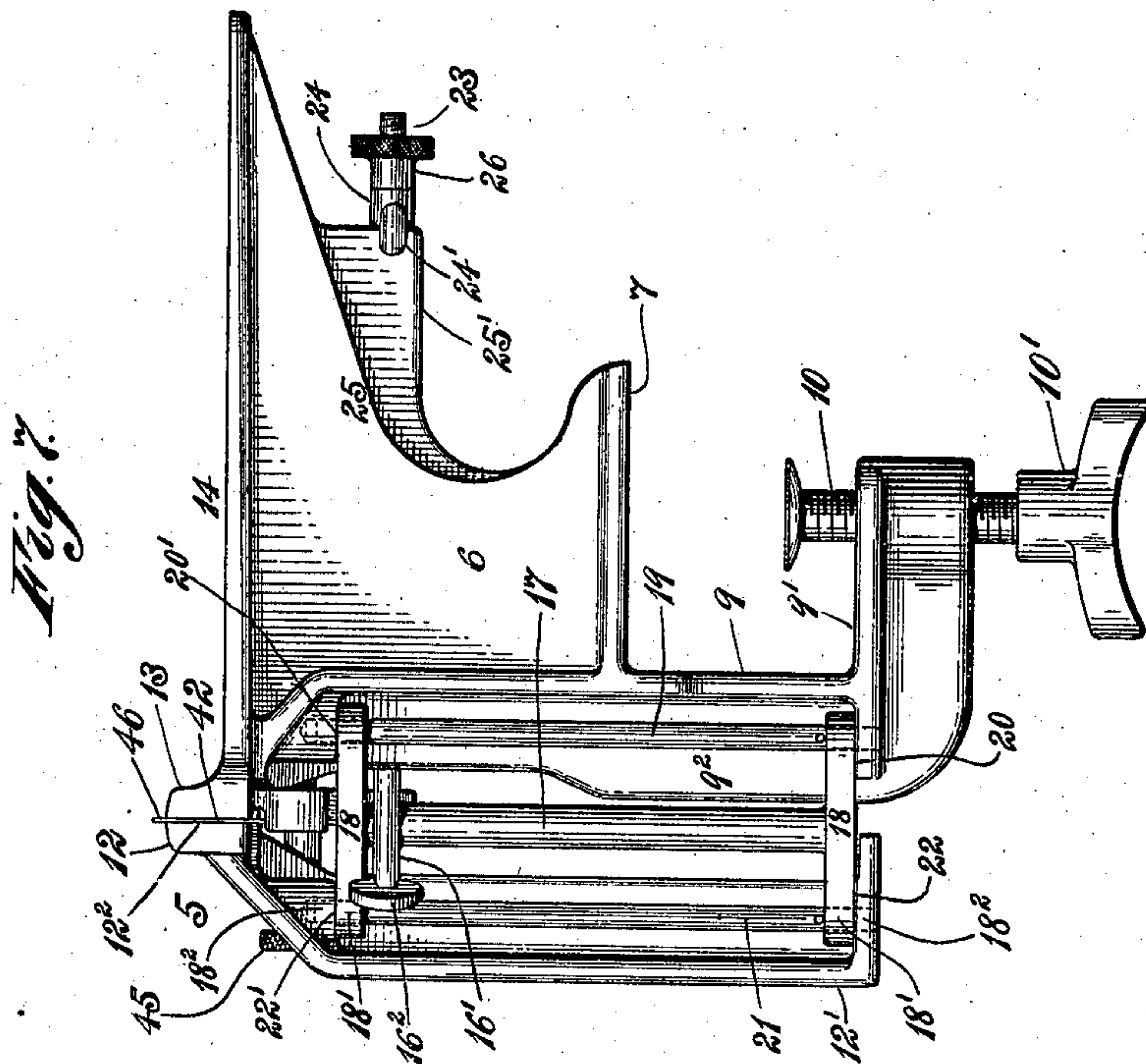
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CHARLES H. PARKS AND ROBERT S. BROWN, OF NEW BRITAIN, CONNECTICUT, ASSIGNORS TO THE NEW BRITAIN MACHINE COMPANY, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

MEANS FOR CLAMPING AND FILING SAWS.

No. 847,599.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed August 9, 1905. Serial No. 273,448.

To all whom it may concern:

Be it known that we, CHARLES H. PARKS and ROBERT S. BROWN, citizens of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have jointly invented certain new and useful Improvements in Means for Clamping and Filing Saws, of which the following is a specification.

10 This invention relates to improvements in means for clamping and filing saws.

An object of the invention is the provision of a gage in the saw-clamp, upon the top of which the saw rests, and of means for so 15 clamping the saw that the same may be fed along by the file, whereby the act of feeding the saw from left to right or any interruption of said act prevents the loss of the correct position of the file, and the saw is prevented 20 from tilting by the gage, such loss of correct position being liable to occur in the old way of filing when the hand of the operator becomes tired and when the operator is inexperienced in his work.

25 A further object of the invention is the provision of improved means for operating the movable jaw of the clamp or vise.

Other objects of the invention will be hereinafter stated.

30 In the accompanying drawings, Figure 1 is a perspective view of our improvement. Fig. 2 is a view in elevation of a guiding device applied to the end of the file and co-operating with the flat table of the clamp in 35 producing precisionized contour of the teeth operated on by said file. Fig. 3 is a longitudinal vertical section of the device illustrated in Fig. 2, a portion of the file being represented in elevation. Fig. 4 is a view in 40 elevation of a stop-pin, hereinafter described. Fig. 5 is a transverse vertical section on line 5 5 of Fig. 1, showing the base of the clamp in section. Fig. 6 is a transverse section of the file, taken on line 6 6 of Fig. 1. Fig. 7 is a 45 side elevation of the saw-clamp; and Fig. 8 is a front view of the saw-clamp, showing the gage in dotted lines.

Like numerals designate similar parts throughout the several views.

50 Referring to the drawings, the numeral 5 designates in a general way an improved saw-clamp in which the details of our invention are embodied, and said clamp is an im-

provement on the type of clamp covered by the patent to Robert S. Brown, dated Sep- 55 tember 12, 1899, No. 632,694, to which reference may be had. This improved clamp comprises a hollow body portion 6, open at its rear and provided with a bottom wall 7, which rests upon a table 8 or other structure 60 to which the clamp is to be secured. Depending from this hollow portion 6 is an arm or standard 9, having a right-angular projection 9', in which a clamping-screw 10 is threaded, said screw having a manipulating- 65 handle 10'.

Designated by 12 is the movable jaw of the clamp, which is normally forced inward to its work by devices hereinafter described, said jaw having a depending tailpiece 12' and 70 the stationary jaw a rib or projection 9² on its standard 9. This movable jaw has a flat clamping-surface 12² and is preferably made of structural-iron shape, as illustrated in Fig. 5. 75

Projecting in the construction shown rearwardly from the stationary jaw 13 of the clamp is a flat file-guiding surface or table 14, which coöperates with a device secured to the 80 end of the file and serves to guide said file in its movement, said device also preventing the dropping of the file and causing each tooth to be sharpened in an exact predetermined manner.

For operating the movable jaw of the 85 clamp any desired means may be employed—for instance, those set forth in the Brown patent aforesaid—but for accomplishing this result we prefer to employ a spring 15, which is connected at one end to a lever-arm 16, 90 rigid with a shaft 17, (see Fig. 7,) said shaft carrying at each end an arm 18, swinging upon a rod 19, connecting ledges 20 20', located, respectively, on the lower end of the standard 9 and beneath the overhang of the 95 fixed jaw 13. A rod 21 passes through the opposite ends 18' of the arms 18, and this rod has ends 18² projecting from said arms and to which the ledges 22 at the lower end of the fixed jaw and 22', beneath the overhang at 100 the upper part of said jaw, are attached.

As will be observed, the shaft 17 and its arms 18 18' constitute a frame swinging upon the rod 19, while the movable jaw 12 has a slight oscillating motion upon the ends of the 105 rod 21 to enable rocking movement of said

movable jaw to take place without binding. When the handle 16² is pushed inward, the frame, consisting of the shaft 17 and its lever 16 and arms 18 18', swings around the rod 19 as a fulcrum against the tension of the spring 15, connected to lever-arm 16, and as the movable jaw swings in a comparatively long arc it is first slightly withdrawn from the fixed jaw to release the saw and then par-
 5 takes of a motion substantially parallel to said fixed jaw. When pressure is removed from the handle 16², the spring 15 immediately swings the frame just described in an opposite direction until this movement is ar-
 10 rested by the engagement of the jaw 12 with the saw-blade, said saw-blade being thereby clamped firmly in the desired position against the jaw 13.

Lever-arm 16 is provided with an extension 16' beyond its shaft 17, said extension having at its end a handle or grasping-surface 16². At its rear extremity the spring 15 is connected to a rod 23, said rod being adjustable in a sleeve 24, having a hooked projection 24', which fits over one of the project-
 20 ing side plates 25 25' of the hollow base 6, as shown in Fig. 5. A hand-nut 26, threaded upon the rod 23 and bearing against the sleeve 24, serves to actuate said rod, and thus
 25 adjust the tension of the spring 15. Frequently it is necessary to release the means for normally forcing the movable jaw against the saw, and in the present instance this may be readily accomplished by detaching the
 30 hook or projection 24' of sleeve 24 from the extension 25' of the base 6. For sharpening the saw any desired means may be employed, so far as the peculiar construction of the clamp is concerned; but for accomplishing
 35 this result there are shown a file-guide and a file of peculiar form, the latter secured at one end in said guide, and this file-guide is designated generally by the numeral 27 and comprises a chambered carrier 28, on which the
 40 clamp for the end of the file is mounted.
 45

Designated by 29 is a bolt recessed in its head 29' to fit over an eccentric 30, said eccentric being secured by a pin 31' to a shaft 31, having a knurled manipulating-handle
 50 32, by which it may be actuated to raise and lower the carrier 28 and the eccentric, being mounted at its ends in bearings of said carrier. This pin 31' projects at one end, as at 31², beyond the periphery of the eccentric,
 55 and it works in a slot in the bolt-head and serves as a stop to limit the movement of the eccentric in either direction by engaging the bottom wall of the slot in head 29'. Projecting from the head 29' is a threaded stem 32,
 60 provided with a perforation for the reception of the round end 33 of a file 34, said file having a manipulating-handle 35. Threaded upon the stem 32 is a hand-nut 36, provided at intervals in its knurled portion with a series of sockets 37 for the reception of a pin,
 65

hereinafter described, and by which it may be manipulated to release or tighten the clamp.

Integral with the shaft 31 are trunnions 38, upon which are journaled antifriction-wheels 39. As will be obvious, when the shaft 31 is
 70 turned the eccentric will cause the carrier to be raised and lowered, thereby varying the vertical relation of the carrier 39 with respect to the table on which it is operated, and thus changing the altitude of said carrier and its
 75 connected parts and varying the height of the file.

Preferably we provide a file 34 with slightly-rounded corners 34', (see Fig. 6,) which will prevent cracks or checks from starting in the
 80 gullets of the saw-teeth.

Designated by 40 and shown in detail in Fig. 4 is a pin which serves to limit the motion of the file when feeding the saw. This pin is of peculiar form and is provided with a
 85 knurled head 40', with a threaded stem 40², adapted to be inserted in a corresponding seat of the table 14, and with a reduced projection 40³, which is adapted to be inserted in the sockets 37 of the nut 36. Said pin there-
 90 fore serves a dual purpose, for it not only acts as a stop-pin to limit the feed movement of the file, as stated, but may also be utilized as a manipulating device for the nut 36. When this nut is loosened, the small eccen-
 95 tric, the hand-wheel 32 of which is provided with a socket 32' for the reception of a pin 32², may be utilized to raise and lower the file in the manner described, and thus adapt it to cooperate with saw-teeth gullets which vary
 100 in height from the face of the clamping-jaws. Furthermore, by adjusting this eccentric files of various sizes may be employed for saw-teeth differing in pitch. These saw-teeth will naturally demand finer or coarser
 105 files and the differences of measurement between the center of the file and its lowest point indicate the depth of the gullet of the tooth. By adjusting this eccentric partial variations in the center of the file due to the
 110 rotation of the same to gain a difference in the "hook" of the teeth may be readily accommodated. This single knurled nut 36 serves both to clamp the file and the eccentric by forcing said eccentric against the
 115 bearings of the carrier in which it is journaled, a slight space being left between the top of the bolt-head and the under side of the carrier to permit sufficient vertical movement to enable this result to be accomplished,
 120 and as the trunnions 38 constitute the ends of the shaft 31 of said eccentric the height of the roller-centers may thus be readily regulated. When the knurled nut has been re-
 125 leased, the file may be readily withdrawn from the opening in the stem 32, or by means of the knurled hand-grasp 32 at the left of the shaft 31 the eccentric may be rotated and the center of height of the file varied, as conditions may require.
 130

Designated by 41 is a common form of gage adjustably supported by the fixed jaw of the clamp and consisting in the present case of a flat plate 42, having a straight longitudinal upper edge disposed in parallelism with the upper edges of the clamping-jaws and upon which the back of the saw may rest. This gage is adjustable and is provided with an oblique face 43, in which an inclined slot 44 is formed. A binding-screw 45 passes through the slot of the gage and serves to hold the same in a fixed position when it has been adjusted. To change the position of this gage the binding-screw is loosened, and the gage, can then be moved either up or down, and when properly adjusted said screw is tightened to hold the gage firmly in place. In feeding the saw this gage is of great importance, for it prevents the tilting of said saw when it is advanced by the file.

A washer 47, having a semicircular groove 47', is slipped over the stem 32 and clamps the end of the file against the similarly-grooved top of the carrier 28.

In the operation of our improvements a saw (designated by 46 and shown as of the band-saw variety, although the invention is limited to no particular kind of saw) is placed between the jaws of the clamp-rests upon the gage 41 and is held with sufficient firmness in position by the spring 15 and connections described to retain the saw in place for the filing operation. To manipulate the movable jaw of the clamp, the lever 16 is operated, and this, through the lever-arms 18, will open said jaw to enable the saw-blade to be placed in position on the gage 41, and after said lever is released the spring 15 immediately closes said movable jaw upon said saw-blade. A file of the proper kind having been selected, the rounded or otherwise shaped end of said file is clamped in position in the manner described and then by reciprocating the file transversely of the clamp the teeth are sharpened. When the teeth within the capacity of the clamp have been sharpened, it is necessary to feed the saw, and this is readily accomplished by the file, which is moved from left to right until it abuts against the stop-pin 40 in the manner above stated, tilting of the saw being prevented by the gage, as stated. In this feeding operation pressure is applied to the top of the nut 37 by the left hand, thus holding the wheels 39 upon the table, when by grasping the handle 35' the file in engagement with a saw-tooth may be moved from left to right until it abuts against the stop-pin 40. In this operation the wheels 39 serve as a rolling fulcrum upon which the file guide or carrier is mounted, said wheels traveling in an arcuate path over the part of the table upon which the guide is located during the feeding operation. By holding the movable jaw against the fixed jaw in the manner described the saw is

clamped with yielding pressure and the saw may be readily advanced longitudinally of the clamp without opening the jaws thereof.

By employing a file-guide and flat table or guiding-surface in the manner described, projecting from one of the jaws, the file is caused to move in practically a horizontal line and no dip or dropping of the same is permitted.

Many changes may be made in the construction of our device and still be within the purview of the invention, and said invention is not limited to any particular style of file-guide nor to the use of any specific form of file. Furthermore, the stop-pin 40 may be made adjustable as regards the width of the table 14, to thus limit the amount of feed, and the file may be guided and the saw clamped by various devices different from those shown and described without departure from the invention.

Having thus described our invention, what we claim is—

1. The combination, with a saw-clamp, of a guiding-surface projecting from one of the jaws thereof; and a stop upon the guiding-surface, said stop serving to limit the movement of a saw-feeding device.

2. The combination, with clamping-jaws, one of which acts with yielding pressure, of a table projecting from one of said jaws; a gage between said jaws; and a stop upon the table for limiting the movement of a saw-feeding device.

3. A saw-clamp comprising a fixed jaw; a movable jaw; a pivoted lever; devices connecting the lever and said jaws; a spring attached to the lever, and serving to actuate said lever in one direction; and a rod to which the spring is also attached, said rod being removably mounted on the frame of one of the jaws.

4. A saw-clamp comprising a fixed jaw; a movable jaw; a device connecting the movable and the fixed jaws; means whereby said device may be actuated; a spring connected to said means; a sleeve having a device by which it is removably attached to the frame of one of the jaws; a rod in said sleeve, said rod being connected with the spring; and means for adjusting said rod to vary the tension of said spring.

5. The combination, with fixed and movable jaws, of a movable device; arms rigid with said device, and connecting the jaws; a lever rigid with the device; a spring connected to one end of said lever; a sleeve detachably connected to the frame of one of the jaws; a screw-threaded rod in said sleeve, and to which one end of the spring is attached; and a nut for adjusting said rod.

6. The combination, with a frame having a projecting side plate, and carrying a fixed jaw, of a sleeve having a projection hooked over said projecting side plate; a rod in said sleeve; means for adjusting said rod; a

spring connected to the rod; a pivoted lever also connected to the spring; a movable jaw; and means operated by said pivoted lever for actuating said movable jaw.

5 7. A saw-clamp comprising a fixed jaw; a movable jaw; a pivoted lever; devices connecting the lever and said jaws; a spring attached directly to the lever, and serving to actuate said lever in one direction; a device
10 to which the spring is also attached, said device being removably mounted on the frame of one of the jaws; and means for adjusting said device to alter the tension of the spring.

15 8. The combination, with fixed and movable jaws, of a frame comprising a shaft having a pair of arms rigid therewith, and projecting from opposite sides thereof; a rod

connected to the frame of the fixed jaw, and upon which the inner ends of said arms are fulcrumed; a rod passing through the other 20 ends of said arms, and entering parts of the movable jaw; a spring connected to the shaft, and serving to cause the same to close the movable jaw; and a device removably connected to the frame of the fixed jaw for 25 regulating the tension of the spring.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES H. PARKS.
ROBERT S. BROWN.

Witnesses:

R. ANDERSON,
S. S. GROTTA.