

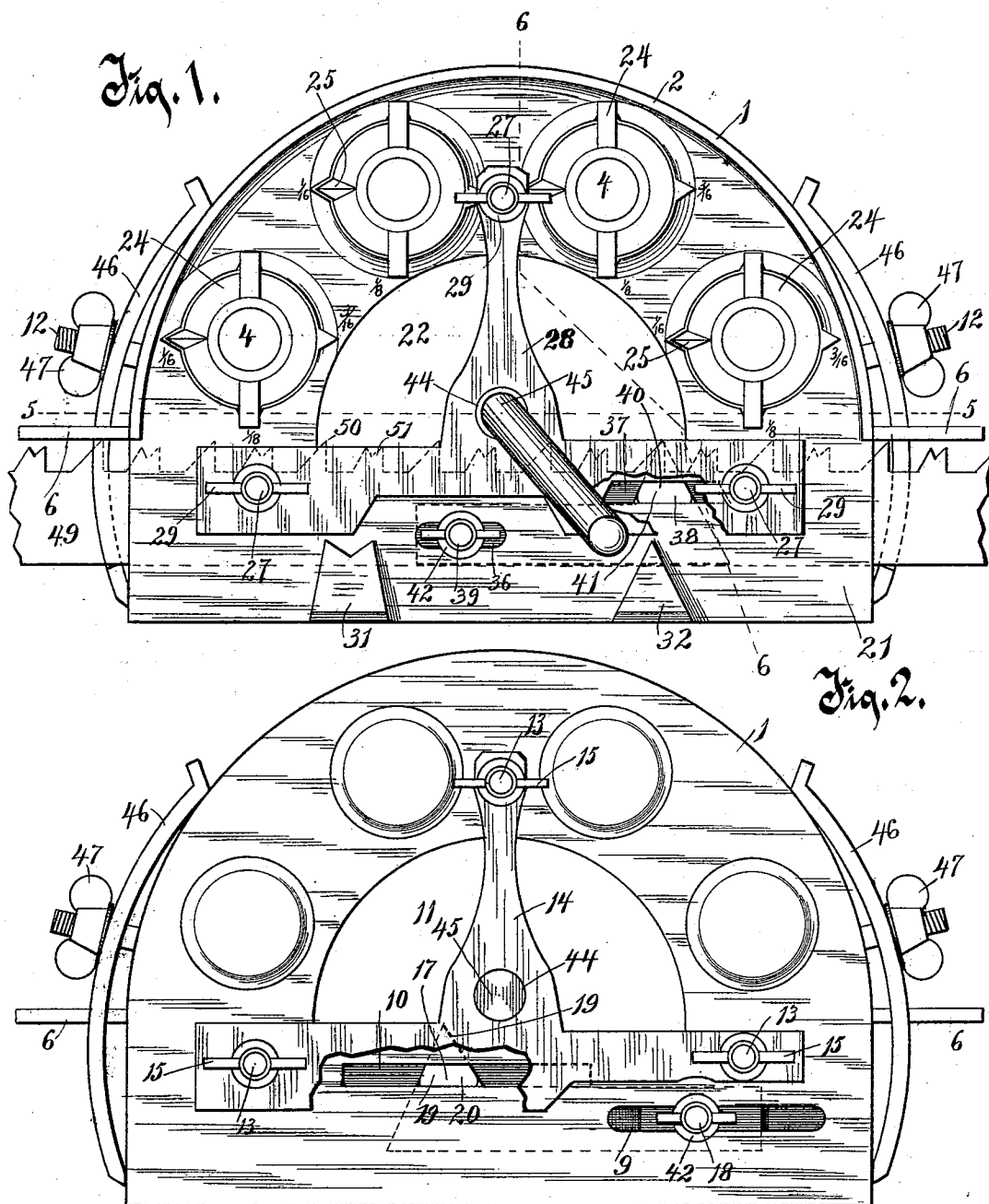
(No Model.)

3 Sheets—Sheet 1.

A. HOLECEK.
SAW SETTING MACHINE.

No. 505,880.

Patented Oct. 3, 1893.



Witnesses.

A. K. Keeney
Anna C. Faust.

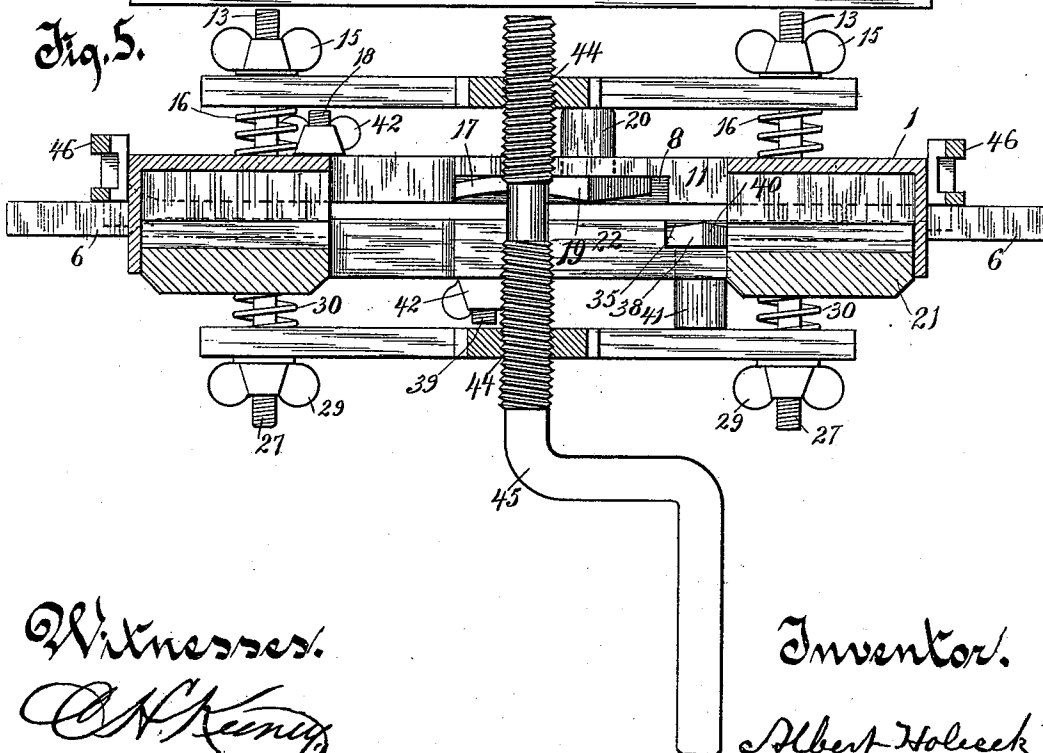
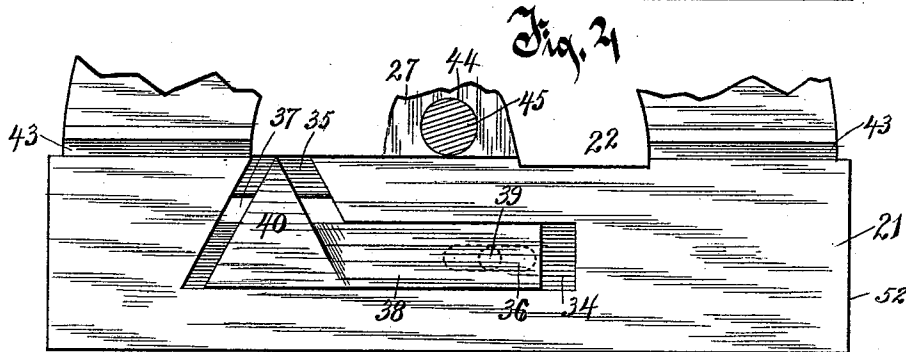
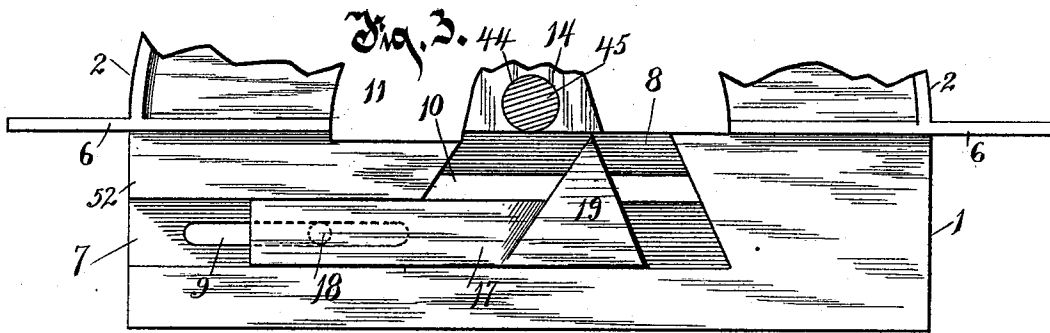
Inventor.

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By Benedict Mossell
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3 Sheets—Sheet 3.

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Fig. 6.

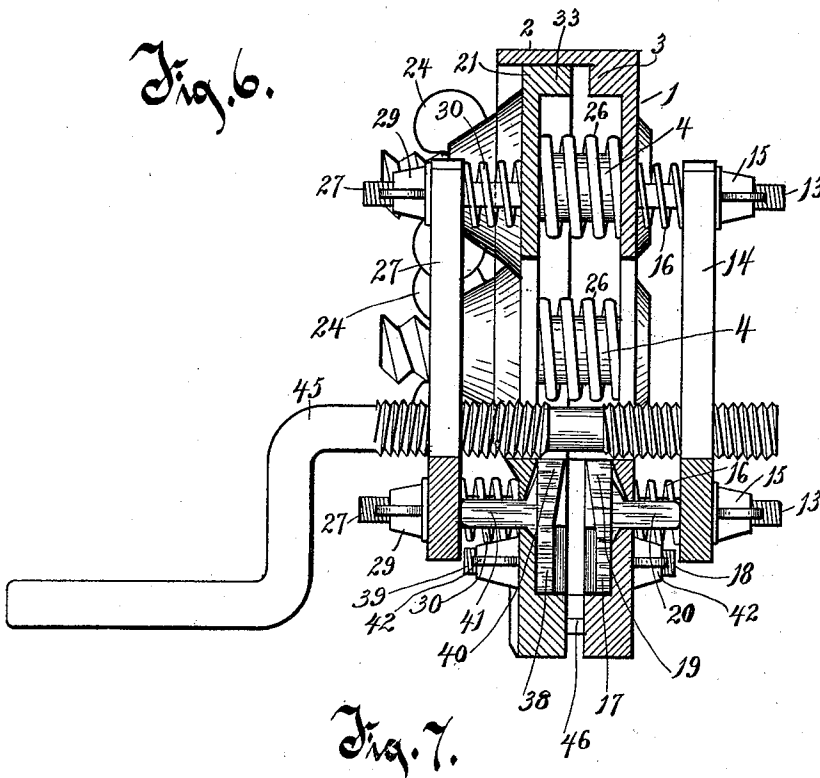


Fig. 8.

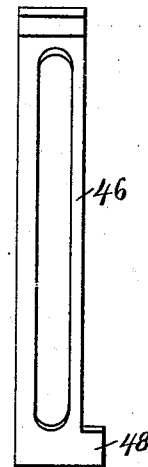
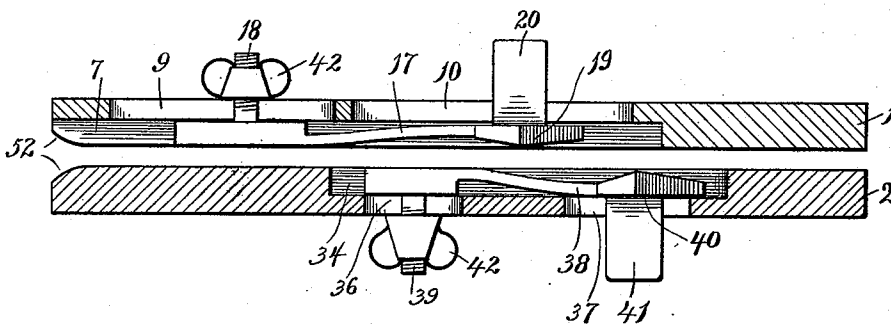


Fig. 7.



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UNITED STATES PATENT OFFICE.

ALBERT HOLECEK, OF HURLEY, WISCONSIN.

SAW-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 505,880, dated October 3, 1893.

Application filed June 5, 1893. Serial No. 476,595. (No model.)

To all whom it may concern:

Be it known that I, ALBERT HOLECEK, of Hurley, in the county of Ashland and State of Wisconsin, have invented a new and useful Improvement in Saw-Setting Machines, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in saw-sets.

The objects are to provide a machine of the above character, capable of accurately and quickly setting the teeth of any kind of saw, from the largest to the smallest, as well as saws having inclined blades, the invention comprehending a structure whereby a machine is provided which can be adjusted not only to different saws, having varying spaces between the teeth, but also to different widths of the saw blades, and different thicknesses thereof.

A further object is to provide means whereby in sharpening or filing the teeth of a saw, an accurate guide is at all times furnished for determining the exact amount the teeth should be filed down.

With the above objects in view the invention consists in the improved construction and combination of parts hereinafter more fully set forth.

In the accompanying drawings, Figure 1, is a front elevation of the device with a part broken away. Fig. 2, is a similar view of the rear side of the machine. Fig. 3, is a fragmentary view of the lower part of the rear section of the saw set, illustrating the front face of said section, and showing clearly the tooth setting spring plate. Fig. 4, is a similar view of the inner face of the front section. Fig. 5, is a horizontal section on the line 5—5 of Fig. 1. Fig. 6, is a vertical section on the line 6—6 of Fig. 1. Fig. 7, is a plan view, in section through the slots, and Fig. 8, is a detail in side elevation of one of the slotted adjustable plates.

Like numerals of reference denote like parts throughout the several views.

Referring to the drawings, the numeral 1 indicates the rear or back section of the machine, the top edge of which is preferably semi-circular in form, in order to effect economy in weight, and its bottom edge straight

to rest on the supporting medium. Extending forward from the edge of the section 1, is a flange 2, conforming to the circular contour of said edge, and having its opposite ends terminating short of the lower straight edge of the section. A spacing lug or stop 3 is arranged at the top, immediately beneath the flange 2.

The numerals 4 indicate bolts extending forward from the front face of section 1. The opposite ends of the circular flange 2 join ribs or projections 5, 5, running at right angles thereto, and extending inward some distance, and also outward beyond the edge of section 1 laterally. The lower thickened portion of section 1 is recessed, the narrowest part of said recess being indicated by the numeral 7, and the widest portion by the numeral 8. These communicating recesses 7 and 8 are provided, respectively, with slots 9 and 10, the bordering edges of the latter slot being beveled, as clearly shown in Fig. 6. About centrally, section 1 is provided with an aperture 11, conforming to the general contour of the section. Above the laterally-projecting portions of ribs 5—5 extend, circumferentially from opposite points of the circular flange 2, pins 12, 12. From the rear side of the section 1 project pins or bolts 13, 13 and 13, which pass through apertures in the arms of an inverted T-shaped bracket 14. The ends of the bolts or pins 13 are threaded to receive thumb nuts 15, which bear against the bracket, and hold the same in place. Surrounding the pins, and confined between the inner sides of the arms of the bracket and the rear face of section 1, are coiled springs 16, which bear equally on the bracket, and serve to hold it normally out.

The numeral 17 indicates a spring plate, preferably of steel, and adapted to serve the function of bending the saw teeth in one direction. This spring plate fits in the recesses 7 and 8, and is provided with a rearward-extending pin 18, which passes through slot 9, and by means of which the spring may be properly adjusted for operation from the rear side of the machine. Toward its inner end the thickness of the metal is diminished so as to afford as much elasticity as possible to that portion of the spring. The inner extremity of the spring is formed with an ap-

proximate diamond-shaped lug 19, which in turn, is formed or provided with a rearward-extending lug 20, having its top and bottom edges, preferably, beveled to register with the bevels of the slot 10, and thereby form a close adjustment, as shown more clearly in Fig. 6.

This lug projects rearward through the slot 10. The numeral 21 indicates the other half section of the set, which is of the same general outline as the opposite section although its circular edge is somewhat smaller circumferentially so as to fit beneath the confining and guiding flange 2. Section 21 is provided with a central aperture 22 registering with and corresponding to the similar aperture of section 1, and is further provided with a series of smaller apertures, which receive the bolts 4 of section 1, thumb-nuts 24 turning on the threaded ends of these bolts. These nuts are each provided with a projecting point or index 25, which is adapted to be brought into register with the marks of a scale arranged on the raised outer bordering edge of each aperture 23, as clearly shown in Fig. 1, whereby the proper adjustment of section 21 inward is determined, as will be hereinafter referred to. Surrounding the bolts 4, and confined between the rear face of section 21 and the front face of section 1, are coiled springs 26, against which section 21 works when adjusted inward, the springs serving to maintain an even inworking of the section. Projecting forward from the front face of section 21 is a series of pins 27, which pass through apertures in the arms of an inverted T-shaped bracket 28, similar to bracket 14. The ends of these pins are threaded to receive thumb-nuts 29, which bear against the arms of the bracket. Surrounding the pins 27, and confined between the inner sides of the arms of the bracket and the outer face of section 21, are springs 30, which normally hold the bracket out in the position shown in Fig. 6.

The numerals 31 and 32 indicate indexes shown at the lower portion of Fig. 1, of the shape, respectively, of different forms of saw teeth, and located at different parts of the length of the lower edge of the outer face of section 21, the function of which will be hereinafter fully described. The inner face of section 21 is provided at its edge with a lug or stop 33, which is adapted to contact with lug or stop 3 of section 1, when section 21 is moved inward its full limit. The lower portion of the inner face of section 21 like section 1, is thickened, and in this thickened portion is provided a recess 34, which at one end is widened to form the communicating recess 35.

The lateral bordering edges of this latter recess are inclined in opposite directions as clearly shown in Fig. 4. The communicating recesses 34 and 35 are provided, respectively, with slots 36 and 37, the top and bottom bordering edges of the latter being beveled or inclined, as shown in Fig. 6.

Within the recesses 34 and 35 fits a second

tooth setting spring plate 38, similar to plate 17 and provided at one end with a pin 39 which passes through the slot 36, and at its opposite end with an approximately diamond-shaped lug 40, the edges of which are inclined or beveled to correspond to and register with the inclined or beveled lateral edges of the recess 35. This lug, in turn, is formed or provided with a rearward-extending lug 41, said lug having its top and bottom edges beveled to correspond with the similar bevels of the bordering edges of slot 37, as shown in Fig. 6. The end of lug 41 projects beyond the front face of section 21. Both the pin 39 and the pin 18 of the two spring plates are threaded on their ends to receive thumb-nuts 42, 42, by means of which the tooth setting springs are held in adjusted position.

The numerals 43, 43 indicate two grooves arranged upon the inner face of section 21, shown in Fig. 4, said grooves receiving the longitudinal ribs or projections 6, 6, of section 1, when section 21 is adjusted toward the former section. The vertical arms of the two inverted T-shaped brackets are provided with right and left handed registering threaded apertures 44, 44. Through these apertures passes a crank shaft 45, provided with right and left hand threads, separated by a plain medial surface, said right and left hand threads engaging the respective right and left handed threads of the apertures. When this shaft is turned in one direction the inverted T-shaped brackets are made to approach each other, and when turned in the opposite direction recede from each other.

The numeral 46 indicates a slotted adjustable plate, of spring metal, shown in detail in Fig. 8. Two of these plates are used in connection with my invention, and arranged at opposite points of the circumferential edge of the saw set, as shown clearly in Figs. 1 and 2. The pins 12, 12 pass through the slots of these plates, and thumb nuts 47 engaging the threaded ends of the pins serve to hold the plates in adjusted position. The lower ends of the adjustable spring plates 46 are provided with forward-extending lugs 48.

It will be noticed from Fig. 1 of the drawings that the upper edge of the left hand horizontal arm of the inverted T-shaped bracket 28 is on a lower plane than the corresponding edge of the right hand horizontal arm of said bracket, while from an inspection of Fig. 2 it will be seen that the upper edge of the right hand horizontal arm of bracket 14 is on a lower horizontal plane than the corresponding left hand arm. This constitutes an important feature of my invention in permitting a person to file the teeth of a saw, preparatory to setting, the proper distance. The horizontal arms of the brackets 14 and 28, therefore, having their upper edges depressed or lowered, represent the guiding line down to which the points of the clearing teeth are filed. Therefore, in operating from the front of the machine a file is passed through the register-

ing central apertures 11 and 22 of sections 1 and 21, respectively, on the left hand side, above the index 31, which index represents a clearing tooth, and the clearing teeth only are filed down even with the lower edges of the brackets; while on the right hand side, above index 32 which represents a cutting tooth, the cutting teeth are filed down to an even line with the raised edges of the horizontal arms of the brackets.

In Fig. 1 of the drawings, the saw is shown as properly inserted in place in the machine, the blade of said saw being indicated by the numeral 49, the cutting teeth by the numeral 50, and the clearing teeth by the numeral 51.

In the operation of the device, the saw blade is first adjusted between two sections of the machine, as shown in Fig. 1. The distance between the two sections to adapt the same to different thicknesses of saws, is adjusted by means of the thumb nuts 24, section 21 being moved a required distance toward or within section 1, by turning each thumb nut 24 until the index of each nut points to the same scale mark arranged peripherally around the bolt holes. The threads on the screws are shown as arranged just one-fourth of an inch apart, so that when the nut is turned one complete revolution it will travel that distance inward on the screw, and when all the nuts have thus been turned, the section 21 of the machine will have been moved inward one-fourth of an inch. If it is desired to adjust section 21 a less distance inward, say, one-sixteenth of an inch, the nuts are given only a quarter turn so that the pointers will indicate the one-sixteenth mark, as shown in Fig. 1.

I have only shown on the drawings several of the marks of the scale, but it is obvious that these may be subdivided into as many more subdivisions as is found desirable and necessary. When the section 21 is thus adjusted inward, the space between the two sections is left so as to be slightly greater than the thickness of the saw blade, but just equal to the width the upper edge of the saw will be when the cutting teeth are bent or set.

The next step is to adjust the two spring-setting plates so that the distance between the end lugs of the same will be equal to the distance between the cutting teeth of the saw. This is accomplished by loosening the thumb nuts 42, 42 fitting the threaded ends of pins 18 and 39. The spring plates are then readily moved by means of said pins, and when adjusted the desired distance, the thumb nuts are again tightened.

The next step is to draw the inverted T-shaped brackets 14 and 28 toward each other, which is accomplished by means of the crank shaft 45, as will be readily understood. After the brackets have been moved a certain distance they will contact with the lugs 20 and 41 of the spring plates 17 and 38, respectively. Said lugs, of course, will have the effect of causing lugs 19 and 40 to bend the cutting

teeth in opposite directions, the bending continuing until the teeth contact with the sides of the respective sections. It will be noticed from Fig. 6 that the lugs 19 and 40 have their greatest width at their upper edges, whereby the teeth only of the saw are engaged by said lugs. After the first two teeth are bent in the manner pointed out, the saw blade is moved longitudinally until the next two teeth are in proper position to be engaged by the lugs 19 and 40, and this operation is continued until the setting is completed. In inserting the saw it is guided to place by the ribs or projections 6, 6. When saws of varying widths are inserted, the slotted adjustable devices 46 are adjusted so that the lower lugs 48 thereof will engage and catch under the lower edges of said saws and thus hold them to place. The adjustable devices can also be utilized to advantage when saws having inclined blades are used. In such cases, the thumb nuts 47 are made to impinge against the slotted plates very lightly, so as to allow said slotted plates a slight movement, as the width of the blade increases in the movement of said blade.

It will be noticed from Fig. 7 of the drawings that the opposing edges of the two sections of the machine at one end are flared, as indicated at 52. This provides a flaring opening, and when it is desired to straighten out the teeth of a saw which require resetting, or for other purposes, the saw blade is drawn through, and as the teeth are acted upon by the sides of the more contracted space between the sections, of course the teeth are straightened.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A frame provided with a central opening and with a space below the opening for the reception of a saw blade, the teeth of the saw adapted to project up above the lower horizontal bordering edge of the opening, a portion of said horizontal bordering edge being on a higher horizontal plane than the other portion, said higher plane forming a guide line down to which the cutting teeth are to be filed, and the lower plane a cutting line down to which the clearing teeth are to be filed, substantially as set forth.

2. In combination, with a frame having a central opening with a space below the opening for the reception of a saw blade, the teeth of the saw adapted to project up above the lower horizontal bordering edge of the opening, a portion of said horizontal bordering edge being on a higher horizontal plane than the other portion, said higher plane forming a cutting line down to which the cutting teeth are to be filed, and the lower plane a cutting line down to which the clearing teeth are to be filed, of indexes arranged upon the frame, said indexes indicating the places where the cutting teeth and clearing teeth, respectively,

are to be filed down to the respective lines of the higher and lower planes of the bordering edge, substantially as set forth.

3. In a saw setting device, the combination of a frame provided with a space for the insertion of a saw blade, spring teeth-setting plates sliding longitudinally in recesses in the frame upon opposite sides of the saw space of the frame, said plates provided at one of their ends with pins passing through slots in the respective recesses, thumb nuts working on the threaded ends of said pins whereby the operating ends of the plates are adjusted to the width of the space between the teeth to be set, and means for operating the operating ends of the teeth-setting plates, whereby the teeth are bent alternately in opposite directions, substantially as set forth.

4. In a saw setting machine, the combination, of a frame provided with a space for the insertion of the saw blade, and with pins or bolts projecting from opposite sides, said pins or bolts having threaded ends to receive thumb nuts, spring teeth setting devices adjustable to the width of the space between the teeth to be set, said teeth setting devices provided with lateral lugs extending through slots in opposite sides of the frame, brackets upon opposite sides of the frame, said brackets provided with apertured arms to receive the pins or bolts of the frame, and a crank-shaft provided with right and left threads adapted to engage correspondingly threaded apertures in the respective brackets, whereby said brackets are adjusted toward each other for the purpose of contacting with the lateral lugs of the teeth setting devices, substantially as set forth.

5. In a saw setting machine, the combination, of a frame provided with a space for the insertion of the saw blade and with pins or bolts projecting from opposite sides, said pins or bolts having threaded ends to receive thumb nuts, spring teeth-setting devices adjustable to the width of the space between the teeth to be set, said teeth-setting devices provided with lateral lugs extending through slots in opposite sides of the frame, brackets upon opposite sides of the frame, said brackets provided with apertured arms to receive the pins or bolts of the frame, coiled springs upon said pins or bolts and disposed between the arms of the brackets and the sides of the frame, and a crank shaft provided with right and left threads adapted to engage correspondingly threaded apertures in the respective brackets, whereby said brackets are adjusted toward each other for the purpose of contacting with the lateral lugs of the teeth setting devices, substantially as set forth.

6. In a saw-setting machine, the combination, of a frame provided with a space for the insertion of the saw blade, spring teeth-setting devices adjustable to the width of the space between the teeth to be set, said teeth-setting devices provided each upon one end with an

upward extending lug, said lug of greatest width at its upper edge, whereby when said teeth-setting devices are operated, only the widened portion of the lug will contact with the teeth, and no contact will be made with the saw blade, and devices for actuating the spring-setting devices, whereby the lugs are made to engage the teeth and bend the same alternately in opposite lateral directions, substantially as set forth.

7. In a saw setting machine, the combination, of a frame consisting of two sections between which the saw is adapted to be passed, one of said sections provided with a forward-extending edge flange, means for adjusting the other of said sections toward and from the first named section, and beneath the guiding and confining flange, so as to adapt the sections to the width required for the bent teeth, and mechanism for setting the teeth, substantially as set forth.

8. In a saw setting device, the combination, of a frame provided with a space for the reception of the saw blade, and with pins or bolts projecting from opposite sides, said pins or bolts having threaded ends to receive thumb-nuts, spring teeth-setting devices adjustable to the width of the space between the teeth to be set, said teeth-setting devices provided with lateral lugs extending through slots in opposite sides of the frame, brackets upon opposite sides of the frame, said brackets provided with apertured arms to receive the pins or bolts of the frame, and a portion of the horizontal arms being on higher horizontal planes than the other portions, the higher horizontal planes forming a cutting line down to which the cutting teeth are to be filed, and the lower planes a cutting line down to which the clearing teeth are to be filed, and means for bringing the brackets toward and from each other to contact with the lateral lugs of the teeth setting devices when adjusted toward each other, substantially as set forth.

9. In a saw setting machine, the combination, of a frame, consisting of two sections between which the saw is adapted to be passed, said sections provided with grooves, terminating at one end in widened portions, both the contracted and widened portions of said grooves being slotted, spring teeth-setting plates sliding in the grooves or recesses, each plate provided at one end with a pin passing through the slot in the narrow portion of the recess, and at the opposite end with an upward-extending lug having a supplemental outward extending lug passing through the slot in the widened portion of the recess, thumb nuts fitting the threaded ends of the pins, contact arms upon opposite sides of the frame, and means for bringing said arms toward and from each other to contact with the lateral lugs of the teeth-setting devices, substantially as set forth.

10. In a saw setting machine, the combina-

tion, of a frame consisting of two sections between which the saw is adapted to be passed, one of said sections provided with forward-extending pins or bolts, having threaded ends, and the other with apertures to receive the pins or bolts, the bordering edges of said apertures having suitable scales arranged thereon, thumb nuts turning upon the threaded ends of the pins, said thumb nuts provided with indexes or pointers adapted to be brought into register with any of the marks of the scales, and mechanism for setting the teeth substantially as set forth.

11. In a machine for setting saws, the combination of a frame provided with a space for

the reception of the saw blade, and also provided with opposite laterally projecting pins, slotted plates through which the pins pass, said plates provided at their lower ends with forward extending lugs, thumb nuts fitting the threaded ends of the pins, teeth-setting mechanism, and means for operating said teeth-setting mechanism, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT HOLECEK.

Witnesses:

P. M. MURPHY,
J. MAREAU.