

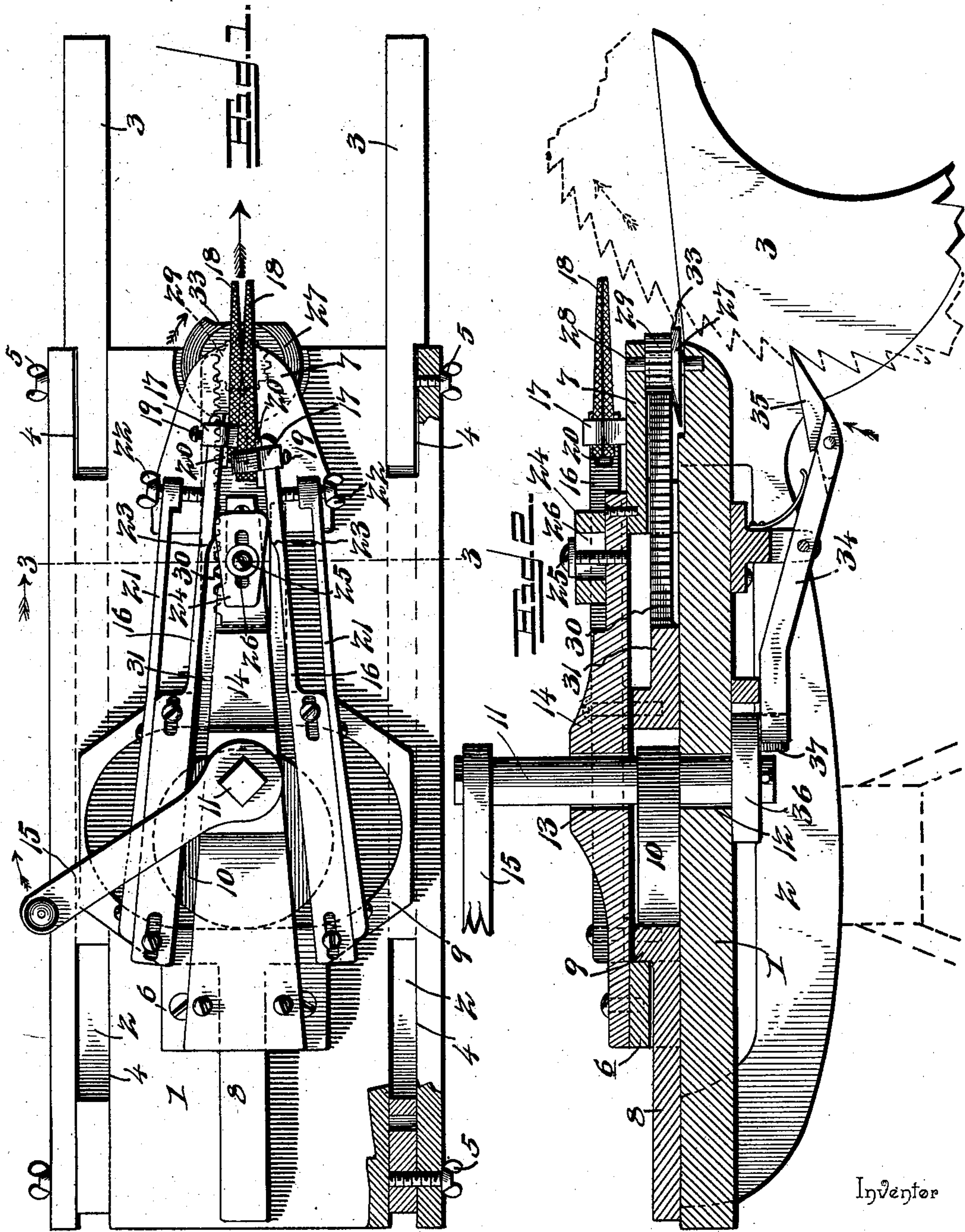
(No Model.)

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D. M. WILSON.  
GIN SAW FILER.

No. 601,191.

Patented Mar. 22, 1898.



Witnesses

*E. Stewart.* By *W. S. Attorneys,*  
*E. S. H. H.*

*David M. Wilson*

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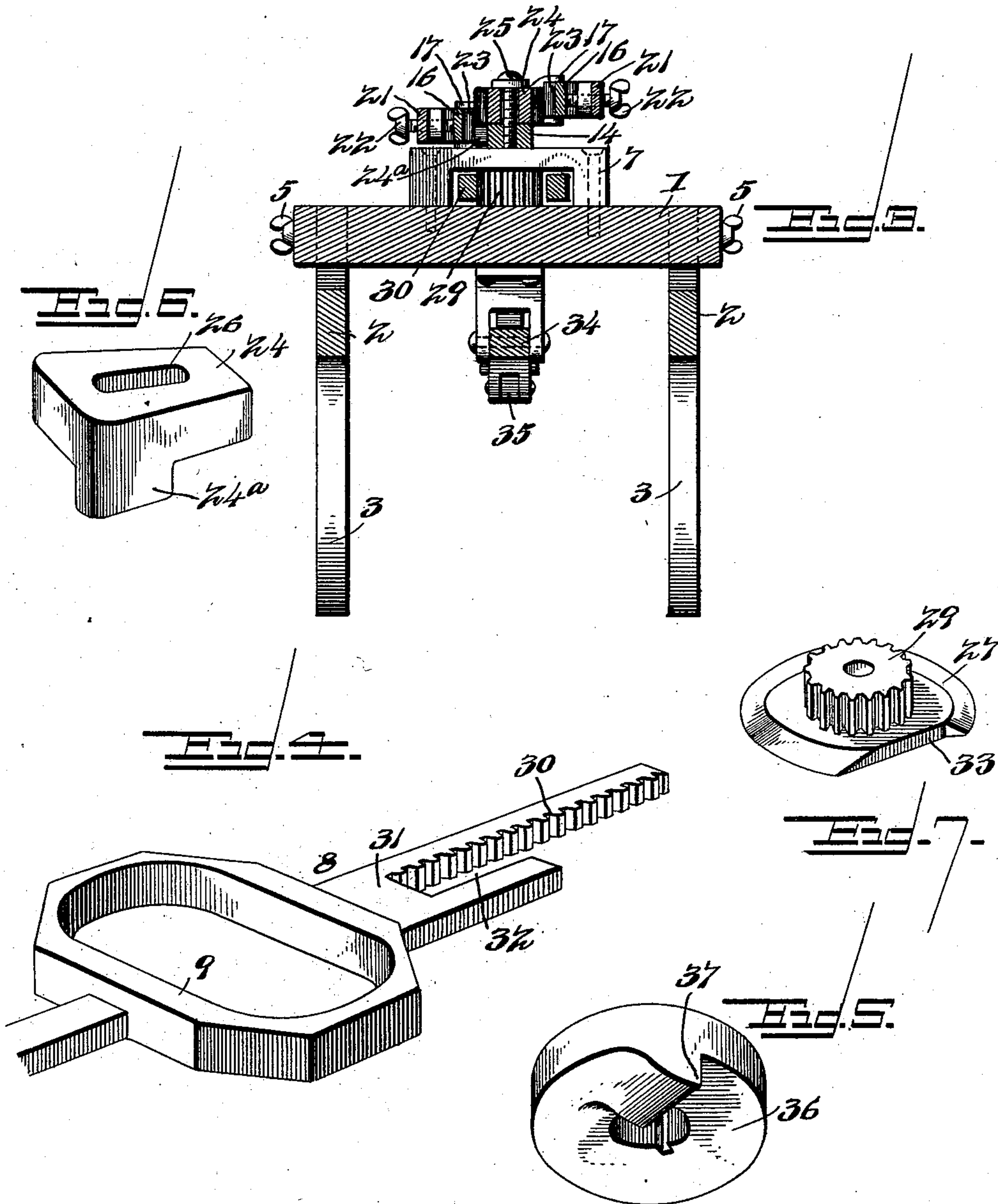
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Inventor

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# UNITED STATES PATENT OFFICE.

DAVID M. WILSON, OF KEMP, TEXAS.

## GIN-SAW FILER.

SPECIFICATION forming part of Letters Patent No. 601,191, dated March 22, 1898.

Application filed June 25, 1897. Serial No. 642,300. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID M. WILSON, a citizen of the United States, residing at Kemp, in the county of Kaufman and State of Texas, have invented a new and useful Gin-Saw Filer, of which the following is a specification.

My invention relates to gin-saw-filing machines, and has for its object to provide a compact and efficient mechanism having direct means for communicating motion to the reciprocatory and rotary files and for removing the same from contact with the saw-teeth during the feeding of the saw, and, furthermore, to provide suitable means for adjusting the various parts of the mechanism to suit saws of different kinds and having teeth arranged at different intervals and beveled at different angles.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a plan view of a saw-filing machine constructed in accordance with my invention. Fig. 2 is a longitudinal section of the same. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is detail view in perspective of the reciprocatory carrier detached. Fig. 5 is a similar view of the feed-lever-operating cam. Fig. 6 is a similar view of the file-arm-displacing cam. Fig. 7 is a similar view of the gumming-file.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In reducing my invention to practice I have constructed a machine which is adapted to be applied to saws of a ginning or equivalent machine without removing said saws from their position in the machine, and in order that the filer may be adapted for use in connection with any of the numerous ginning-machines in use I have adopted a construction of frame and filing mechanism whereby the file-carrying arms may be reciprocated in either a horizontal or a substantially vertical position, the latter position being preferable under certain circumstances in order that the frame of the filer may rest against the contiguous vertical portion of the frame of the

ginning-machine. The construction of the machine embodying my invention, however, is such as to adapt it to work with equal facility in all positions, and as it is desirable at times to dispose the filer in a horizontal position and support it at its rear end by means of trestles or the equivalents thereof—for instance, as when the frame of the ginning-machine is not suited to support and guide the same—I have illustrated the machine in this position, a portion of a frame or trestle for supporting the rear end of the machine being indicated in dotted lines in Fig. 2.

The frame of the filer consists of a plate 1, to which, contiguous to its rear end, are pivotally connected the rear ends of side arms 2, and said side arms terminate at their front ends in feet 3, which are adapted to be arranged upon opposite sides of a saw to be filed and to be seated upon the contiguous spacing-blocks, whereby adjacent saws are held in their proper positions. The front and rear ends of these side arms are fitted in suitable guides 4, formed in the contiguous portions of the supporting-plate 1, and the front ends of the arms are secured at the desired adjustment, to vary the pitch of the supporting-plate, by means of set-screws 5. By varying the pitch of the supporting-plate it is possible to adapt the machine for use in connection with saws of which the teeth vary in pitch as well as saws of different diameters.

Mounted to slide upon the supporting-plate in suitable front and rear guides 6 and 7 is a carrier 8, provided at an intermediate point with a yoke 9, in which operates an eccentric 10, carried by an operating-shaft 11, which is mounted in bearings 12 and 13, formed, respectively, in the supporting-plate and in a fixed longitudinal bar 14, supported terminally by said guides 6 and 7. A crank 15, or other means for communicating motion to the mechanism, is fitted upon the operating-shaft 11.

Fixed to and adapted to be reciprocated by the carrier are file-carrying arms 16, preferably of spring metal and constructed to exert a constant inward pressure and resist outward deflection, the extremities of said arms being provided with file-seats, which in the construction illustrated consist of keepers 17, adapted to receive the rear ends of files 18



and fitted with set-screws 19. Wedges 20 are adjustably fitted in the keepers when necessary to vary the angular positions of the files with relation to the file-carrying arms, said  
 5 wedges being interposed between the files and the arms and being adapted to vary the inclination of the former by the amount of their insertion. I also preferably employ auxiliary spring-arms 21, secured to the file-carrying  
 10 arms and provided with adjustable pressure-pins 22, consisting of set-screws or their equivalents to impinge against the outer sides of the file-carrying arms contiguous to their front ends and exert more or less pressure ac-  
 15 cording to the adjustment of the set-screws. It is obvious that the tension of the auxiliary spring-arms may be varied by the adjustment of said set-screws.

In operation the rotation of the eccentric  
 20 10 causes a reciprocatory movement of the carrier and a corresponding movement of the files 18 in contact with opposite sides of the saw-teeth; but in order to enable the reciprocatory files to be removed from contact with  
 25 the saw-teeth at the limit of the rearward movement of the carrier and thus provide for feeding the saw to bring different teeth successively into operative position I provide the inner sides of the file-carrying arms with cam-  
 30 faces 23 for coöperation with a file-arm-displacing cam or block 24, which is mounted for longitudinal adjustment upon the frame of the machine and is preferably secured at the desired adjustment by means of a set-  
 35 screw 25, extending through a longitudinal slot 26. It is obvious that by varying the adjustment of this cam-block 24 toward and from the front of the machine the point in the movement of the carrier at which the files  
 40 are displaced laterally to release the saw-teeth may be arranged to suit the conditions of operation and the diameter of the saw. The file-carrying arms are preferably arranged in different planes, and hence in order  
 45 to adapt the cam-block 24 to coöperate efficiently with both arms I have constructed it, as shown in Fig. 6, with an ear 24<sup>a</sup>, which projects toward the supporting-plate, and thus is arranged in the path of that file-car-  
 50 rying arm which is located contiguous to the plane of said plate.

In connection with the above-described mechanism I also employ a gumming-file 27, having a spindle 28 disposed perpendicular  
 55 to the plane of the supporting-plate 1 and having an attached pinion 29, with which meshes the teeth of a rack-bar 30, actuated by the carrier 8. This rack-bar is formed on the front arm or slide 31 of the carrier, the  
 60 latter being slotted, as shown at 32, to receive the pinion when the carrier is in its advanced position. The gummer, having a stationary spindle, whereby the file is incapable of reciprocatory movement to withdraw it from  
 65 and advance it into engagement with the saw-teeth I have provided it, in order to release the saw-teeth at intervals, with a flat or cut-

away portion 33, which is of sufficient depth to allow the saw-teeth to pass when located in a forward position or contiguous to the saw. 70

The feeding devices which I prefer to employ in connection with the mechanism, as above described, embodies an intermediately-pivoted feed-lever 34, carrying a yielding tooth 35, pivotally mounted upon the lever 75 and disposed at the opposite end in operative relation with a cam 36, fixed to the operating-shaft 11, preferably upon the opposite side of the supporting-plate from the file-carrying arms in order to be wholly independent 80 thereof in operation. This cam is provided at one point with an enlargement 37, which when brought into operative relation with the contiguous end of the feed-lever moves the latter from the plane of the supporting-plate, 85 and thereby moves the toothed end of the lever toward the plane of the plate to advance the saw the distance of one tooth in the direction indicated by the arrow thereon in Fig. 2.

It will be understood that the special construction of the files is immaterial to the es- 90 sence of my invention; but the ordinary three-cornered file is that which I have found to be particularly efficient in this connection, and hence I have shown the file-engaging keepers 95 17 of a construction adapted particularly for the reception of files of this class; but inasmuch as said keepers are detachably mounted upon the ends of the file-carrying arms it is obvious that they may be replaced by keep- 100 ers adapted to the special form of file which it is desired to employ.

Furthermore, it will be seen that the operation of the carrier is directly dependent upon an eccentric carried by the driving-shaft of 105 the machine, thus dispensing with intermediate connections, and that the feeding-cam is likewise carried by and hence receives its motion directly from the operating-shaft.

It will be seen, furthermore, that as the re- 110 ciprocatory files become worn after continued use the tension-screws 22 may be adjusted to apply more or less pressure of the auxiliary spring-arms 21 and thus add to the pressure of the file-carrying arms toward the plane of 115 the saw.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this in- 120 vention.

Having described my invention, what I claim is—

1. A gin-saw filer having a base-plate supporting filing mechanism and provided with 125 terminal longitudinally-alined open-ended slots, supporting-arms pivotally mounted at their rear ends in the rear slots, terminating at their front ends in feet, and provided with extensions operating in the front slots of the 130 base-plate, means for adjusting the pivotal points of the arms, and set-screws mounted in the walls of the front slots and impinging against said extensions of the arms to lock



them at the desired angular adjustment, substantially as specified.

2. A saw-filer having a supporting-plate, a reciprocatory carrier guided for longitudinal movement and having a laterally-elongated yoke, an eccentric operating in said yoke for imparting reciprocatory movement to the carrier, a cam carried by the spindle of the eccentric, file-carrying arms on the carrier, and a feed-lever having a tooth to engage the saw-teeth and terminally arranged in the path of said cam, substantially as specified.

3. A saw-filer having a reciprocatory carrier provided with a longitudinal rack-bar, and a terminal guide-arm spaced from the rack-bar, means for operating the carrier, file-carrying arms mounted upon the carrier, a rotary gumming-file having its spindle mounted in fixed bearings and provided with a pinion meshing with said rack-bar and operating between the same and the guide-arm, said gumming-file having a peripheral cut-away portion, and saw-feeding mechanism, substantially as specified.

4. A saw-filer having a reciprocatory carrier and means for actuating the same, of spring-actuated file-carrying arms reciprocated by the carrier, and having cam-faces, and a file-arm-displacing cam to cooperate with said cam-faces and laterally displace the file-arms, substantially as specified.

5. A saw-filer having a carrier, spring-actuated file-arms supported by the carrier and having cam-faces, means for actuating the carrier, a cam-block interposed between the file-arms and capable of adjustment parallel

with the paths of said arms, and means for securing said cam-block at the desired adjustment, substantially as specified.

6. A saw-filer having a reciprocatory carrier and operating means, spring file-arms on the carrier, auxiliary spring-arms to increase the pressure of the file-arms toward the saw, and tension-screws for varying the pressure of the spring-arms upon the file-arms, substantially as specified.

7. A saw-filer having a carrier and operating means, spring file-arms on the carrier, spring-arms mounted on the carrier, and tension-screws mounted on the spring-arms and impinging against the file-arms, substantially as specified.

8. A saw-filer having a reciprocatory carrier and operating means, a rotary gumming-file having a pinion, and a rack on the carrier meshing with the pinion, substantially as specified.

9. A saw-filer having a rotary circumferentially concentric gumming-file provided at one side with a peripheral flat or cut-away portion to give clearance for saw-teeth, and operating devices for communicating rotary motion alternately in opposite directions to the gumming-file, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DAVID M. WILSON.

Witnesses:

EDWARD B. TNYGLE,  
GEORGE J. HOLLEY.