

(No Model.)

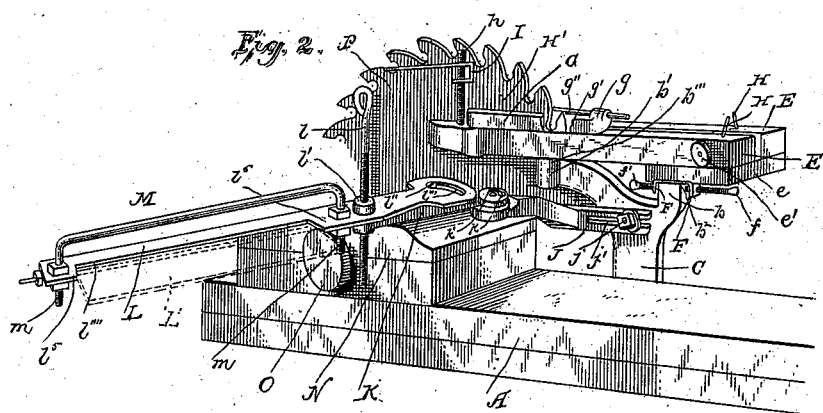
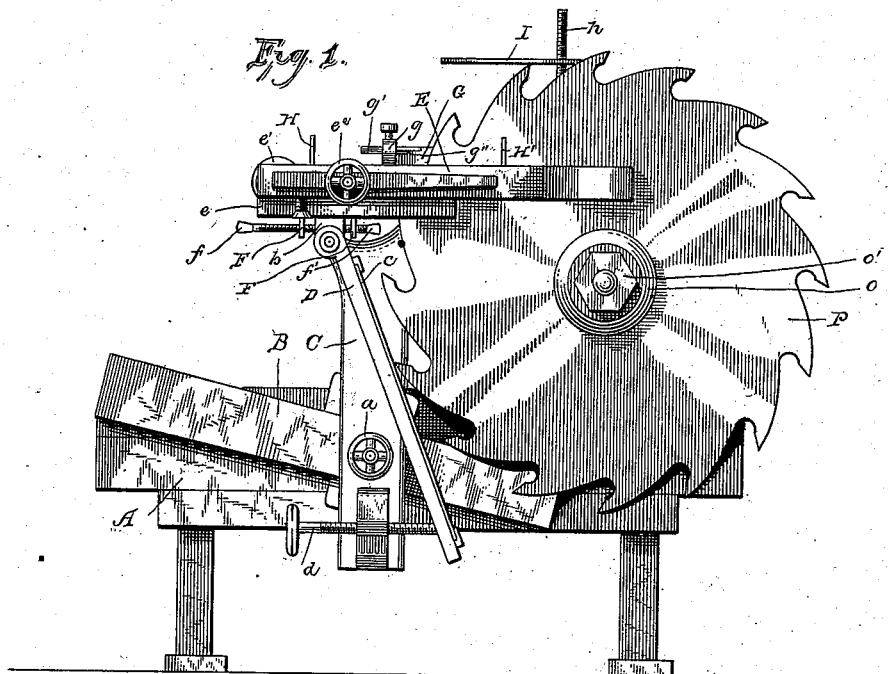
2 Sheets—Sheet 1.

H. W. GEORGIA & E. ANDREWS.

DEVICE FOR JOINTING, DRESSING, AND SHARPENING SAWS.

No. 382,467.

Patented May 8, 1888.



Witnesses.
Preston Phelps.
Frank B. Veen.

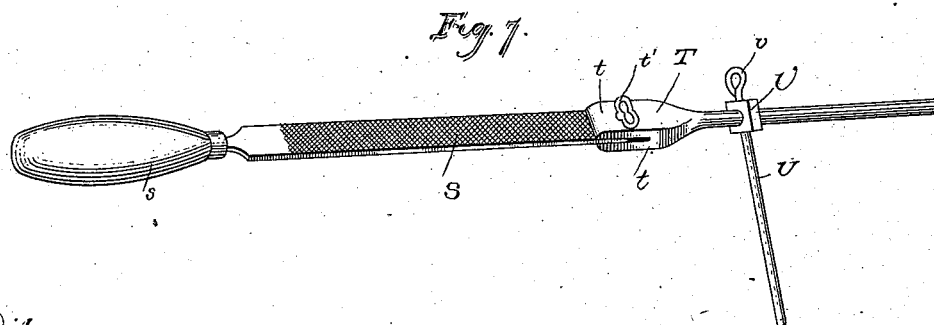
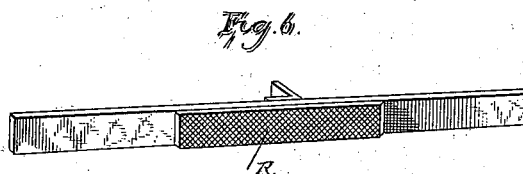
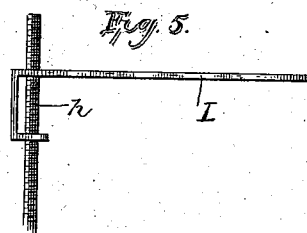
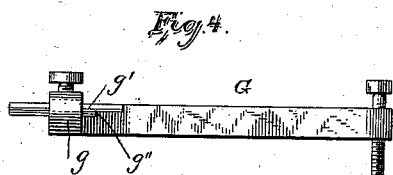
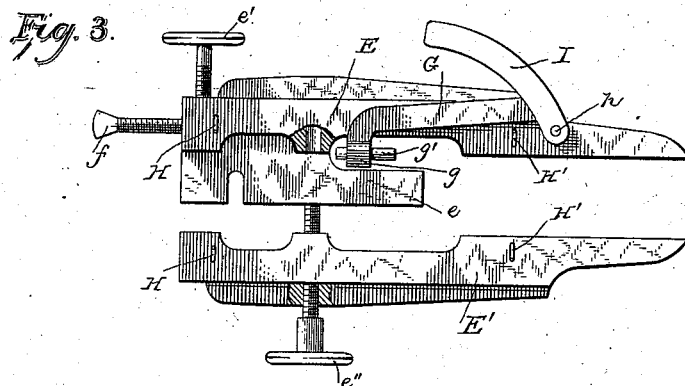
Inventors.
Harrison W. Georgia.
Emanuel Andrews.
By Geo. W. Dyer.
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UNITED STATES PATENT OFFICE.

HARRISON W. GEORGIA, OF SMETHPORT, AND EMANUEL ANDREWS, OF
WILLIAMSPORT, PENNSYLVANIA.

DEVICE FOR JOINTING, DRESSING, AND SHARPENING SAWS.

SPECIFICATION forming part of Letters Patent No. 382,467, dated May 8, 1888.

Application filed November 1, 1887. Serial No. 253,988. (No model.)

To all whom it may concern:

Be it known that we, HARRISON W. GEORGIA and EMANUEL ANDREWS, citizens of the United States, residing, respectively, at Smethport, in the county of McKean and State of Pennsylvania, and at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Jointer, Side-Dresser, and Sharpener for Saws; and we do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The invention hereinafter described is an improvement upon that described and illustrated in Letters Patent numbered 366,215, granted to Harrison W. Georgia July 12, 1887, for a combined jointer and side-dresser for saws; and the novelty therein consists in additions to the construction to adapt it for sharpening saws, and in changes of construction with a view to a greater perfection of work in the machine, all as will be more fully described and claimed.

For a better understanding of our improvements reference should be had to the drawings, in which—

Figure 1 is an elevation of one side of the machine; Fig. 2, an elevation in perspective of the other side of the machine; Fig. 3, a separate top view of the clamping-jaws; Fig. 4, a separate view of the adjustable file-gage; Fig. 5, a separate view of the tooth-gage; Fig. 6, a separate view of the side-dressing file; Fig. 7, a separate view of the sharpening-file.

In all of the figures the same letters denote corresponding parts.

A represents a suitable base, which may be mounted upon legs or adapted to be attached to a bench, and having a suitable incline, B, secured to one side of it, upon which incline a standard, C, is mounted in such a manner that it may be moved back and forth upon the incline, and is held in any desired position by a hand-screw, *a*. This standard has branches *b* and *b'* at its upper end, terminating in flat seats *b''* and *b'''* upon the same horizontal level.

Upon the outer side of this standard is pivoted the jointer-bar D, armed with a proper

file, *c*, and maintained at the proper inclination by a set-screw, *d*, upon the lower end of the standard.

The clamping-jaws E E' are made in two parts, as shown, the rear part, E, secured to a supporting-block, *e*, and the front part sliding over said block and connected to and adjustable with reference to the fixed part by hand-screws *e' e''*. Beneath the under side of the supporting-block are ears F F, extending down to the front and rear of the seat *b''*, and separated a distance greater than the longitudinal thickness of said seat, and passing through these ears and impinging against the front and rear sides of the seat *b''* are hand-screws *f f'*, by means of which an adjustment back and forth of the clamping-jaws is effected, and at the same time these jaws are held in proper position. To the forward end of the rear section, E, is pivoted a swinging arm, G, having a head, *g*, through which a tooth-gage, *g'*, passes, and is held in position by a screw. This tooth-gage is cut away on its under side to a shoulder, *g''*, so as to serve as a gage and stop for arresting both longer and shorter teeth upon the same saw at the proper point for side-dressing, the cut-away portion being higher than the remaining part.

Upon the front end of each section of the clamping-jaws are guides H H, inclined toward each other, and at the rear end of each section are corresponding guides, H' H', inclined away from each other to guide the files in side-dressing each side of the point of the tooth with the proper inclines.

The portions of the machine just described are found in said patent of Georgia numbered 366,215, except the incline B and the mounting of the standard upon such incline so as to be movable thereon, and the tooth-gage *g'*, all of which parts, in connection with a fixed saw-arbor, presently to be mentioned, constitute an effective and complete combined jointer and side-dresser for saws, and may be used for these purposes alone, and without the addition of the saw-sharpening parts.

The portions of the machine especially adapted for sharpening the teeth consist of a swinging gage, I, pivoted to the forward end of the rear section, E, and adjustable verti-

cally upon a threaded standard, *h*, for the purpose of arresting the teeth of the saw at the proper point for sharpening the same, also of an arm, *J*, removably secured to the rear side of the standard *C* and adjustable by means of a screw, *j*, working in a slot, *j'*. The outer end of this arm is pivoted to another arm, *K*, adjustable in a horizontal plane by means of a screw, *k*, working in a circular slot, *k'*. On the outer end of this last-named arm is pivoted a gage-arm, *L*, by means of a vertically-adjustable pivot, *l*, composed of an eyebolt passing through a sleeve, *l'*, which turns in an opening in said arm, the range of adjustment of said arm *L* being limited by a screw, *l''*, working in a circular slot, *l'''*, at the inner end of said arm. This arm *L* is preferably straight on one side and cut away on the other side, leaving a recess, *l''''*, and projections *l'''''*, and near the edge opposite said recess a guide, *M*, in the form of a flat arch, is mounted, the threaded legs *m m* of said arch passing through the arm *L*, and provided with screw-nuts for vertical adjustment and retention in place. Instead of this flat arch a leaf, *L'*, as shown in dotted lines in Fig. 2, may be pivoted by a rod to the projections of the arm *L*, and provided with a nut in one end of said rod for the adjustment of its angle of inclination, as desired.

Boxes *NN*, secured upon the rear end of the base, provide bearings for an arbor, *O*, upon which the saw *P* is secured by means of a collar, *o*, and nut *o'*.

A file, *R*, as shown in Fig. 6, is preferably employed for side-dressing the teeth, and a file, *S*, preferably as shown in Fig. 7, for sharpening the same. This file *S* has an ordinary handle, *s*, at one end, and the other end is clamped between the jaws *t t* of a guide rod and holder, *T*, and held between said jaws by a thumb screw, *t'*, which also may serve as a handle to hold in operating the file. For the better operation of this file a guide-rod, *U*, is attached to a block, *V*, having an opening through it of a size to allow the end of the holder *T* to pass through it, and having also a set-screw, *v*, to retain such holder in any desired position within said block.

The employment of this machine can be as follows, it being understood that a circular saw is in position upon its arbor and the standard *C* moved upon its incline and there secured at such a distance that the edges of the teeth of the saw (except the shorter ones) when turned will strike against the file *c* upon the jointer-bar *D*, said jointer-bar being previously set by means of the screw *d* at the proper inclination: By revolving the saw all the teeth except the shortest will be perfectly jointed by coming in contact and engaging with the file *c*. To side-dress the teeth, the jointer-bar being withdrawn from contact with the teeth of the saw and the clamping-jaws put in position, as shown in Fig. 1, and the swinging arm placed with its tooth-gage *g'* in line with the saw, the latter is revolved until the edge of a tooth strikes against the under side of the

tooth-gage, at the shoulder of the cut-away part of it if the tooth is of normal length. The clamping-jaws should then be tightened over the sides of the saw by means of the screws *e e'*, the swinging arm *G* moved back out of the way, and the tooth which struck against its gage *g'* is ready to be side-dressed by means of the file *R* working between the guides *H H' H'' H'*, as the described in said patent No. 366,215. Then the clamping-jaws should be released and the next tooth brought into position under the tooth-gage, and the work pursued as before. In this way tooth after tooth may be side-dressed if of the normal length with the greatest uniformity until this part of the work is completed. Then if, as happens frequently, there are teeth which from some defect or breakage have been shortened, the saw must be revolved again to bring each of these teeth up to the stop *g'*; but as it is best to side-dress these teeth, so that their edges shall be narrower than those of the other teeth to avoid scratching the lumber the gage *g'* is adjusted so as to bring its shoulder nearer to the saw by the adjustment forward of the clamping-jaws, which may be done by the screws *f f'*, the effect of which will be that the side-dressing file will cut at a little different angle of inclination, and therefore the edges of the shorter teeth will be narrowed. The same effect is perhaps better produced by moving the standard *C* down its incline until the stop *g'* arrests the short teeth, and the same course will be pursued until all the shorter teeth are side-dressed. This side-dressing of all the teeth is usually done after the sharpening.

To sharpen the teeth the gage *I* is swung over the path of the saw, the clamping-jaws loosened, and the saw turned until the edge of one of its teeth strikes the under side of the gage *I*, when the clamping-jaws are tightened to hold the saw firmly. The holder-rod *T* of the file *S* is inserted through the eye or opening of the bolt *l*, the latter being properly adjusted vertically, the handles of the file being on the opposite side of the saw, with the file *S* resting in the teeth of the same, and the guide-rod block *V* is slipped over the outer end of the holder-rod and there secured in such position that when the guide-rod rests upon the straight side of the arm *L* the position of the cutting-face of the file will give precisely the line desired to be given to the face of each tooth. Then by revolving the file and its guide-rod over to the other side of the arm *L*, the guide *M* or the modification *L'* may be so adjusted vertically that the guide-rod resting on them and without any change in its position relatively to the holder-rod will give precisely the proper inclination to the other cutting side of the file as will give the line desired for the back of the tooth. The line of direction of the arm *L* is readily adjusted by means of the screws described, and both the line of direction of this arm and of the file at right angles to the saw and horizontally may be determined in the usual way by the use of a

square. The saw-tooth is then filed in the usual way both on the face and the back, and without change of position of the file the wire-edge of the tooth may be removed and its line made even. The clamping-jaws being loosened and the gage I swung into the path of the saw, the latter is revolved until the next tooth comes in contact with the gage I and the clamping-jaws are tightened, and the work of sharpening proceeds as before, no change being made in the adjustment of the arm L or of the guide-rod. At the same time the shorter teeth, which have not been jointed in the former part of the operation, may be jointed by the file S when the tooth is sharpened.

It is evident that by the adjustment of the arm L and its connections at the joints $l''l''$, $k'k'$, and $Jj'j'$ the sharpening of saw-teeth at various angles of inclination may be effected. It is also evident that our machine may be used to advantage for jointing saws without the clamping-jaws and without our saw-sharpening device, and that our sharpening device may be used in connection with other kinds of jointing or side-dressing machines, and, in fact, with any device which will hold a saw in a fixed position; and for that reason we do not wish to confine our invention simply to the entire combined machine as we have described it.

In the above description of our invention the specification has pointed out the precise construction of parts which we have found effective and convenient; but we do not desire to be confined to such construction, as it is evident that the same may be changed in many ways by ordinary mechanical skill without the exercise of invention in the selection of well-known equivalents; but

What we do claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, in a machine for jointing saws, of the fixed saw-arbor, the standard, the incline B, whereby the standard may be vertically and horizontally adjusted with reference to the fixed saw-arbor, and the adjustable jointer pivoted to said standard, substantially as described.

2. In a machine of the character described, the saw-tooth gage g' , removably secured to the swinging arm G and provided with a cut-away portion on its under side, whereby said gage may serve as a gage and stop for arresting both long and short teeth, substantially as set forth.

3. In a machine of the character described, the saw-tooth gage g' , removably secured to the swinging arm G and provided with a cut-away portion on its under side, whereby said gage may serve as a gage and stop for both long and short teeth, and a screw for retaining said gage in position on said swinging arm, substantially as set forth.

4. The combination, with the standard, of the clamping-jaws removably secured thereto, and the sharpening guide-frame, also removably secured to said standard, substantially as set forth.

5. In a machine of the character described, the combination of the standard, the clamping-jaws, the eyebolt l , and the saw-sharpening file, substantially as herein set forth.

6. In combination, the standard, the clamping-jaws, the saw-sharpening guide-frame made in sections pivoted together, the eyebolt l , and the saw-sharpening file, substantially as set forth.

7. In a machine of the character described, a saw-sharpening guide-frame consisting of the arm J, removably secured to the standard, the arm K, pivotally mounted on said arm J, and gage-arm L, pivoted to said arm K, substantially as set forth.

8. In a machine of the character described, the saw-sharpening guide-frame composed of sections pivoted together and also provided with locking-screws, for the purpose set forth.

9. In a machine of the character specified, a sharpening file provided with the cylindrical end and with the rod-guide removably secured to said end, substantially as described.

10. The described saw-sharpening file, consisting of the file portion S, the removable cylindrical portion T, provided with clamping-jaws, the guide-rod U, having enlarged head V, and set-screw v , for fastening said rod in position, substantially as set forth.

11. In a machine of the character described, a saw-sharpening-file guide-frame made substantially as set forth, with the guide proper composed of a flat arch or leaf, as herein specified.

12. A combined jointer, side-dresser, and saw-sharpening machine composed of a base, a fixed arbor upon the base to support the saw, an incline upon the base for a sliding standard, a sliding standard carrying clamping-jaws to hold the saw in position, a jointer to joint the teeth of the saw, guides for side-dressing, and an attached adjustable file-frame to guide the sharpening-file, so as to file uniformly the face and back of each tooth without removing the file, substantially as set forth.

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

HARRISON W. GEORGIA.
EMANUEL ANDREWS.

Witnesses for Harrison W. Georgia:

F. C. SARTWELL,
JNO. W. WILLIAMS.

Witnesses for Emanuel Andrews:

A. B. NUYHART,
G. D. SLOATMAN.