(No Model.) 2 Sheets—Sheet 1.

J. R. SCHELOSKY.

WOODWORKING MACHINE.

No. 539,648. Patented May 21, 1895.

Fig. 1.

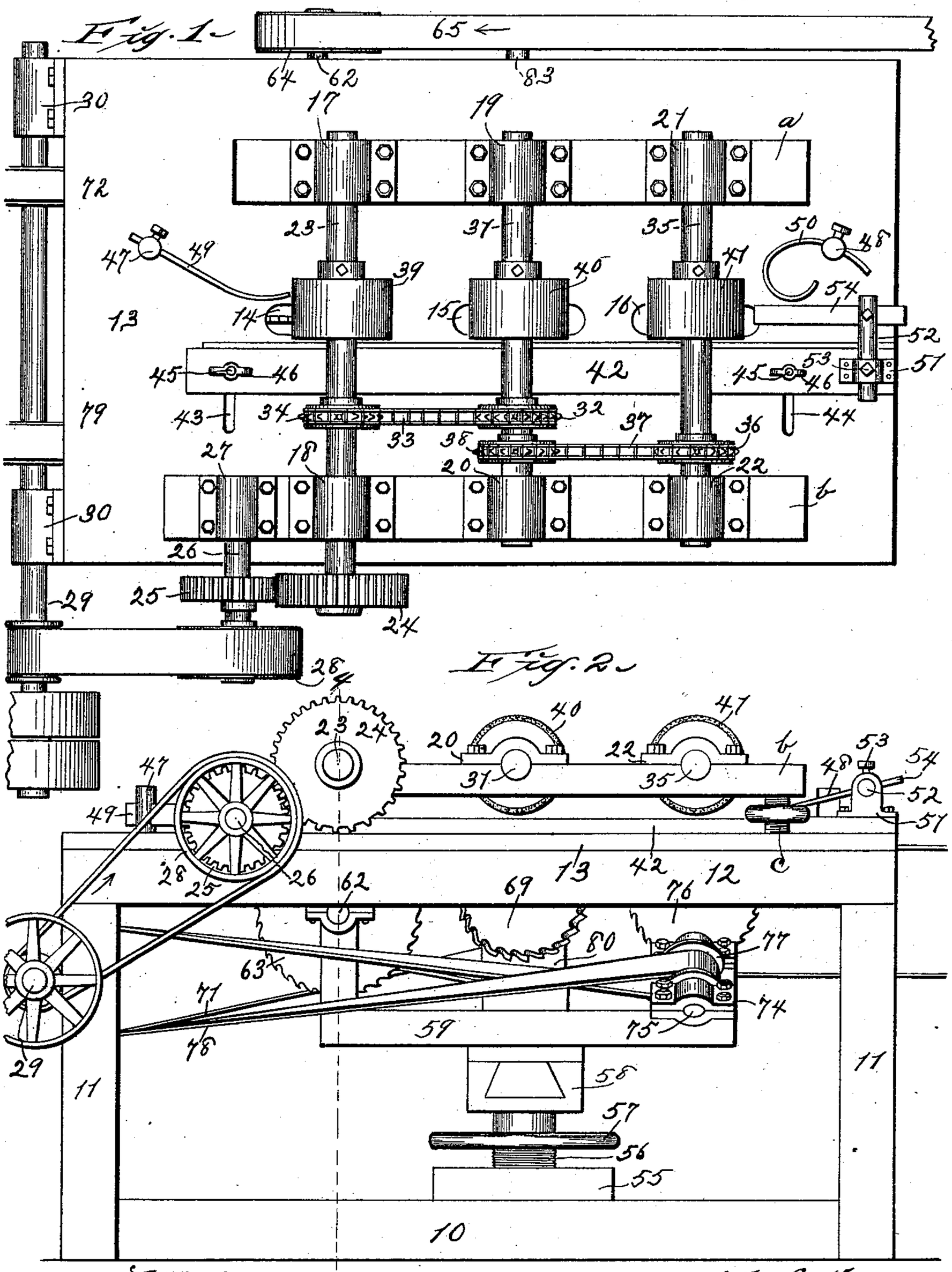


Fig. 2.

Attest:—
M. P. Smith:—
R. P. Ryther—

Inventor
John R. Scheloshy—
Higdon & Higdon & Kongan—
Atty's—

(No Model.) 2 Sheets—Sheet 2.

J. R. SCHELOSKY.

WOODWORKING MACHINE.

No. 539,648. Patented May 21, 1895.

Fig. 3.

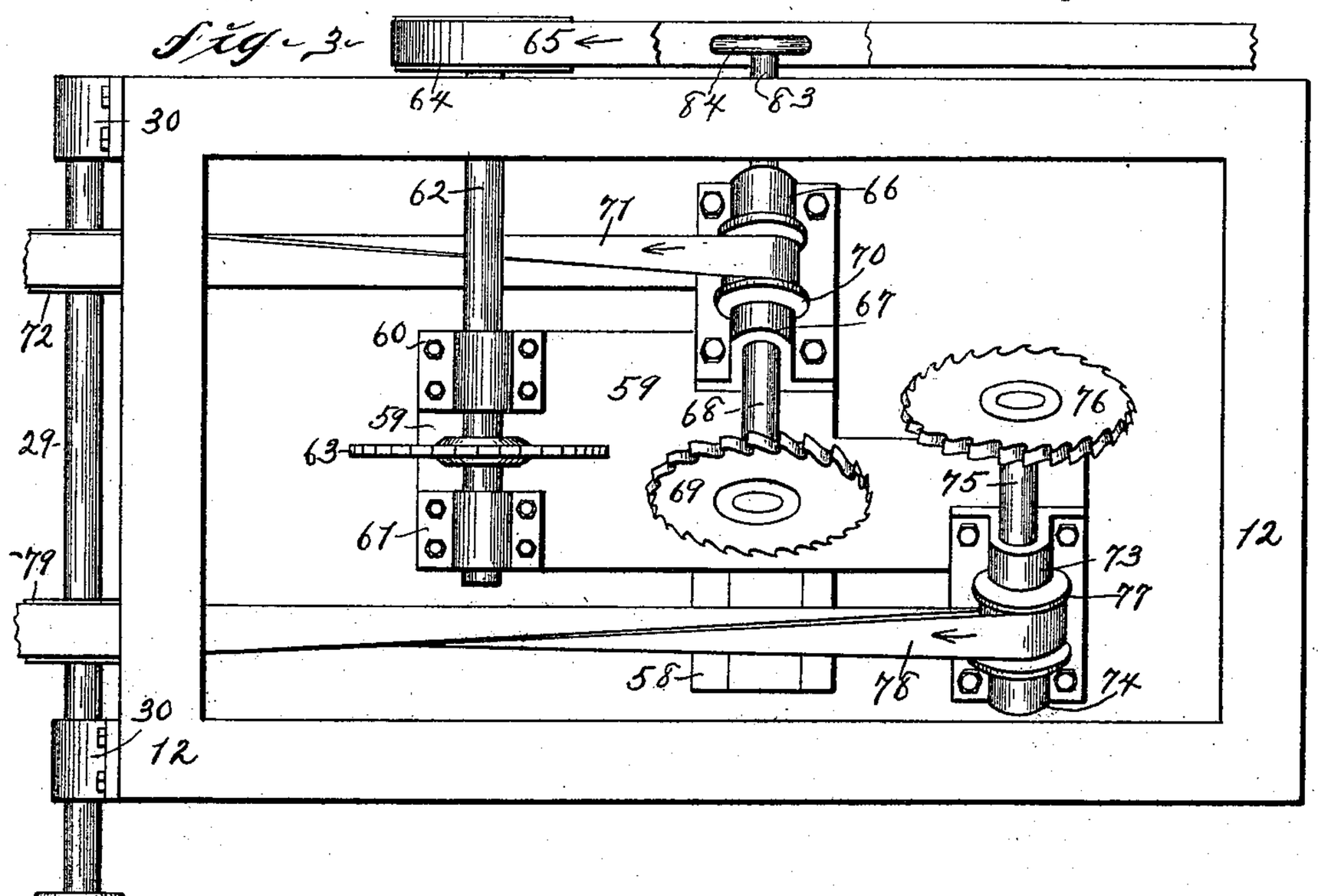


Fig. 4.

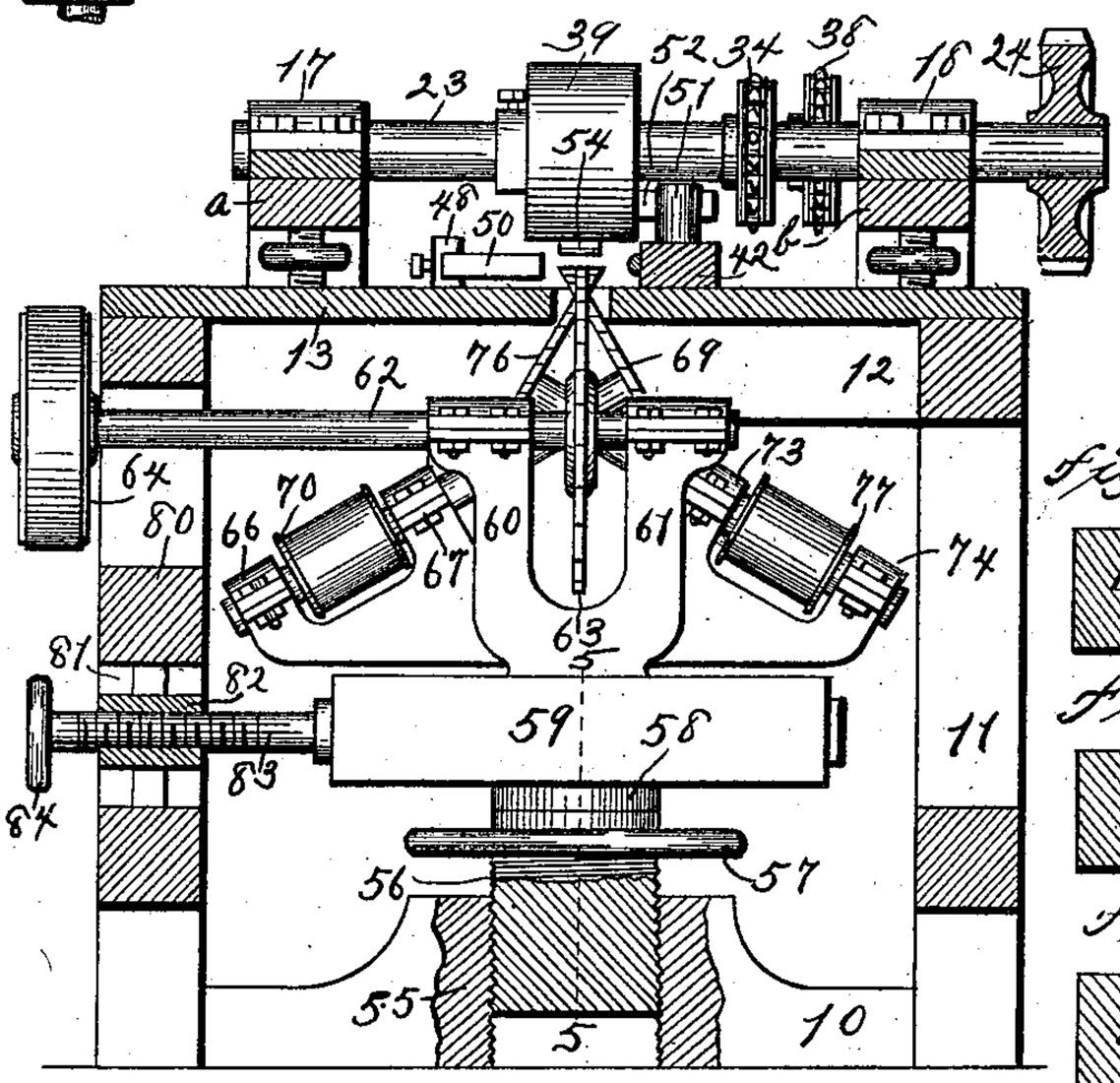


Fig. 5.

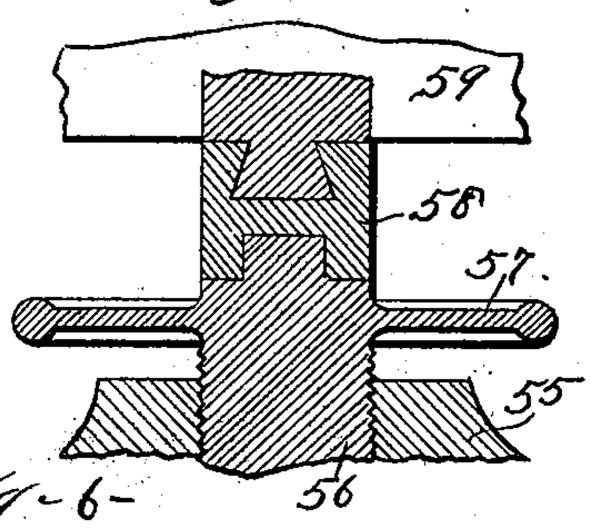


Fig. 6.

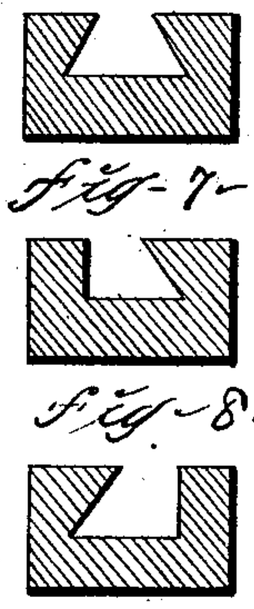


Fig. 7.

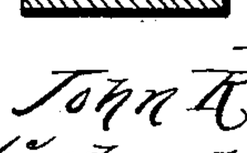


Fig. 8.

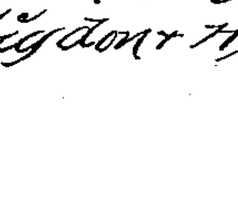
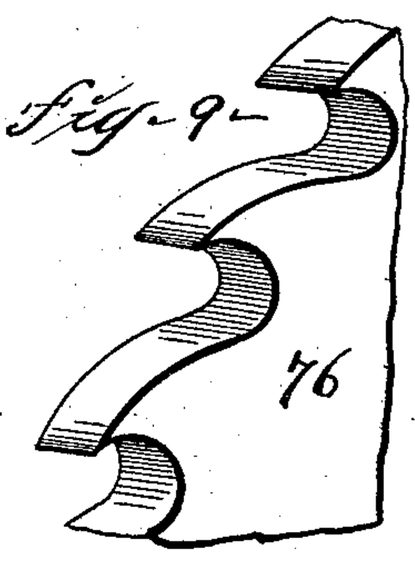


Fig. 9.



Attest:-
M. P. Smith.
R. P. Rythtzler

Inventor:-
John R. Scheloshy
By Higdon & Higdon & Longan
Atty's:-

UNITED STATES PATENT OFFICE.

JOHN R. SCHELOSKY, OF ST. LOUIS, MISSOURI.

WOODWORKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 539,648, dated May 21, 1895.

Application filed April 16, 1894. Serial No. 507,637. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. SCHELOSKY, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Woodworking-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

The object of this invention is to provide improved means for sawing grooves, gains and dadoes in lumber in dovetail form in cross-section.

This invention is especially adapted for forming the sliding connection between the sections of extension tables, and an apparatus of like character.

My invention consists in the construction, arrangement and combination of elements hereinafter set forth, pointed out in my claim, and illustrated by the accompanying drawings, in which—

Figure 1 is a plan view of the complete machine. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a plan view of the machine, the table and feeding mechanism being removed. Fig. 4 is a sectional elevation on the line 4 4 of Fig. 2. Fig. 5 is a sectional elevation on the line 5 5 of Fig. 4. Figs. 6, 7, and 8 are transverse sectional views illustrating the dovetailed grooves formed by this device. Fig. 9 is a perspective view of a portion of one of the saws.

In the construction of the machine as shown, the numeral 10 designates the base, 11, 11 the standards and 12 the top frame of the supporting frame of the machine. Mounted upon the top frame 12, and occupying an approximately horizontal position, is the saw table 13, having the vertical longitudinal aligning apertures 14, 15, 16, through which the saws are adapted to vertically extend into contact with the material to be acted upon.

Longitudinally positioned on the opposite sides of the upper surface of the table 13 are a plurality of transverse aligning bearing boxes 17 and 18, 19 and 20, 21 and 22. The lower member of the bearing boxes 17, 19, 21 is a bar *a*, and the lower member of the boxes 18, 20 and 22 is a bar *b*, which said bars are supported on adjusting screws *c* at either end, whereby said bars are raised, or lowered, relative to the table.

Transversely positioned, and mounted for rotation in the bearing boxes 17, 18, is a shaft 23, on the outer projecting end portion of which shaft is rigidly mounted a gear-wheel 24, which meshes with, and is driven by, a spur-gear 25, rigidly mounted upon a counter-shaft 26, rotatably mounted in a bearing box 27, fixed to the upper surface of the table 13.

Mounted upon the extreme outer end portion of the counter-shaft 26 is a belt-wheel 28, which is belted to a drive-shaft 29, rotatably mounted in bearings 30, 30 fixed to the standards 11, and extending transversely of one end portion of the machine. The shaft 29 is belted, or otherwise geared, to a prime mover. (Not shown.)

Mounted for rotation in the bearing boxes 19, 20, and parallel to the shaft 23, is a shaft 31, bearing upon the mid-portion thereof a sprocket-gear 32 which is connected, by means of a sprocket-chain 33, to an aligning sprocket-gear 34, carried by the said shaft 23.

Mounted for rotation in the bearing boxes 21, 22, parallel to the shaft 31, is a shaft 35 having upon its mid-portion a sprocket-gear 36, connected by means of a sprocket-chain 37, with a sprocket-gear 38, carried upon the said shaft 31.

Mounted upon the shafts 23, 31, 35, in alignment with each other, and in a vertical plane of the apertures 14, 15, 16, are feed-rolls 39, 40, 41.

Adjustably mounted upon the table 13, parallel with the longitudinal aligning plane of the apertures 14, 15, 16, is a head-block 42, the means of adjusting said head-block comprising slots 43, 44 in the said table, bolts 45, 45 extended through said slots and vertically through the said head-block, and binding nuts 46, 46, located on the upper ends of the bolts.

Adjustably positioned on standards 47, 48 mounted in, and vertically extending from, the upper surface of the table 13 are leaf-springs 49, 50 connected to said standards by means of set-screws, and adapted to impinge against the material being acted upon by the

saws, and, by reason of the resilience of said springs retaining the said material in firm contact with, and permitting the advancement thereof parallel to, the head-block 42.

A bearing box 51, mounted upon the tail end portion of the head-block 42, provides a seat for a rock-shaft 52 normally rigidly retained in said bearing, by means of a set-screw 53.

Mounted upon, and rigidly secured to, the outer end portion of the shaft 52 is a leaf-spring 54 adapted for engagement with the upper surface of the material being acted upon by the saws, and retain such material in close contact with the table 13.

Mounted on the base 10 is a set-screw 55, carrying the lower end of an adjusting screw 56 having a hand-wheel 57. The upper end of the adjusting screw 56 is swiveled in a block 58 having a dovetailed tenon and mortise connection with a saw frame 59.

Mounted in bearings 60, 61 located on one end of the saw frame 59, parallel to, and in vertical alignment with, the shaft 23, is a saw spindle 62 having a saw 63 thereon, which saw occupies a true vertical plane in alignment with the aperture 14, and projecting through said aperture.

Mounted upon the outer projecting end portion of the saw spindle 62 is a belt-wheel 64 belted to a prime mover (not shown) and adapted for rotation in the direction of the arrow 65.

Mounted in bearings 66, 67, fixed to the central portion of the saw frame 59, is an inclined saw spindle 68 having upon its outer end a saw 69, occupying an inclined plane, and having a point in the upper plane of its orbit in alignment with the path of rotation of the saw 63, said saw 69 projecting through the aperture 15 in the saw table 13.

Mounted upon the spindle 68 is a belt-wheel 70, connected, by means of a twisted belt 71, with a belt-wheel 72 rigidly mounted upon the drive-shaft 29.

Mounted in bearings 73, 74 on the end portion of the saw frame 59 opposite to the bearings 60, 61 is a saw spindle 75 occupying an inclined plane bisecting the inclined plane of the spindle 68. The spindle 75 has a saw 76 mounted upon its outer end, which saw occupies an inclined plane, and has a point in the upper portion of its orbit in alignment with, and in the path of, the saws 63, 69, and projecting through the aperture 16 in the saw table 13.

Mounted upon the spindle 75 is a belt-wheel 77 connected by means of a twisted belt 78 with a belt-wheel 79 mounted on the drive-shaft 29.

Fixed to, and extending from, the base 10 to the top frame 12 on one side of the machine is a standard 80, which said standard has a transverse aperture 81 therein, within which aperture is mounted for vertical reciprocation a screw-block 82. Transversely seated in the screw-block 82 is an adjusting screw 83 having a hand-wheel 84 on its outer end, the inner end of said screw entering, and engaging with, a common seat in one end portion of the saw frame 59.

In the practical operation of this machine, when it is desired to cut a dovetail as shown in Fig. 6, the saws are positioned as illustrated in Figs. 3 and 4, and the material fed beneath the rolls 39, 40, 41, and carried by said rolls along the table 13, the springs 49, 50 and 54 retaining the said material in contact with the head-block 42 and the table. It will be observed that the spindle 62 is rotated in a direction opposite to the direction of rotation of the feed-roll 39, and, being in advance of the remaining saw spindles and carrying the saw 63, it follows that the saw 63 will first engage the material to be acted upon and cut therein a vertical kerf of approximately the width of the groove to be thereafter dovetailed. The inclined saw 69 next acts upon the material, as said material is advanced over the path thereof, and cuts an inclined kerf in the material at one side of the kerf cut by the saw 63, and the inclined saw 76, succeeding the saw 69 and being inclined in a different plane than said saw 69, acts upon the material as it is advanced over the path thereof, and cuts an inclined kerf on the opposite side of the kerf cut by the saw 63, the three saws producing the kerf shown in Fig. 6. When it is desired to cut the kerf shown in Figs. 7 and 8, one of the inclined saws 69, or 76, is removed, and the material worked with one, or the other, of its edges, in contact with the head-block 42, according to the position in which it is desired the inclined kerf shall be located relative to the vertical kerf. It will be observed that the teeth of the inclined saws have point-planes parallel to the horizontal plane of the table, and, therefore, at oblique angles relative to the sides of the saws. When it is desired to vary the depth of the kerf cut in the material, the hand-wheel 57 is manually rotated in the direction necessary to raise, or lower, the block 58, and consequently the saw frame 59, thus varying the projection of the saws through their respective apertures in the table 13. When it is desired to vary the position of the kerf relative to the edges of the material in which it is formed, the adjusting screw 83 is rotated by means of manual actuation of the hand-wheel 84, thus laterally moving the saw frame 59, and consequently varying the position of the saws. When it is desired to operate upon different thicknesses of material, the bars *a*, *b* are vertically adjusted by means of the screws *c*, and the spring 54 is also vertically adjusted, by means of the set-screw 53. When it is desired to operate upon material of varying widths, the springs 49, 50 are adjusted in the standards 47, 48, by means of the set-screws in said standards.

What I claim is—

The improved dovetailing machine con-

structed with a series of circular saws (as two or three) mounted in differential planes, and a single saw-frame upon which all the arbors of said saws are mounted, and said saw-frame simultaneously-adjustable vertically and horizontally with respect to the main stationary frame of the machine, in combination with a suitable main stationary frame, whereby all of the saws and their arbors may be simultaneously adjusted either vertically or horizontally, substantially as herein specified.

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

JOHN R. SCHELOSKY.

Witnesses:
E. E. LONGAN,
JNO. C. HIGDON.