

No. 668,813.

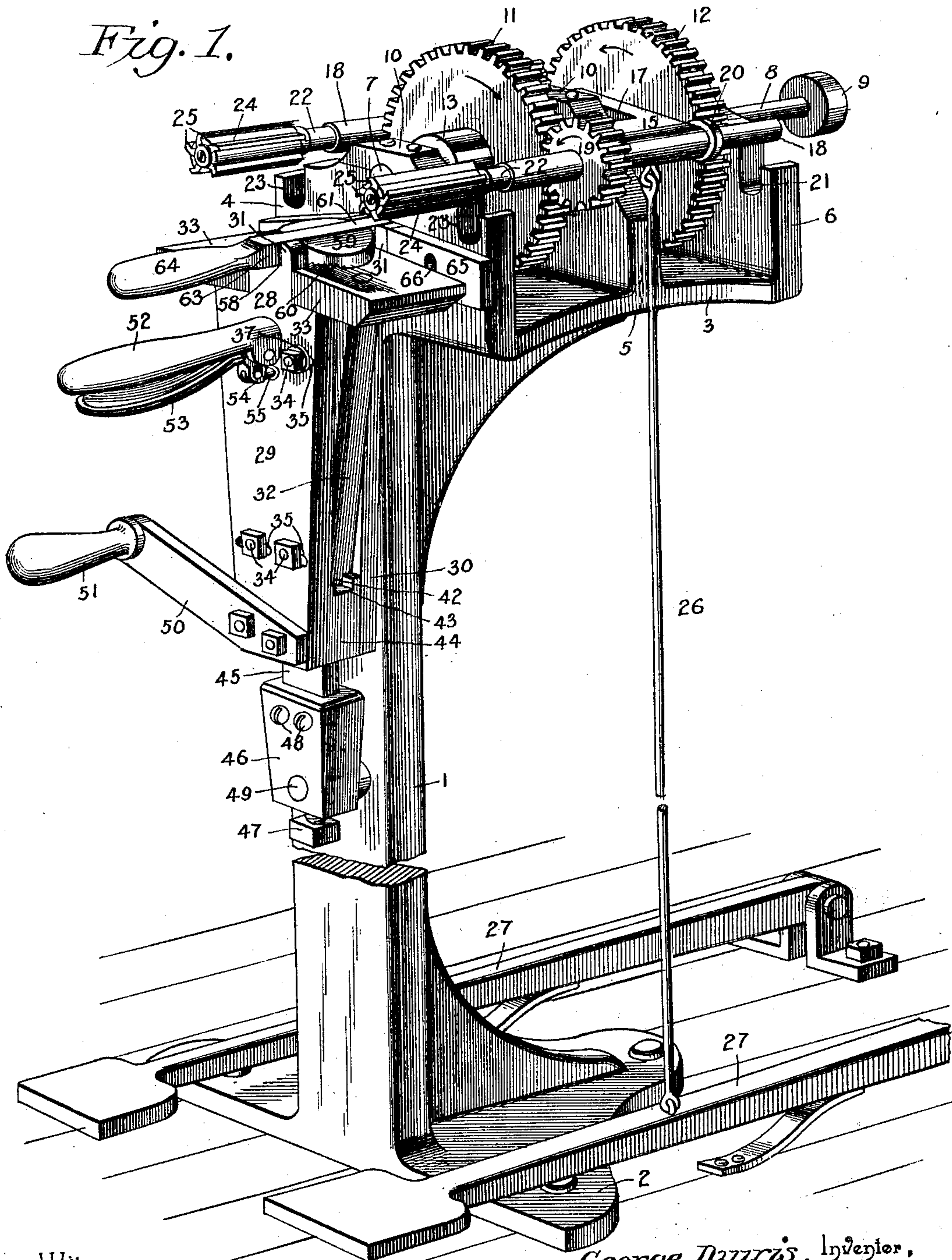
Patented Feb. 26, 1901.

G. DZURIS.
SKIVING MACHINE.

(Application filed Oct. 24, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
Howard D. Orr.
Chas. S. Hoyer.

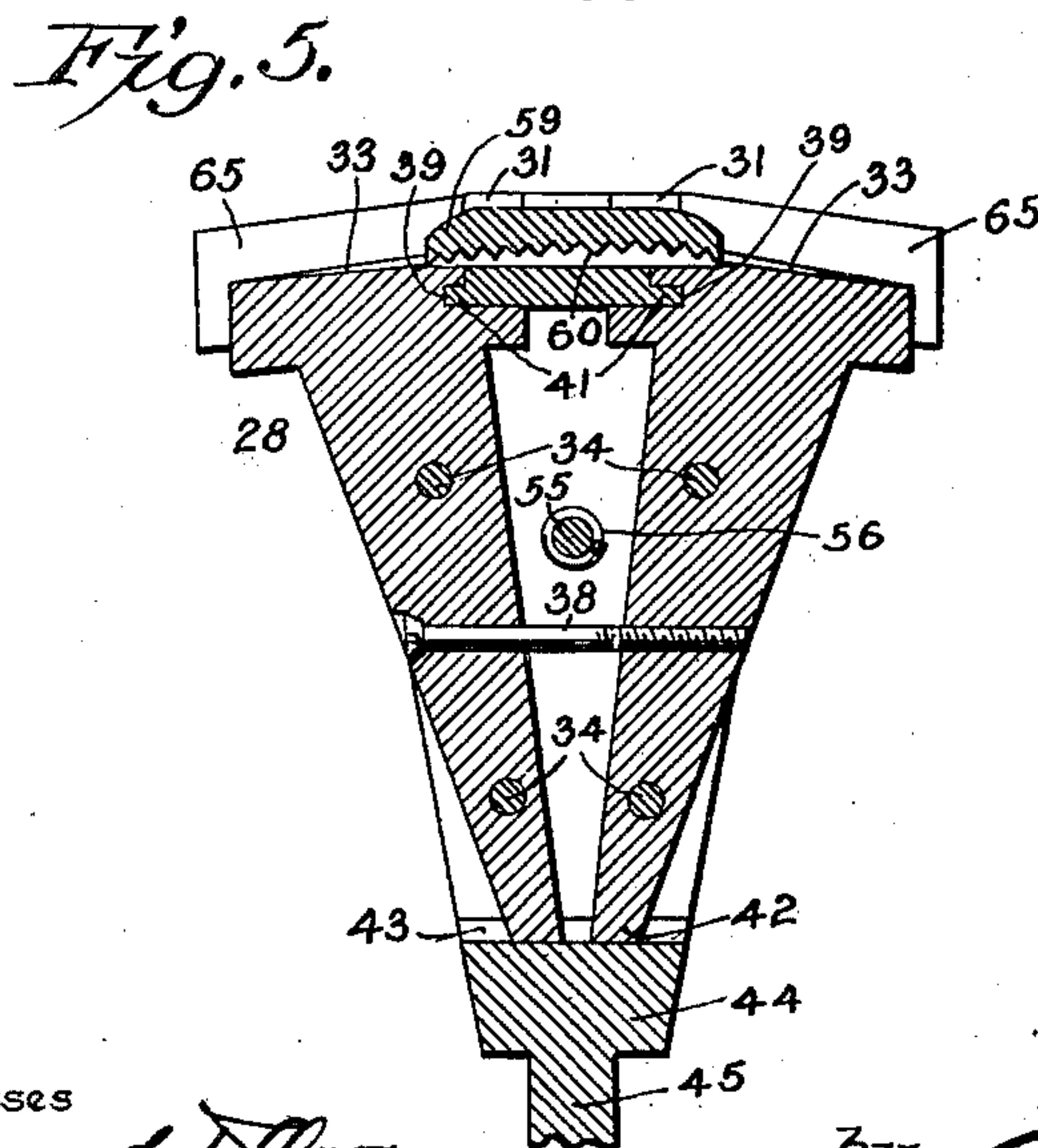
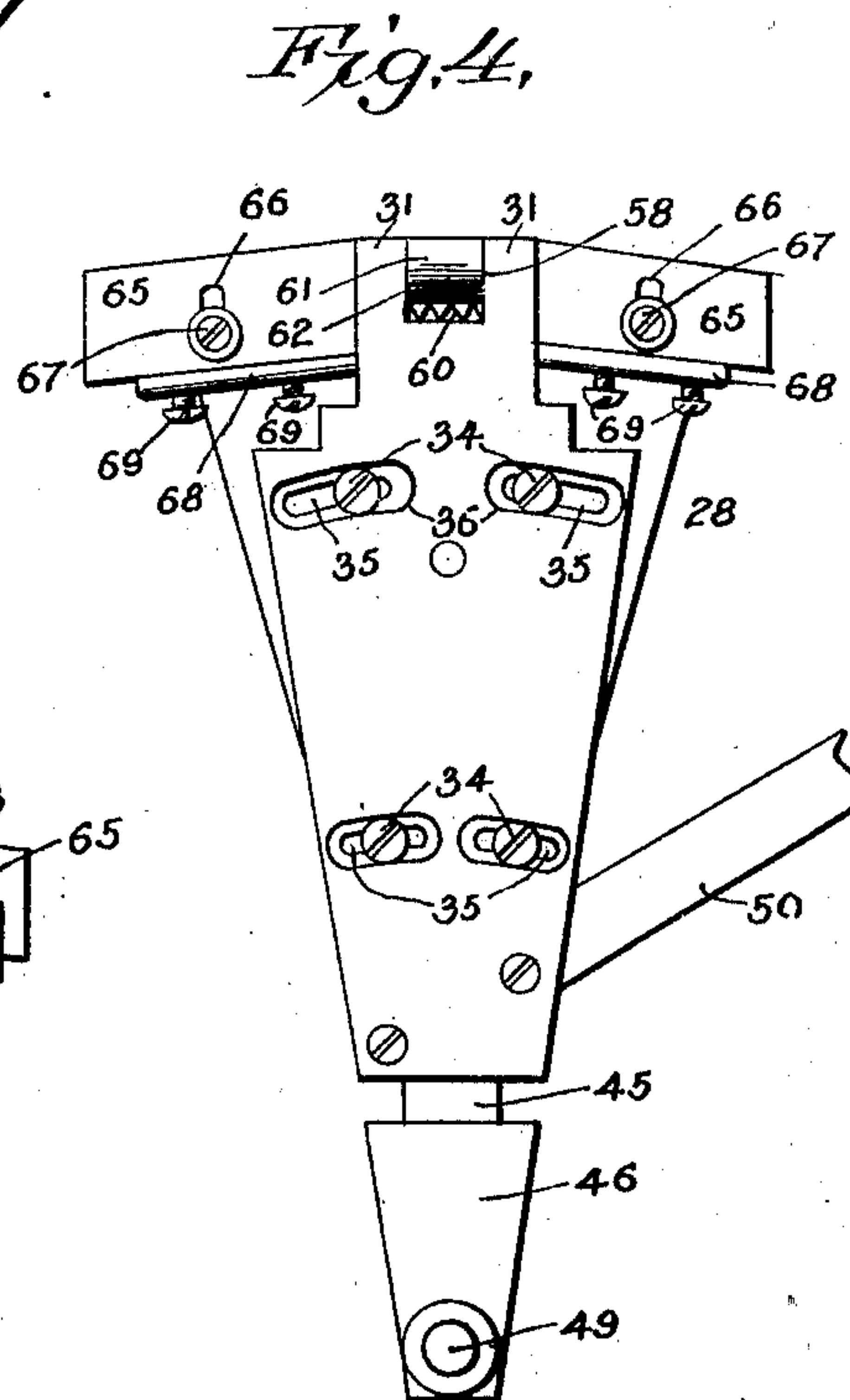
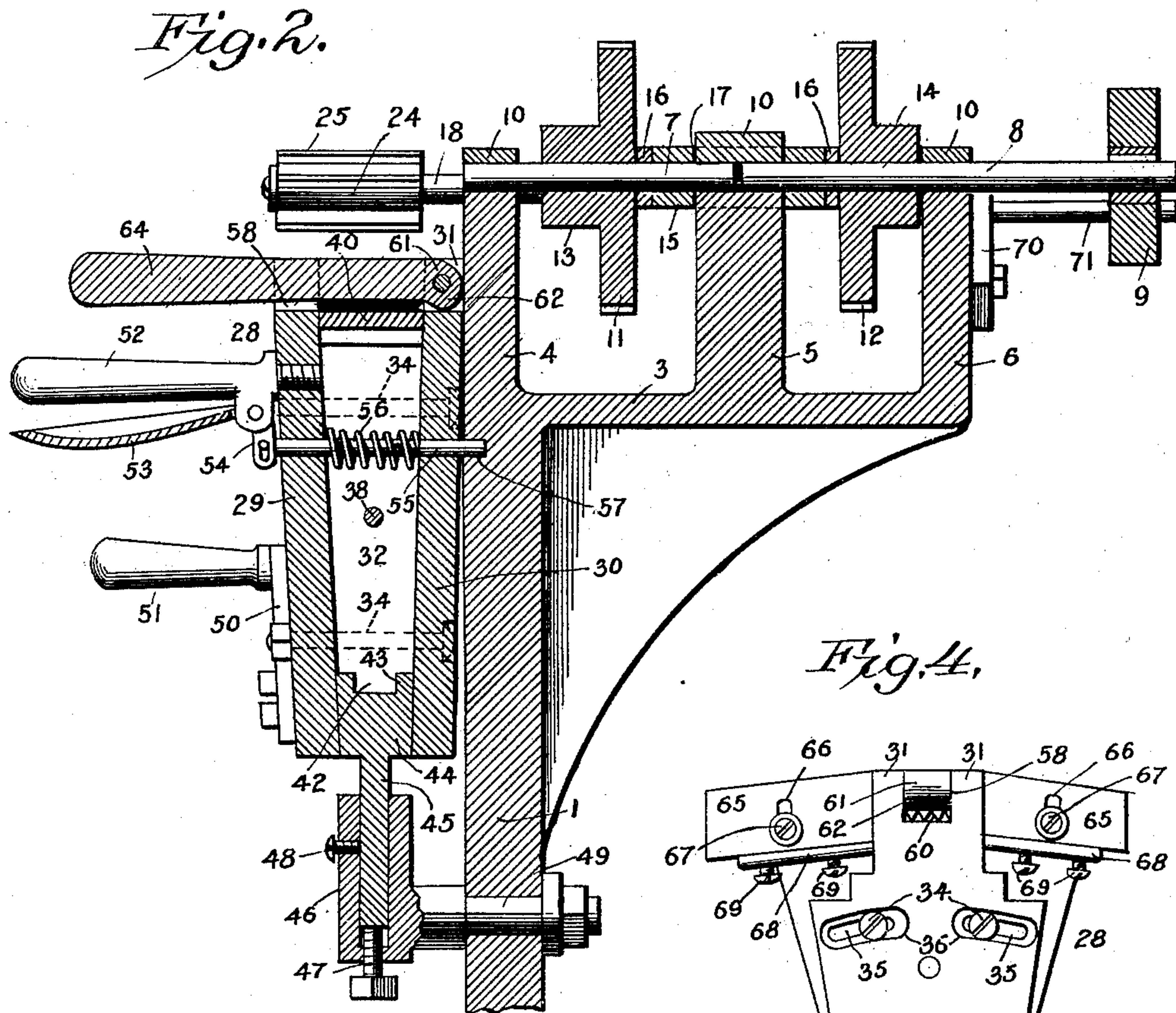
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3 Sheets—Sheet 2.



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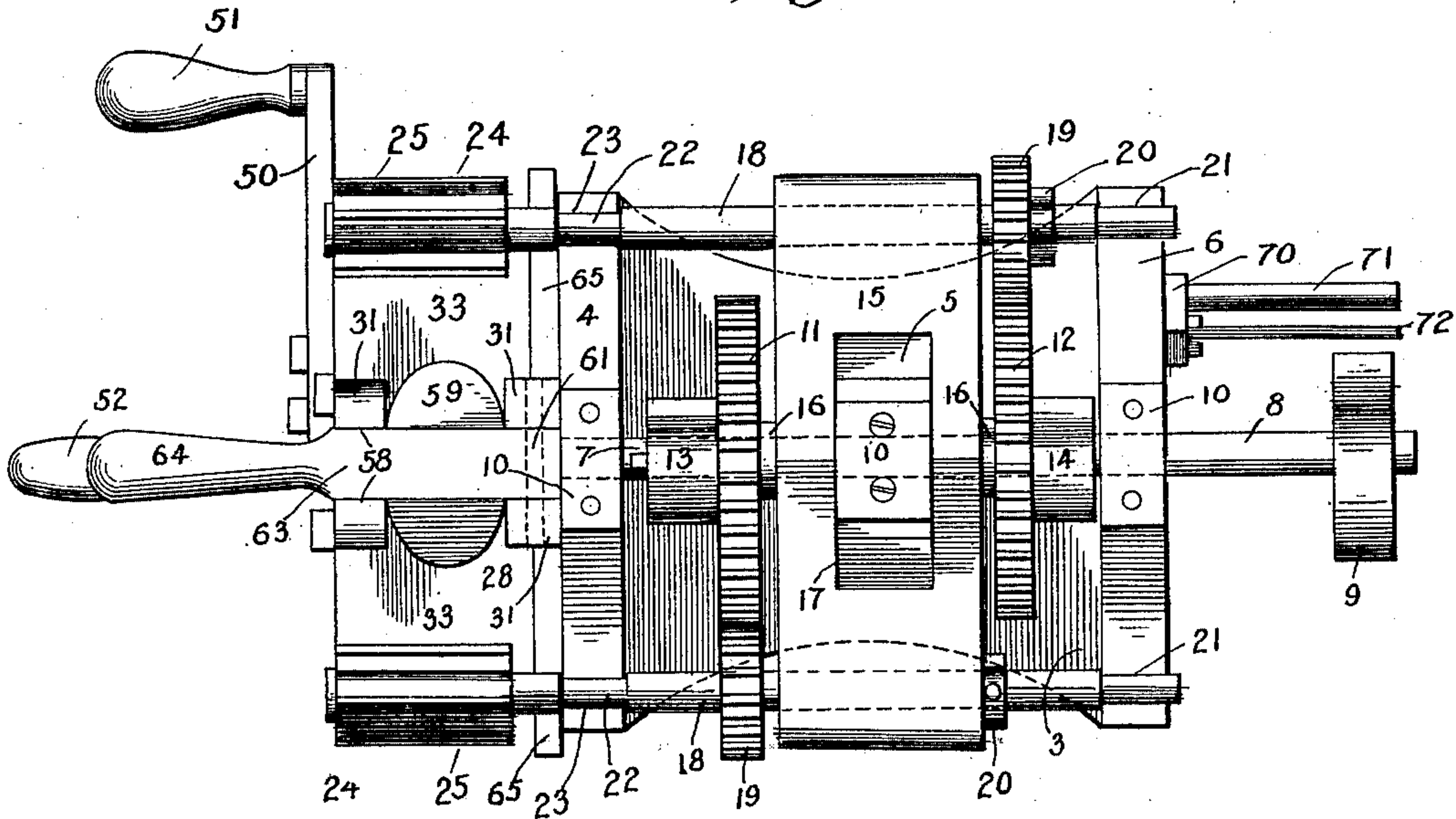
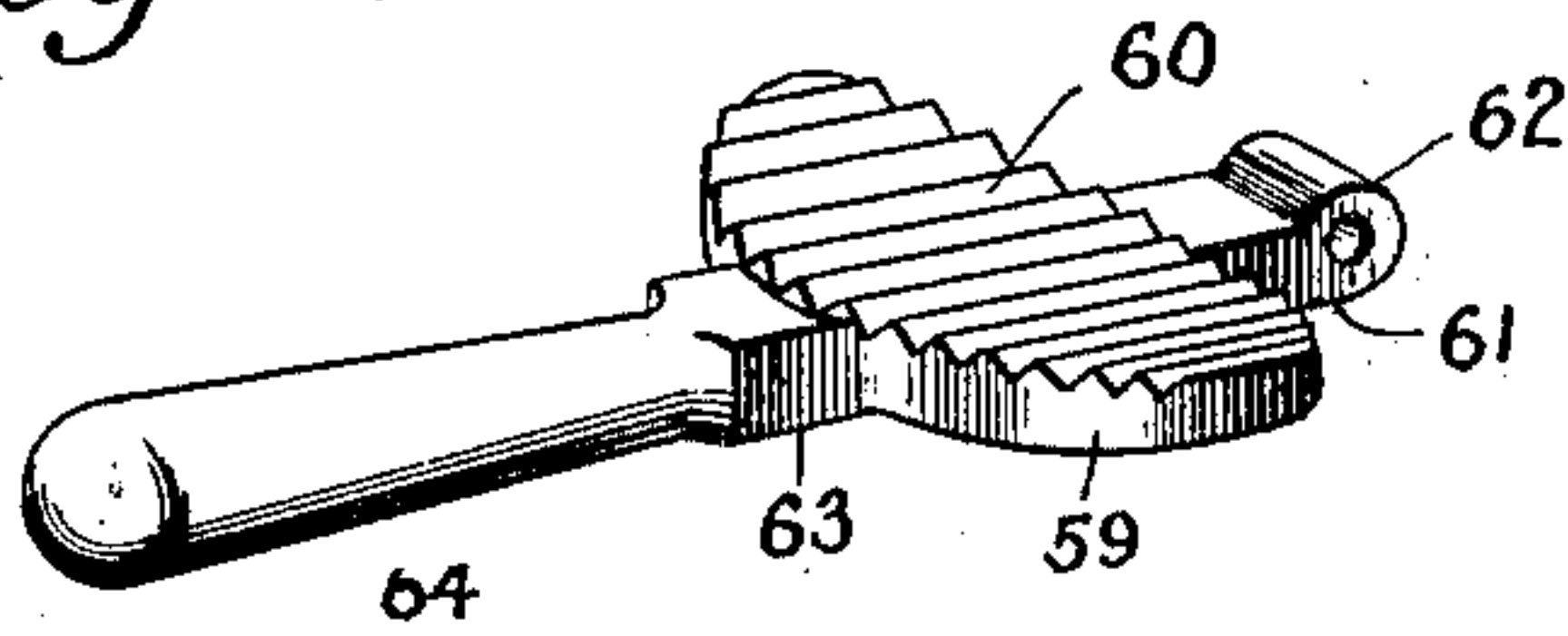
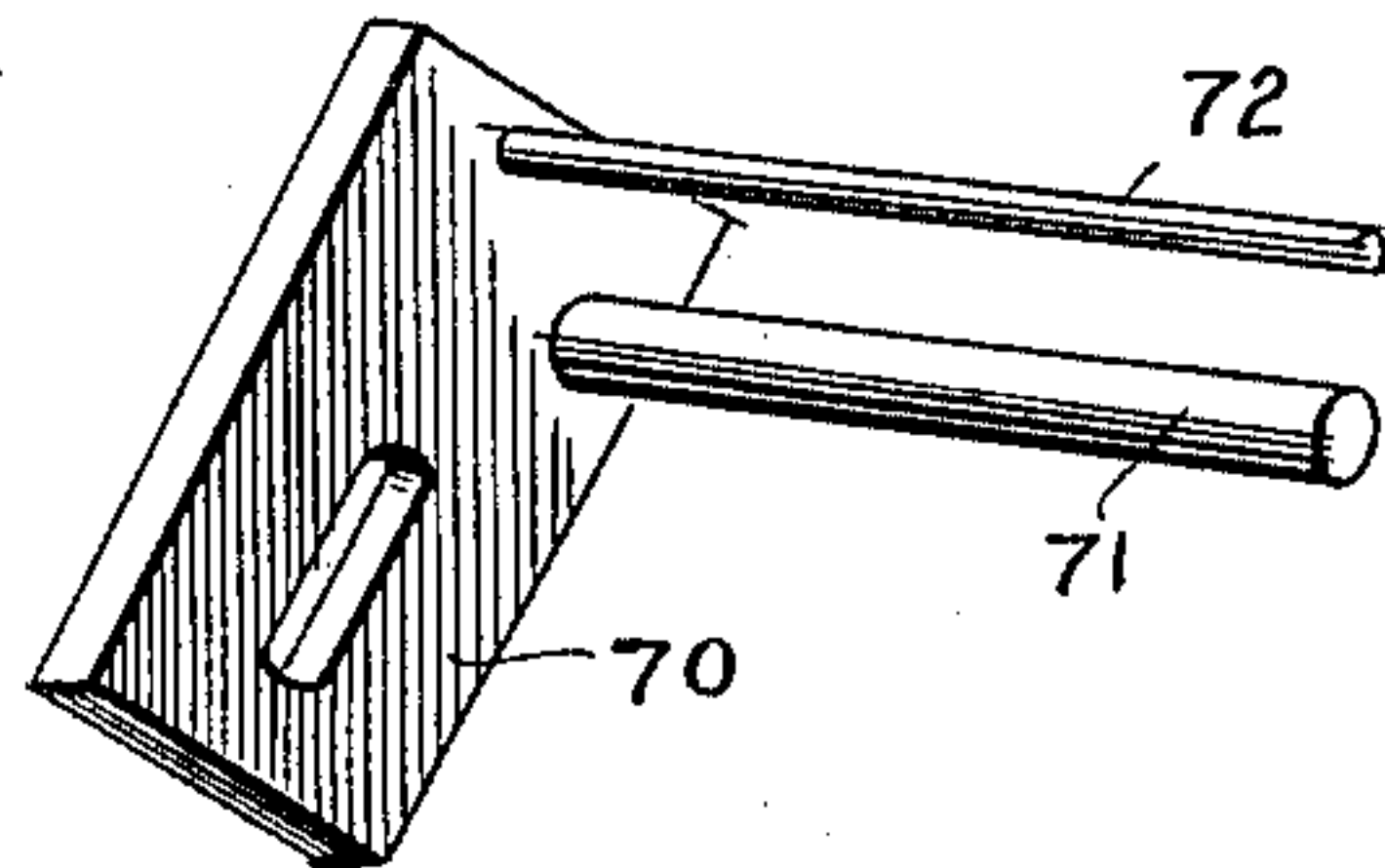
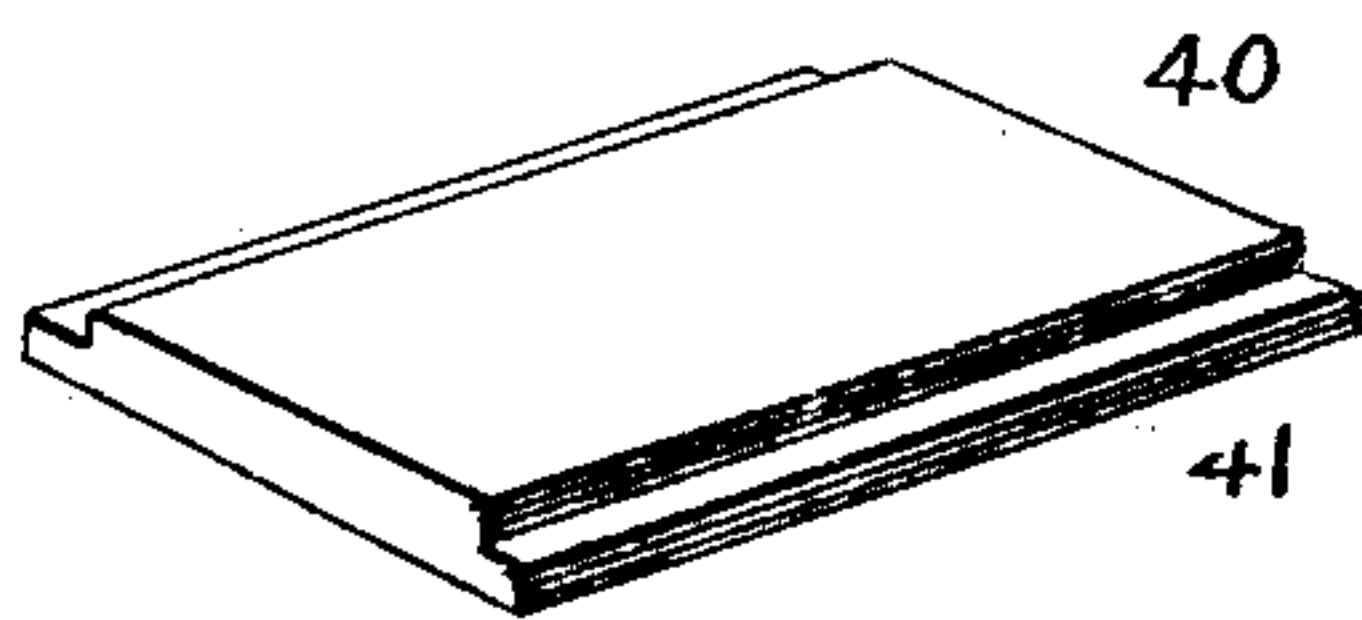
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3 Sheets—Sheet 3.

Fig. 3.*Fig. 6.**Fig. 8.**Fig. 7.*

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UNITED STATES PATENT OFFICE.

GEORGE DZURIS, OF HOLYOKE, MASSACHUSETTS.

SKIVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 668,813, dated February 26, 1901.

Application filed October 24, 1900. Serial No. 34,183. (No model.)

To all whom it may concern:

Be it known that I, GEORGE DZURIS, a citizen of the United States, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented a new and useful Skiving-Machine, of which the following is a specification.

This invention relates to skiving-machines, and the aim and purpose of the same is to provide simple and effective mechanism for skiving the counters of boots and shoes, and including novel instrumentalities for bringing different cutters into operative position in relation to the opposite ends of a counter without requiring the latter to be removed from the work-support and reversed or changed in the least from the position in which it was originally placed, and also to have adjustable features which are easily manageable and regulable to vary the depth and angle of cut and to adapt the machine to various thicknesses of counters, the change of the cutters in operative contact with the opposite sides or ends of the counters being effected without stopping the operation of the machine, and thereby expedite the skiving manipulation and the capacity of output of this class of machines.

The invention consists in the construction, arrangement, and combination of parts hereinafter more fully referred to and pointed out in the appended claims and subject to a wide range of modification in the form, size, proportions, and minor details and the equivalent substitutes without departing from the principle of the invention.

In the drawings, Figure 1 is a perspective view of a skiving-machine embodying the features of the invention. Fig. 2 is a transverse vertical section through the upper portion of the machine. Fig. 3 is a top plan view of the same. Fig. 4 is a rear side elevation of the work-support. Fig. 5 is a longitudinal vertical section through the work-support. Fig. 6 is a detail perspective view of the work-clamp. Fig. 7 is a detail perspective view of the intermediate bridge-plate. Fig. 8 is a detail perspective view of a cutter-sharpening attachment.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a standard of any suitable form and vertical extent and provided with a base-plate 2 for securement to a base-rest. On the upper end or extremity of the standard is a horizontal table 3, which projects rearward and has a front, intermediate, and rear vertically-disposed supports 4, 5, and 6, spaced apart from each other, the outer surface of the front support 4 being flush with the similar surface of the standard for a purpose which will presently appear. The intermediate support 5 is thicker than the other two to give ample bearing to the inner extremities of independent driving-shafts 7 and 8, horizontally disposed in said supports, the front shaft 7 having its outer end terminating flush with the outer surface of the support 4, in which it bears, and the rear shaft 8 having a suitable projection from the rear of the support 6, in which it bears to receive any preferred form of grinding wheel or disk 9 for sharpening the cutters and adapted to be replaced at any time found necessary or desirable. Over the portions of the shafts located in the supports cap-boxes 10 are removably secured in order to provide means for easily removing the said shafts and the parts carried thereby for repair or other purposes and to facilitate the easy assembly of the mechanism in operative position. On the said shafts spur-gears 11 and 12 are secured to rotate therewith, and respectively situated in front and rear of the intermediate support 5 and integrally formed with or secured to the said gears are belt-pulleys 13 and 14, the pulley 13 being on the front side of the gear 11 and the pulley 14 on the rear side of its gear. These pulleys will have motion imparted thereto by suitable belts that will be controlled by belt-shifting or analogous devices well known in the art, so that either one or both shafts can be thrown out of operation or both shafts caused to simultaneously operate.

On the inner portions of the shafts 7 and 8 the opposite central side portions of the rocking frame 15 are movably mounted, and between the outer edges of the said portions of the frame and the adjacent gears space-washers 16 are interposed for obvious reasons. The frame 15 is of rectangular form and extends equally at opposite ends over the table

3 from the shafts, and at the center thereof an elongated rectangular slot 17 is formed to permit the frame to freely move over the upper portion of the intermediate standard when adjusted. In the opposite ends of the frame 5 cutter-shafts 18 are rotatably mounted and have pinions 19, secured thereto and revolvable therewith and continually in mesh with the spur-gears 11 and 12, the pinion on each 10 cutter-shaft being in a position relatively to the length of the latter corresponding to the location of the said gears. The cutter-shafts 18 extend in advance and in rear of the front and rear edges of the frame ends supporting 15 the same and are held against longitudinal movement by set-collars 20, applied thereon. The rear extremities of the shafts 18 are depressible in vertical seats 21 in the upper end portions of the rear support 6, and the front 20 portions of said shafts are formed with circumferential grooves 22, likewise depressible in similar seats 23, formed in the opposite end portions of the front support 4, and on the front ends of the shafts in advance of the latter support cylindrical cutters 24 are secured 25 and provided with a plurality of cutting-blades 25. The purpose of the seats and the circumferential grooves in the cutter-shafts is to permit the cutters on the latter to be 30 brought down to the work with sufficient pressure and in accordance with adjustments which will be hereinafter set forth in order to accommodate various thicknesses of work and the depth of cut desired. To each end of the 35 frame 15 a rod 26 is movably attached and depends to a treadle 27 of suitable form, whereby the opposite ends of the frame and the cutters carried thereby may be depressed at will, so that an operator may quickly dispose the 40 cutters in working position over the work-support without requiring the use of the hands. These treadles may be of any arrangement, the form shown being merely to demonstrate a practical arrangement or complement, and by placing springs in connection 45 with or bearing upon the treadles it will be obvious that they will be returned to normal position when released, and consequently hold the frame horizontally and both cutters 50 raised equally, as shown by Fig. 1.

The work-support 28 is of a composite nature and capable of having a swinging movement imparted thereto to move the work at either end under the cutters which project 55 thereover. The said work-support comprises outer and rear plates 29 and 30, both of substantially similar form and converged to a limited degree toward their lower ends and shouldered at their upper extremities to provide upstanding centrally-located projections 60 31. Between the said plates work-bed holders 32 are adjustably mounted and have upper work-bed sections 33 disposed horizontally thereon and fitted over the shouldered 65 portions of the upper extremities of the said plates. These work-bed sections have portions of their upper surfaces concaved to per-

mit the intermediate portions of the counters to be depressed and the edges raised for purposes well-known in this art, and said sections 70 also have a slight downward inclination to cause both to have an angle relatively to each other proportionate to the lateral arc of movement of the work-support as an entirety in order to bring the work up to the cutters to effectively acquire the skive bevel desired. The 75 work-bed holders 32 are reduced toward their lower ends and have a space between the inner opposing edges thereof to permit adjustment of the same, and extending transversely 80 through the upper and lower portion of each holder are retention bolts or pins 34, continuing through upper and lower pairs of transversely-alined slots 35 in the plates 29 and 85 30, the heads of the said bolts or pins being seated in marginal recesses 36 around the slots 35 in the rear plate 30 and the outer ends of the bolts or pins supplied with screw-threads to receive tightening-nuts or analogous devices that bear against suitable biting- 90 washers 37, fitted over the said screw-threaded ends of the bolts or pins and particularly used in connection with the upper bolts or pins, though in some instances said washers will be applied to the lower bolts or pins. It 95 is preferred to have the washers 37 engaged by adjacent roughened surfaces on the plate 29, or small locking corrugations can be used, both constructions being well understood and having the function to prevent the washers 100 from slipping and maintain the plates and holders in proper working relation in accordance with the adjustment. By countersinking the heads of the pins or bolts in the rear plate 30 projections from the said plate are 105 avoided and interference with the swing of the holder or work-support as an entirety is obviated. To regulate the distance between the work-bed holders 32, an adjusting-screw 38 is employed and is freely movable through 110 one holder from the outer to the inner edge and has a screw-threaded extremity engaging a screw-threaded opening in the other holder, and by this means the extent of the work-beds on the other portions of the holders 115 may be varied at will to accommodate different lengths of counters. The upper inner edge portions of the work-beds are formed with channels or grooves 39 to removably receive a bridge-plate 40, having reduced side 120 edges 41 to fit in the said channels or grooves and replaceable by other wider or narrower similar plates to compensate for the dimensions of the opening formed between the inner edge portions of the bed-plate by the adjustment of the holders 32, the opening and 125 closing adjustment of the said work-beds permitting the easy application of the said plates and the removal of the same for the purpose of substitution. The lower ends of the holders 32 are formed with tongues 42 to loosely 130 extend into the upper grooved end 43 of a lower center-block 44, to which the lower portions of the plates 29 and 30 are firmly se-

cured, and depending from the center of the lower end of the said block is an angular stem 45, which adjustably depends into a lower socket 46, having a lower adjusting screw-bolt 47, that bears against the lower end of the said stem and employed to maintain the work-holding beds at all times in proper relation to the cutters, such vertical adjustment being effected to take up wear or to compensate for any other irregularity that may arise and rectifiable by a vertical adjustment of the entire work-support. The stem is held rigidly in its adjusted condition by upper set-screws 48, seated in the outer upper portion 15 of the socket, and extending inwardly from the inner lower portion of the latter is a pivot or fulcrum bolt 49, secured in the standard 1 at a proper elevation and on which the entire support is permitted to swing.

To the lower extremity of the outer plate 29 an upwardly-inclined arm 50 is rigidly secured and has a grip 51 at its outer terminal for engagement by one hand of the operator to direct the movement of the work-support as an entirety. On the upper portion of the same plate another outstanding grip 52 is fixed, and below the same is a lever 53, having an inner angular end 54, loosely connected to the outer projecting end of a locking-pin 55 movably projecting transversely through both plates 29 and 30, and is engaged by a spring 56 between the said plates, operating to normally impel the pin inwardly into locking position. The inner end of the pin will automatically enter a socket 57, formed for the reception thereof in the upper portion of the standard 1, and when the said pin is in its socket, as shown by Fig. 2, the entire work-support will be centrally held, as shown by Fig. 1, and in convenient position for receiving the counters to be skived. When the work-support is in this locked condition, the cutters will be held elevated, as shown; but as soon as the work has been disposed on the beds or bed-sections the operator can readily grasp the lever 53 and pull up on the same with the grip 52 as a resistance, and thereby draw the pin 55 outwardly from its socket and allow the support to be swung.

As a convenient and simple means of firmly holding the work on the bed-sections the form of work-clamp shown in detail in Fig. 6 is employed and is applied to the projections 31, the latter each having a slot 58 for this purpose. The work-clamp has an intermediate substantially elliptical body 59, having the lower face concaved in a longitudinal direction or in the direction of the longer axis thereof and transversely serrated or ribbed, as at 60. From the rear edge of the said body 59 an arm 61 projects and is provided with a rear terminal knuckle 62, pivotally held in the slot of the inner projection 31, and diametrically opposite said arm an angular keeper 63 projects from the outer edge of the said body for engagement with the slot of the outer projection 31 to prevent lateral move-

ment of the clamp that might rise from wear or other strain, and continuing outwardly from the said keeper is a handle 64, which projects over the grip 52 below, and thereby makes it possible for the operator to use one hand in holding down the clamp and pulling up on the lever 53 with greater force in view of the upper resisting means provided by the said handle 64 and accurately control the movement of the upper portion of the work-support, while the other hand is in engagement with the lower portion of said support through the medium of the arm 50 and grip 51. The work-holding clamp can be easily raised to release the work and is thrown up out of the way while the work is disposed on the bed-sections therefor. When the clamp is down on the work, the latter will be held from slipping or becoming misplaced.

The inner edges of the work-holding bed-sections are provided with vertically-disposed adjustable rails 65, having their upper edges inclined downwardly in an outward direction, and on said edges the portions of the cutters extending beyond the outer surface of the support 4, as shown by Fig. 3, are adapted to have bearing to regulate the depth of depression of the cutters on the said shafts and the corresponding depth of cut of the counter extremities. The said rails each have a vertical slot 66 engaged by a guide pin or screw 67, entering the center of the rear edge of each bed-section, and the lower edge portion of each rail is also seated or rested normally against a lower rearwardly-projecting flange 68, having a pair of adjusting-screws 69 mounted therein and contacting with the lower edge of the rail. By this means it will be seen that the rails can be raised or lowered, as desired, and the depth of cut of the cutters regulated at will.

On the rear side of the support 6 an adjustable plate 70 is mounted adjacent the grinding wheel or disk 9 and has an outwardly-projecting stub-shaft 71 arranged parallel with the rear projecting portion of the shaft 8 to removably receive either of the cutters and hold the latter in grinding position relatively to the grinding wheel or disk, and to prevent the cutters from turning away from the said disk, the plate 70 is also provided with a stop-rod 72, parallel with the said stub-shaft, and on which the blade of the cutter being sharpened has bearing.

From the foregoing description the operation of the several mechanisms will be readily apparent, and it will be observed that the counters can be more positively and quickly skived at the opposite ends without at any time directly rearranging the same after the first application, and thereby increase the capacity of the machine by avoiding the delay incident to reversals or change of position of the work.

Having thus described the invention, what is claimed as new is—

1. A skiving-machine comprising a work-

support, and oppositely-disposed rotary cutters alternately movable toward different extremities of the said support to skive the opposite ends of the same piece of work.

5 2. A skiving-machine comprising a work-support freely movable in the arc of a circle, and oppositely-disposed cutters movable in relation to the opposite extremities of the said support.

10 3. A skiving-machine comprising a work-support freely movable to change the angle of the work thereon, and independent cutters alternately movable toward different extremities of said support.

15 4. A skiving-machine comprising a vertically-adjustable work-support, cutters alternately depressible toward opposite extremities of said support to coact with different portions of the latter, and means of adjustment
20 for varying the depth and angle of cut.

5. A skiving-machine comprising a movable work-support, a rocking frame carrying cutters at opposite portions thereof, and means for operating said frame and cutters.

25 6. A skiving-machine comprising a work-support freely movable to change the position of the work, independent oppositely-disposed cutters to engage different portions of the support, and independent mechanisms for op-
30 erating the cutters.

7. A skiving-machine comprising a work-support movable to change the position of the work and having bed-sections adjustable toward and from each other to vary the length
35 of said support, and independent cutters movable toward opposite portions of the said support.

40 8. A skiving-machine comprising a work-support movable to change the position of the work and having bed-sections adjustable toward and from each other to vary the length

of the support, a removable space-closing device between the sections, and independent cutters movable toward opposite portions of the said support.

45 9. A skiving-machine comprising a work-support having vertically-adjustable rails, and independent cutters movable toward opposite portions of the said support and having their depression controlled by the adjustment of said rails.

10. A skiving-machine comprising a work-support having adjustable bed-sections and adjustable rails on the latter, and cutters movable toward different portions of the support and having their depression controlled
55 by the adjustment of said rails.

11. A skiving-machine comprising a movable work-support having means for locking the same in fixed position, and cutters movable toward opposite portions of the work-support, the said cutters being held elevated in a horizontal plane when not in operation.

12. A skiving-machine comprising a movable work-support, a clamp movably mounted
65 over the central portion thereof and operating in a transverse direction, and cutters movable toward opposite portions of the support.

13. A skiving-machine having upstanding supports with seat-recesses in a portion of
70 the same, movable cutters on independent shafts having extremities movable into the said recesses, and a work-support below the said cutters.

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

GEORGE DZURIS.

Witnesses:

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