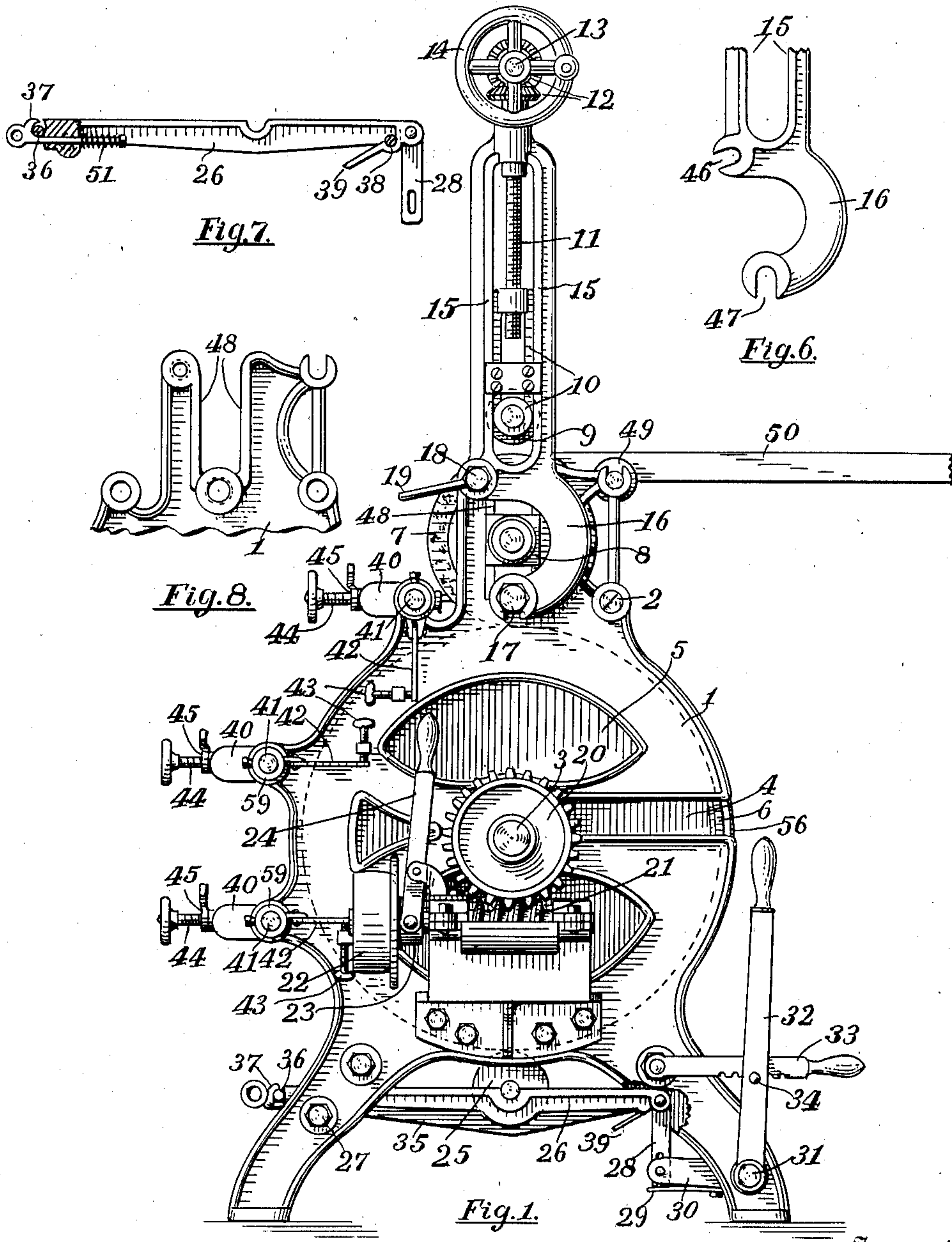


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APPLICATION FILED APR. 3, 1908.

906,946.

Patented Dec. 15, 1908.

3 SHEETS—SHEET 1.



Witnesses

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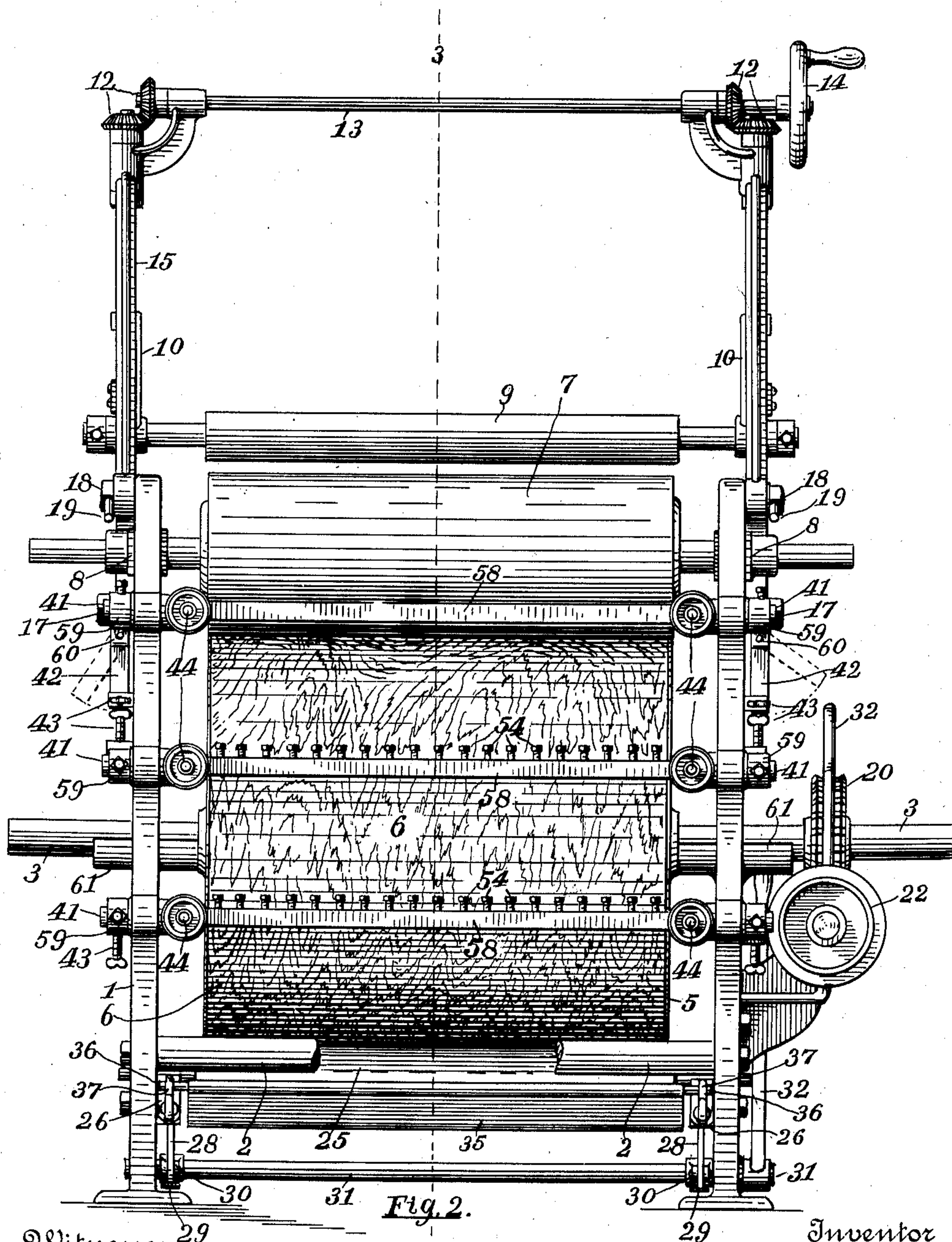


Fig. 2.

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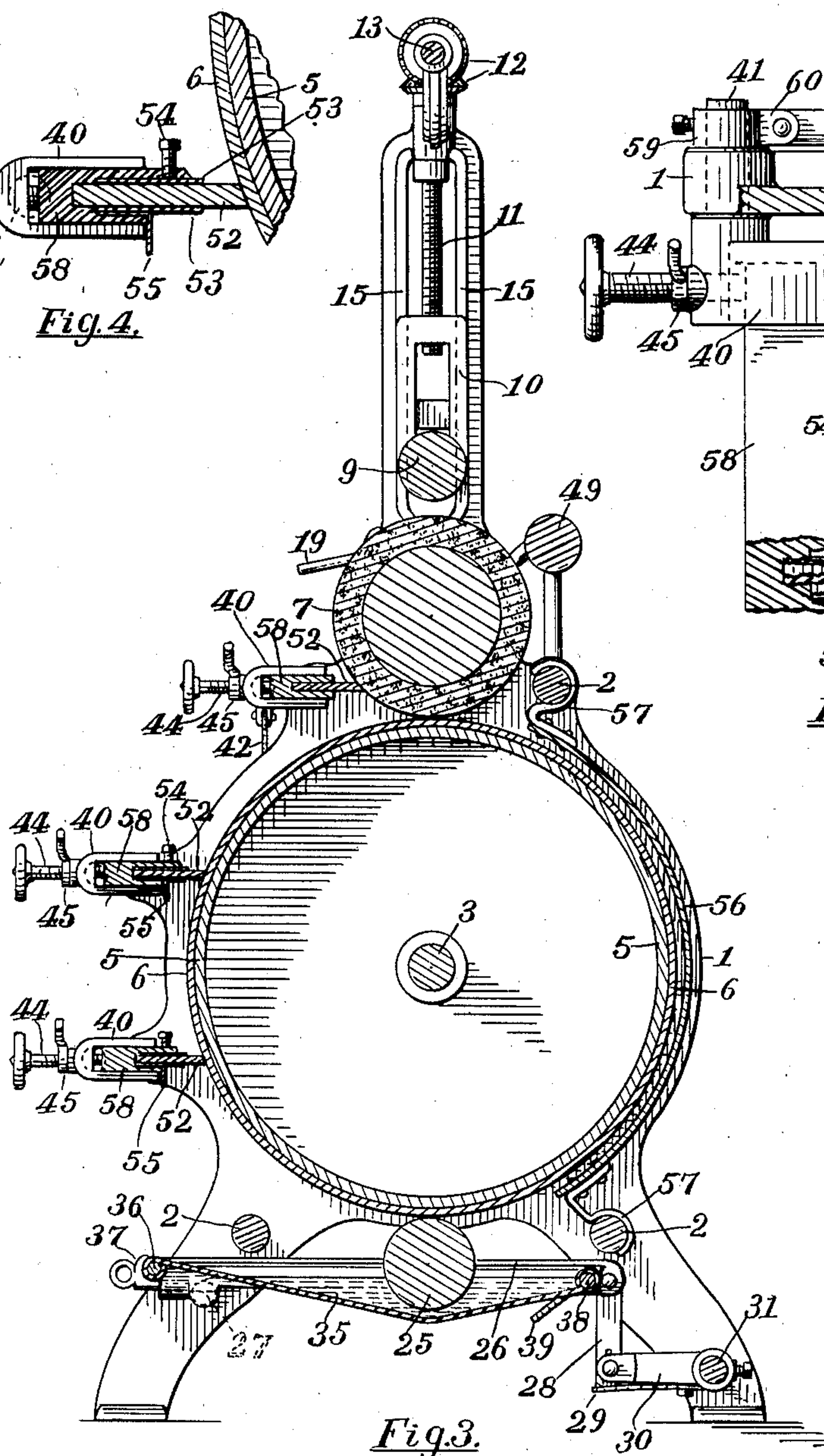
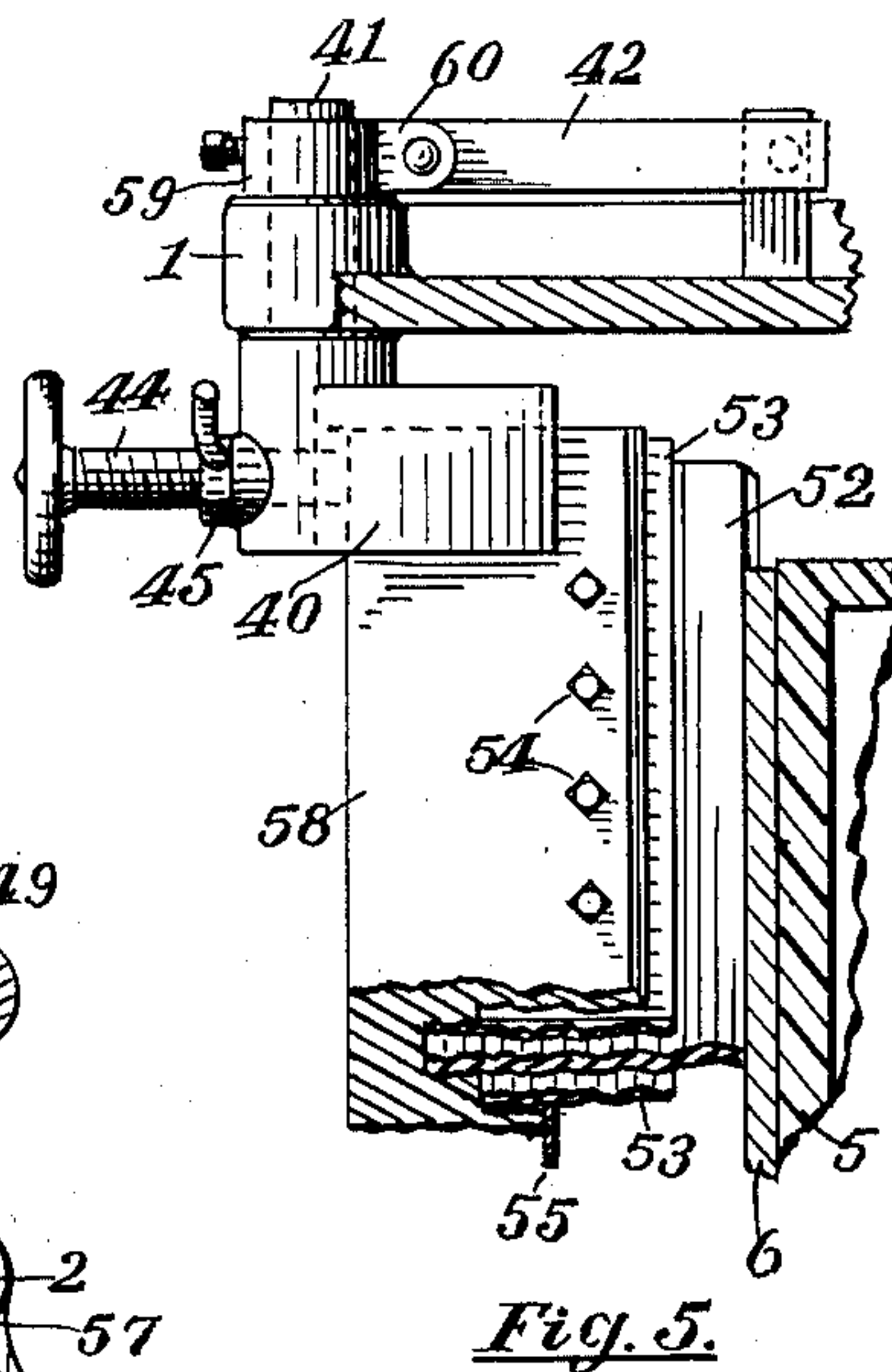
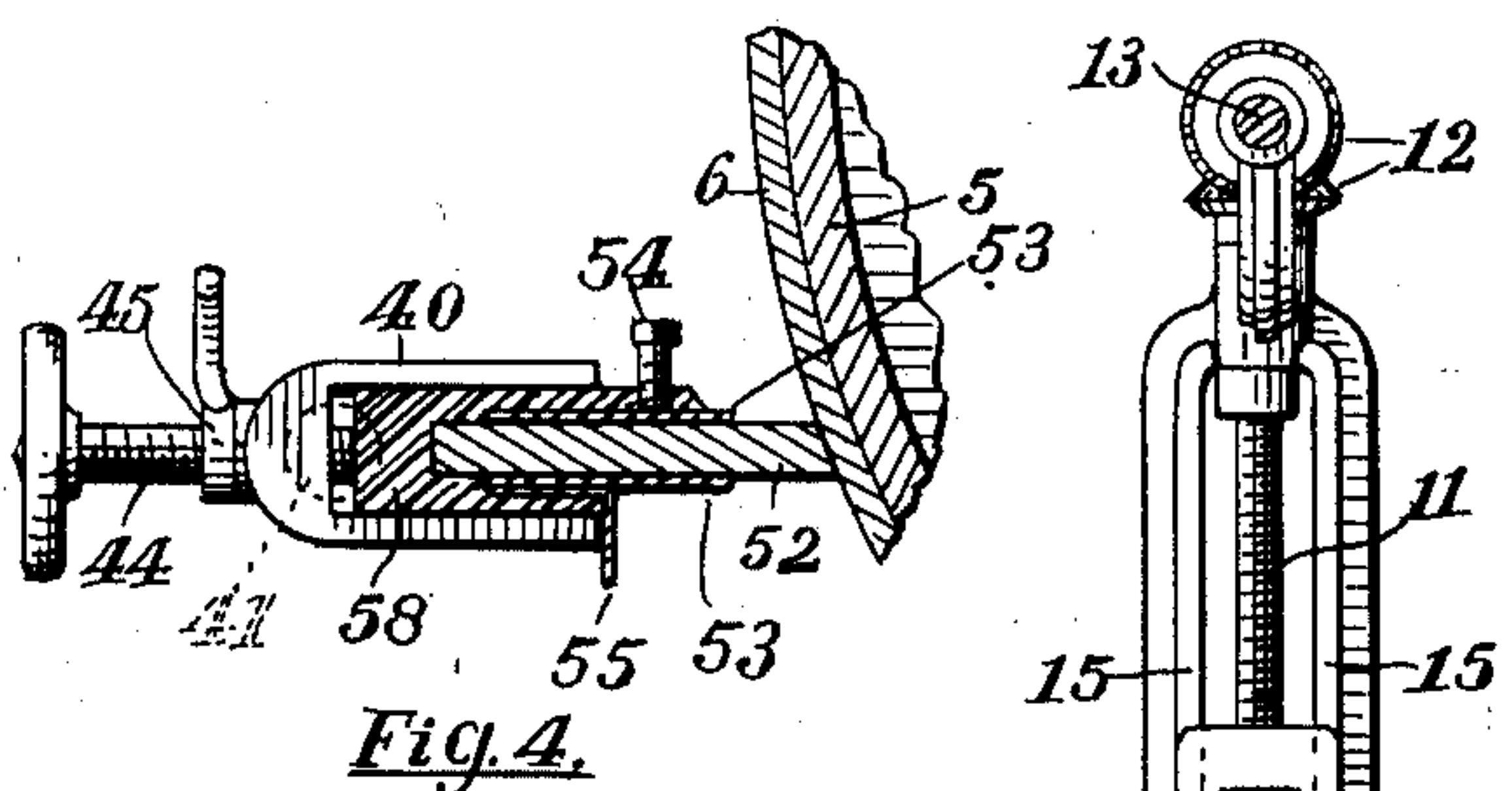


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*Alfred Harry Sherwood*  
By *Luther V. Moulton*  
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# UNITED STATES PATENT OFFICE.

ALFRED HARRY SHERWOOD, OF GRAND RAPIDS, MICHIGAN.

## GRAINING-MACHINE.

No. 906,946.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed April 3, 1908. Serial No. 424,927.

*To all whom it may concern:*

Be it known that I, ALFRED HARRY SHERWOOD, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Graining-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in graining machines, and its object is to provide the same with various new and useful features hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which:

Figure 1. is an end elevation of a machine embodying my invention; Fig. 2. a side elevation of the same; Fig. 3. a vertical section on the line 3—3 of Fig. 2; Fig. 4. an enlarged detail in transverse section of one of the scrapers; Fig. 5. a plan view of the same; Fig. 6. a detail of the lower end of one of the detachable ways; Fig. 7. a detail of one of the reservoir supports; and, Fig. 8. a detail of the upper part of one of the main frames.

Like numbers refer to like parts in all of the figures.

The operating mechanism is supported in a frame consisting of end castings 1—1 of suitable form arranged in parallel vertical planes, spaced apart and rigidly connected by tie rods 2. Journaled in the major axis of this frame is a main shaft 3 supported in open bearings 61, which shaft is oppositely extended to provide for manually lifting the main cylinder 5 and removing the same by carrying the shaft upward, and outward through horizontal slots 4 in the frames 1. On the main shaft is mounted the main cylinder 5, which cylinder is covered on its periphery by wood veneer 6 having the desired grain, to be imprinted upon the work. Mounted above the main cylinder and rolling in contact therewith is a printing roller 7 having an elastic surface preferably made of material similar to inking rollers used in printing presses. This roller is journaled in vertically movable boxes 8 inserted in ways 48 in the frames 1, which ways are open at the top for free removal of the boxes together with the roller 7. The journals of this roller are extended outward from the box to con-

veniently lift the boxes out of the ways together with the roller 7. A pressure roller 9 is located above the roller 7 to engage the stock and force the same in contact with the latter. This roller 9 is mounted in bearings 10 vertically adjusted in ways 15 in detachable hangers 16 by means of screws 11, which screws are connected by bevel gears 12 to a transverse shaft 13 journaled in brackets at the top of the hangers and operated by a hand wheel 14 to simultaneously turn the screws and adjust the bearings in the ways. These hangers 16 are detachably secured to the upper ends of the frames 1 by being provided with recesses 47 to receive cap screws 17 inserted in the frames and upon which the hangers are supported, being secured in vertical position by other cap screws 18 provided with hand levers 19 to adjust the same, and inserted in the frames and engaging recesses 46 in the sides of the hangers 16. The main cylinder 5 is rotated by means of a worm gear 20 fixed on the shaft 3, and a worm 21 engaging the gear and mounted on a shaft provided with a loose pulley 22 connected to the shaft by a clutch 23 operated by a lever 24 and driven by any convenient belt.

25 is an inking roller below the main cylinder 5 and engaging the surface of the veneer 6. This roller is journaled in open bearings in levers 26, each being pivotally supported on the frame at one end as at 27 and yieldingly supported at the other end by means of a connecting rod 28 pivoted thereto at one end and movably connected to an arm 30 and supported on a spring 29 attached to the arm. These arms 30 are fixed on a rock shaft 31 manually adjusted by a lever 32, which lever is held in adjusted position by a detent 33 having a series of notches in its under side, adapted to engage a pin 34 in the lever 32. Thus by adjusting the lever 32, the roller 25 is yieldingly pressed against the under side of the cylinder 5 by the upward pressure of the springs 29 against the ends of the connecting rods 28.

35 is a reservoir adapted to contain the coloring material used in liquid form, which reservoir is supported beneath and partly inclosing the roller 25 by means of rods 36 and 38 extending across its opposite sides and projecting therefrom. The rod 38 rests in recesses in the bars 26 and is guided thereto by inclined ways 39. The rod 36 rests upon



spring clips 37 and is secured in place thereby, said clips being operated by springs 51, all substantially as shown in Fig. 7.

To remove the surplus coloring material from the veneer, I provide horizontally disposed ways 40 pivoted to the frames 1 by journals 41 in each opposing pair of which ways, is mounted a horizontally disposed bar 58 parallel with the axis of the cylinder 5. I prefer to use two of these bars, one above the plane of the said axis and the other below the same. These bars are adjustable toward the cylinder by means of screws 44 held by jam nuts 45. In each bar is mounted a strip of slightly yieldable material 52, preferably of sole leather or other like material, fitting closely at its inner edge against the surface of the veneer 6 as illustrated in Fig. 4. This strip 52 is preferably clamped within a longitudinal channel in the bar 58 and supported by thin resilient strips of metal 53, and to accurately adjust the edge of this strip 52, (which is very important to get evenness of color on the work) I provide set screws 54 at intervals in the bar 40 which engage the upper strip 53. By adjusting these screws, the edge of the strip 52 can be raised or lowered opposite each respective screw to accurately adjust the same to the surface of the veneer 6. 55 is an angle strip to prevent the liquid removed from the veneer 6 by the strip 52 from flowing back upon the under side of the bar 58. To maintain yielding contact of the strip 52 with the veneer 6, I provide each pivot 41 with a resilient arm 42 pivotally connected to the same and extending in contact with a set screw 43 to adjust the tension of the arm. By turning the arm upon the pivot, the bar may be released in turn upon the pivots to throw the scraper 52 out of contact with the veneer surface of the cylinder. A similar scraper combination of pivoted ways, grooved bar and scraper, together with adjusting screw and spring arm is provided for the printing roller 7, the surface of which being elastic does not require the fine adjustment of the scraper secured by the set screws 54, heretofore described.

49 is a roller to guide the work between the rollers 7 and 9, or a horizontally disposed table 50 may be used for the same purpose.

56 is a curved shield of sheet metal concentric with one side of the cylinder 5 and near the same. This shield is detachably supported in place by hooks 57 attached to its respective upper and lower edges and engaging the upper and lower rods 2 at the side of the frame opposite the scrapers. The resilience of the shield forces the hooks in close contact with the rods and thus retains the shield in place.

What I claim is:

1. A graining machine comprising a cylinder having a surface of wood veneer, a roller engaging the cylinder, levers pivoted at one

end and intermediately supporting the journals of the roller, springs supporting the other end of the levers, a rock shaft to which the springs are connected and means for adjusting the rock-shaft.

2. A graining machine comprising a cylinder having a surface of wood veneer, a roller engaging the under side of the cylinder, levers pivoted at one end and intermediately supporting the journals of the roller, connecting rods supporting the other end of the levers, arms slidably connected to the rods, a rock shaft on which the arms are mounted, springs attached to the arms and supporting the rods, a lever to adjust the rock shaft, and a detent to hold the lever.

3. A graining machine comprising a cylinder having a surface formed or wood veneer, a roller engaging the under side of the cylinder, a reservoir beneath the roller and having oppositely projecting rods in its opposite sides, pivoted levers supporting the journals of the roller and having recesses to receive the ends of one of the rods, spring clips in the levers to engage and support the ends of the other rod and yielding supports for the levers.

4. A graining machine comprising a cylinder having a surface of wood veneer, a roller engaging the under side of the same, a reservoir beneath the roller and having oppositely projecting rods in its opposite sides, pivoted levers supporting the journals of the roller and having recesses to receive the ends of one rod, inclined guides on the levers to engage and guide the said rod, and spring-actuated clips in the levers to engage and support the ends of the other rod.

5. A graining machine comprising a rotative cylinder, means for applying coloring material thereto, a strip of yielding material engaging the cylinder, a bar supporting said strip, pivoted ways in which the bar is supported and slidable, means for adjusting the bar in the ways, and springs connected to the ways to turn the same on their pivots and yieldingly engage the strip with the veneer.

6. In a graining machine, the combination of a rotative cylinder, means for applying coloring material thereto, a strip of material having one edge engaging the cylinder, a grooved bar embracing the other edge of the strip, ways supporting the bar and having journals in line with the bar, resilient arms attached to the journals to yieldingly hold the edge of the strip in contact with the cylinder, and set screws engaging the arms to adjust the tension thereof.

7. In a graining machine, the combination of a rotative cylinder, a strip having one edge engaging the cylinder, a grooved bar embracing the strip, pivoted ways supporting the bar, means for adjusting the bar in the ways, a resilient arm pivotally connected to each way at one end, and a set screw engaging the other end of each arm.

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8. In a graining machine, the combination of a rotative cylinder, a strip of elastic material having one edge engaging the cylinder, a grooved bar embracing the other edge of the strip, flexible plates at the respective sides of the strip and in the groove of the bar, set screws at intervals in the bar and engaging one of the flexible strips, pivoted ways supporting the bar, means for adjusting the bar in the ways, and resilient arms connected to the ways to yieldingly force the edge of the strip in contact with the cylinder.

9. In a graining machine, the combination of a rotative cylinder having a wood veneer surface, means for applying coloring matter thereto, means for removing the surplus coloring matter therefrom, an elastic roller engaging the cylinder, a pressure roller above the elastic roller, frames each having a horizontal slot and an open bearing to receive the journals of the cylinder, each frame also having vertically open ways to receive the journal boxes of the elastic roller, and detachable hangers supporting the pressure roller, each hanger being provided with recesses to receive screws inserted in the frames.

10. In a graining machine, the combination of a rotative cylinder, an elastic roller

engaging the upper side of the cylinder and journaled in removable boxes, a pressure roller above the elastic roller, frames connected by tie rods and each having a horizontal slot and an open bearing to receive the journal of the cylinder, each frame also having vertical ways open at the top to receive the boxes of the elastic roller, hangers each having a recess at the lower end and a side recess to detachably receive set screws, and vertically adjustable bearings in the hangers in which the pressure roller is journaled.

11. In a graining machine, a rotative cylinder, frames supporting the cylinder and each having a horizontal slot and an open bearing to receive a journal of the cylinder, tie rods connecting the frames, a resilient and curved guard partially surrounding the cylinder, and hooks on the guard detachably held in engagement with the rods by the resilience of the guard.

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

ALFRED HARRY SHERWOOD.

Witnesses:

PALMER A. JONES,  
GEORGIANA CHACE.