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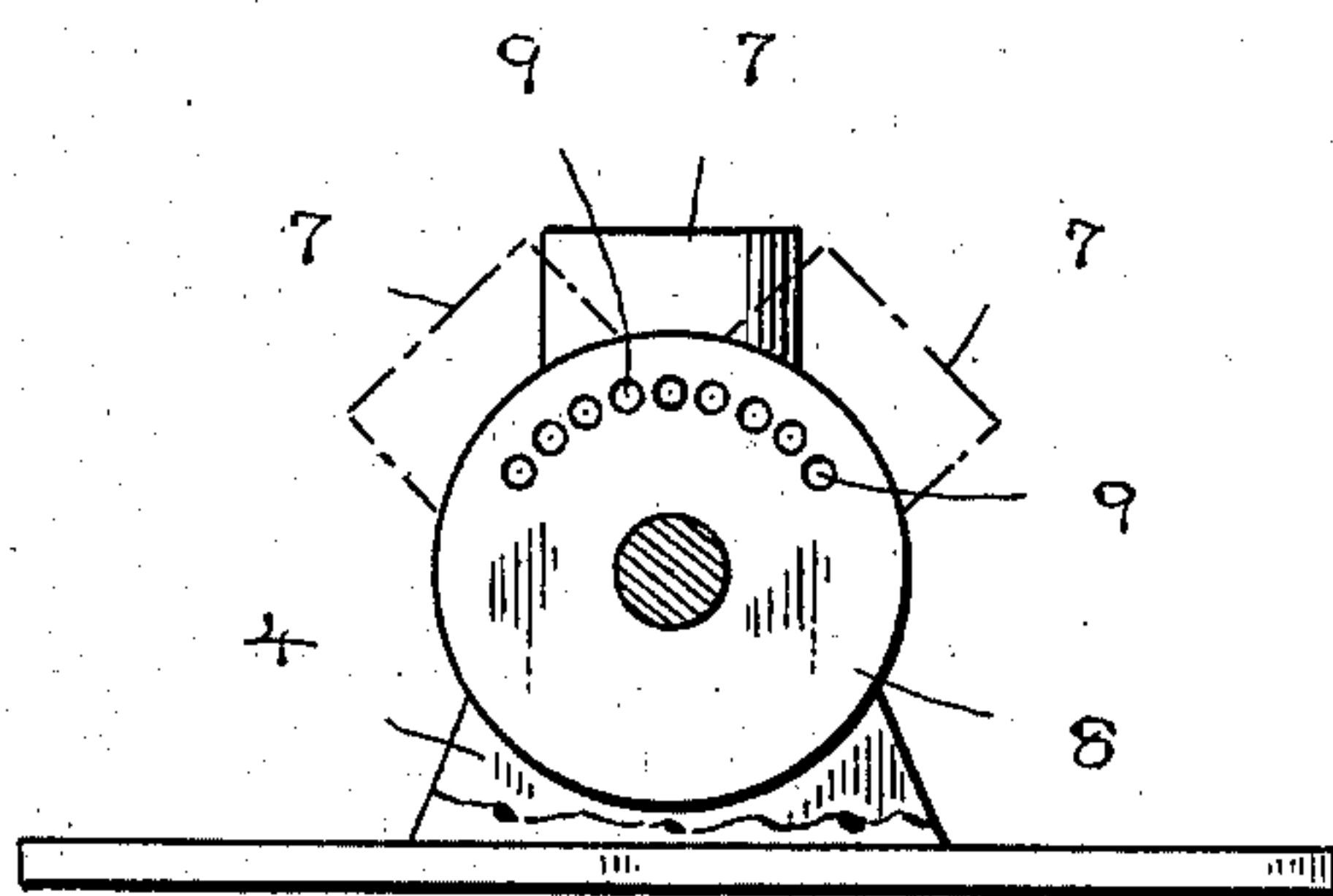
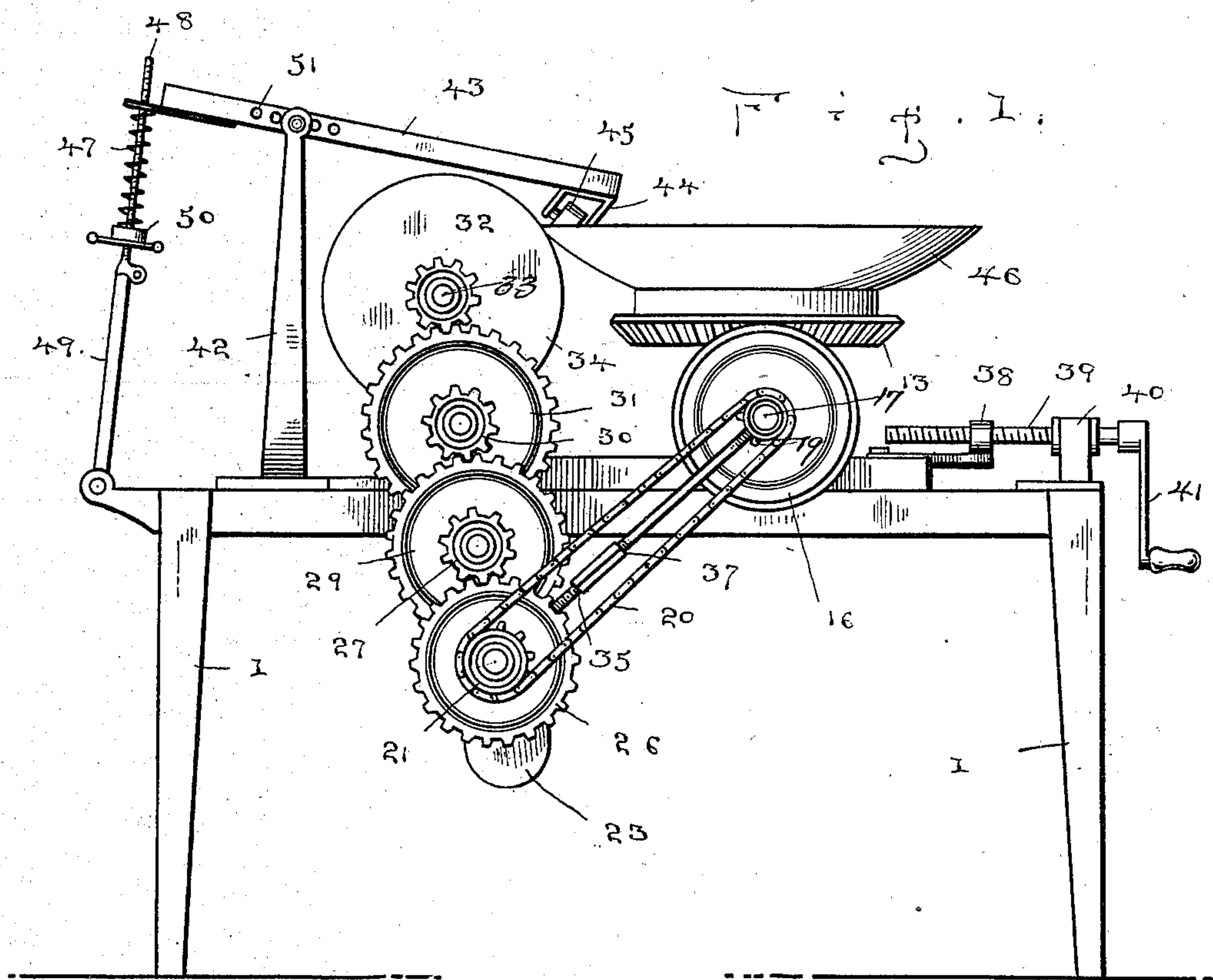
PATENTED MAR. 17, 1903.

A. T. SHIPP.
MACHINE FOR GRINDING DISKS.

APPLICATION FILED NOV. 29, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

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By

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Victor J. Evans

Inventor

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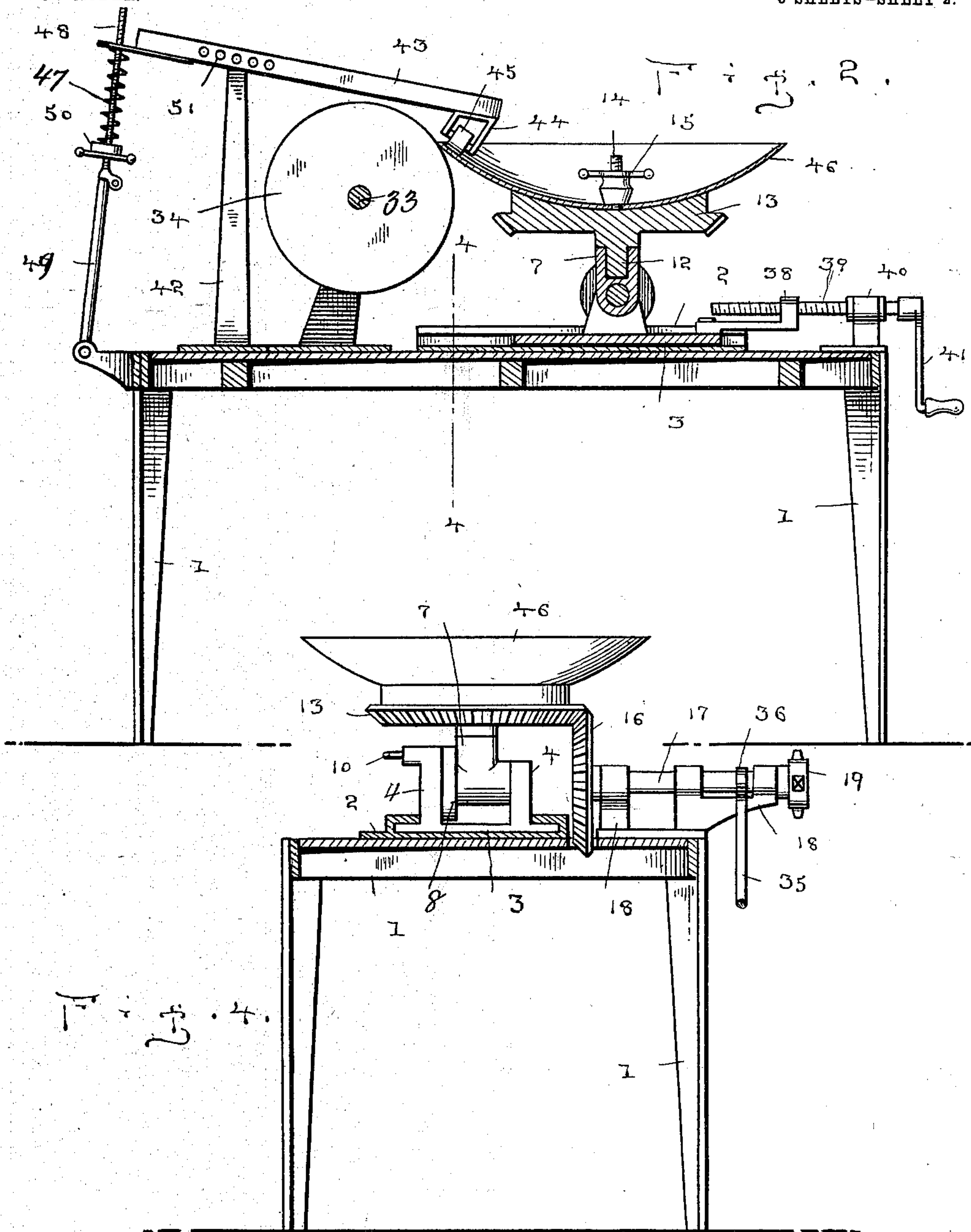
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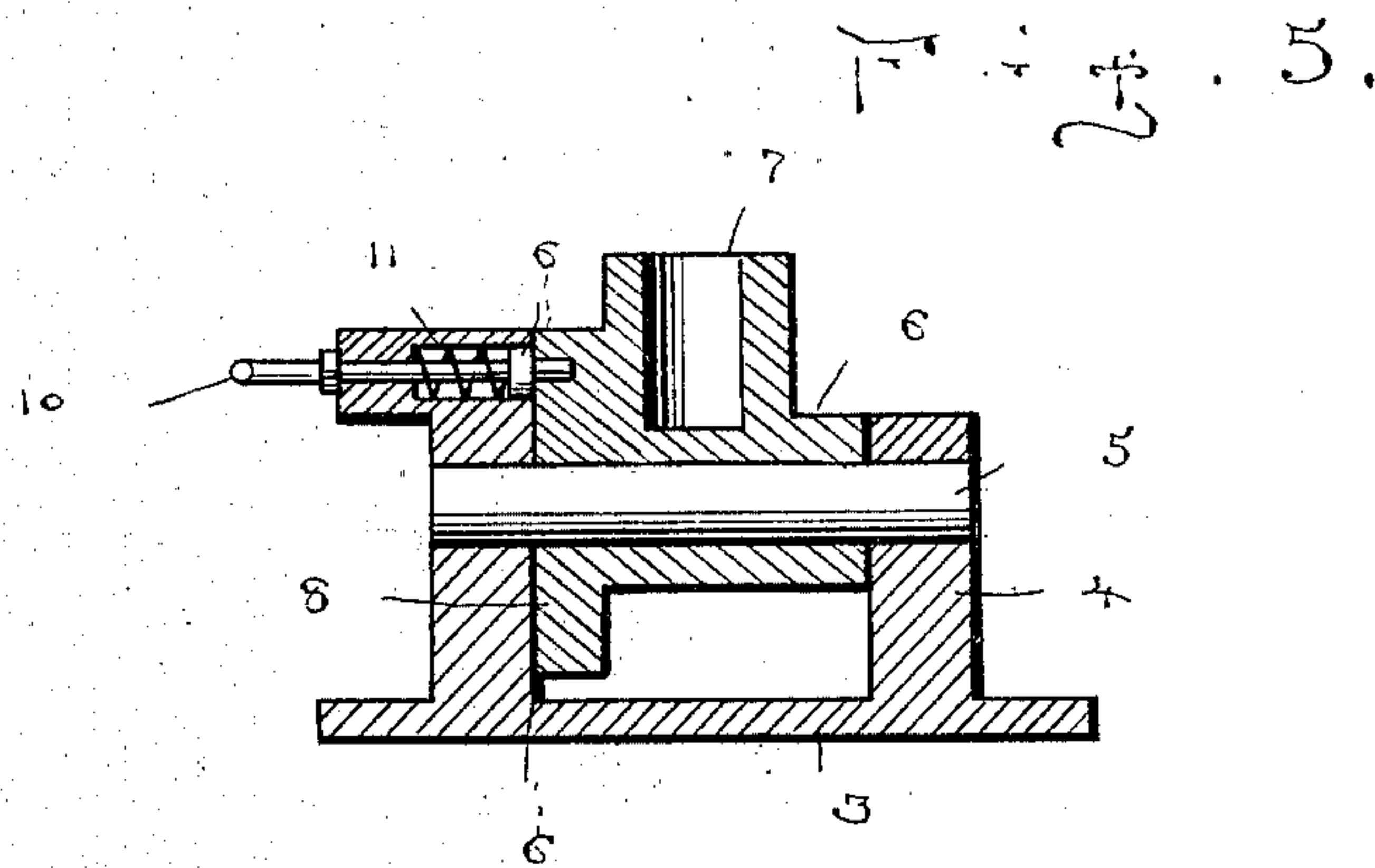
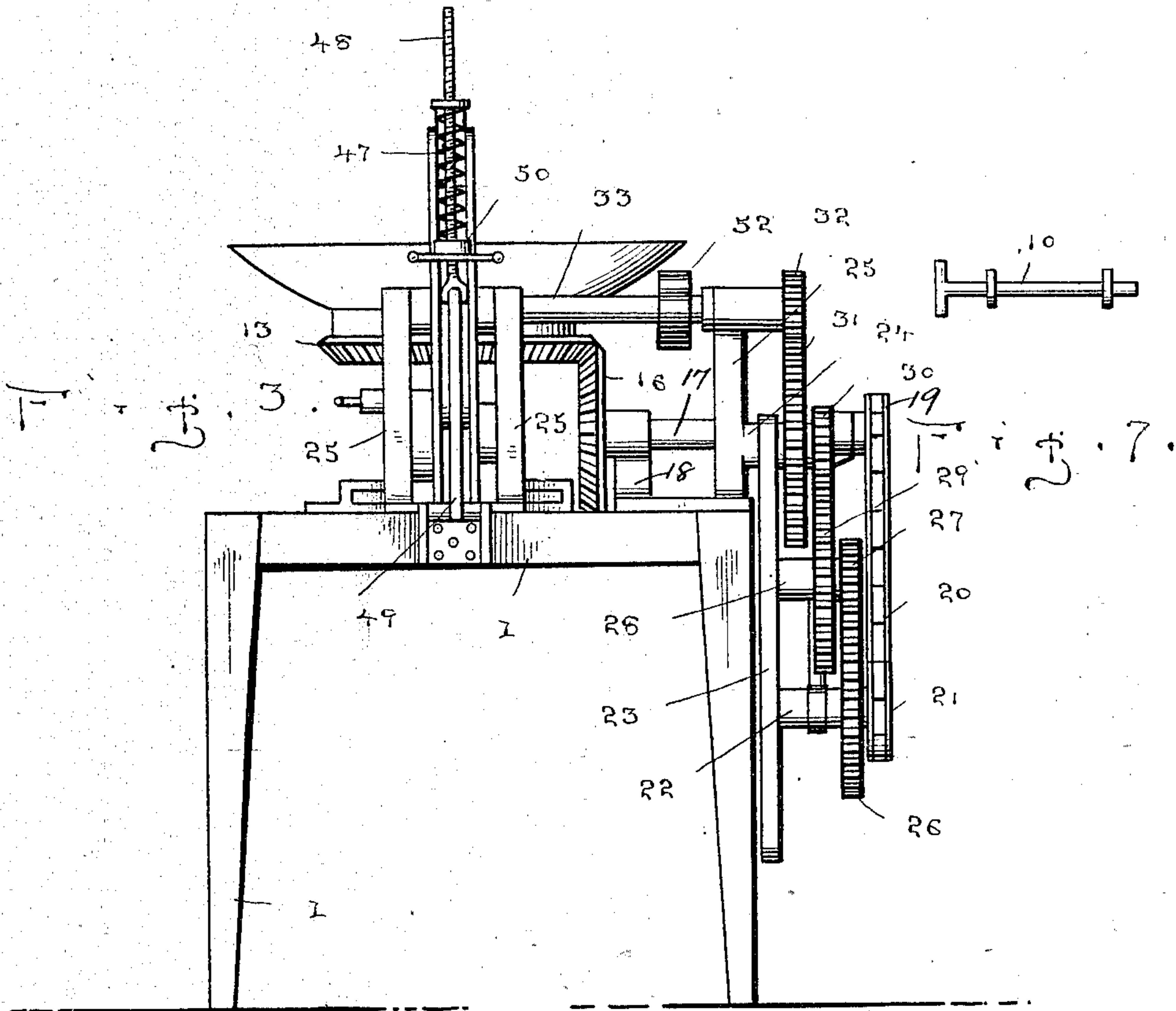
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3 SHEETS—SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

ABIJAH T. SHIPP, OF RENNER, TEXAS.

MACHINE FOR GRINDING DISKS.

SPECIFICATION forming part of Letters Patent No. 723,051, dated March 17, 1903.

Application filed November 29, 1902. Serial No. 133,221. (No model.)

To all whom it may concern:

Be it known that I, ABIJAH T. SHIPP, a citizen of the United States, residing at Renner, in the county of Collin and State of Texas, have invented new and useful Improvements in Machines for Grinding Disks, of which the following is a specification.

My invention relates to new and useful improvements in grinding-machines; and it is more especially adapted for sharpening or grinding the edges of concavo-convex disks.

The object of the invention is to provide means for holding the disk rigidly at a desired angle, said holding means being adjustable from or toward a grinding device.

Another object is to employ a novel arrangement of driving-gears whereby rotary motion may be imparted from the fixed shaft of the grinding device to the disk-holder, such transmission of motion being unaffected by the adjustment of the holder from or toward the grinder.

A further object is to provide means for holding the disk firmly upon said grinder.

With the above and other objects in view the invention consists in the novel construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of the grinding-machine, showing a disk in position thereon. Fig. 2 is a vertical longitudinal section through the machine. Fig. 3 is an end elevation. Fig. 4 is a vertical transverse section on line 4 4, Fig. 2. Fig. 5 is a section through the adjusting mechanism of the disk-holder. Fig. 6 is a section on line 6 6 of Fig. 5, and Fig. 7 is a detail view of the locking-plunger of the disk-holder-adjusting mechanism.

Referring to the figures by numerals of reference, 1 is a frame of any suitable form having a horizontal guideway 2 thereon, within which is mounted a slidable plate 3, having standards 4 thereon. A shaft 5 is secured in the standards and serves to support a sleeve 6, having a socket 7 in the upper face thereof and provided at one end with a flange 8. This flange has a series of apertures 9 therein, any one of which is adapted to be engaged by a plunger 10, slidably mounted within one of the standards 4 and normally held in engage-

ment with the flange by means of a spring 11. The socket 7 is adapted to receive a pin 12, extending downward from the center of a beveled holding-gear 13, the upper face of which is concave and preferably provided at the center with a vertical screw-threaded pin 14, upon which is mounted a thumb-nut 15. The gear 13 meshes with a beveled gear 16, mounted on the inner end of a shaft 17. This shaft is journaled in suitable brackets 18, arranged upon frame 1, and is provided at its outer end with a sprocket 19. A chain 20 extends over this sprocket and also over a sprocket 21, secured at the outer end of a stud-shaft 22, extending laterally from a casting 23. This casting is suspended from and pivoted to a stud-shaft 24, projecting laterally from standards 25, secured upon frame 1 near the rear end thereof. A gear 26 is connected to and revolves with the sprocket-wheel 21 and meshes with a smaller gear 27, mounted on a stud-shaft 28, located intermediate the shafts 22 and 24, before referred to. This smaller gear is also connected to and revolves with a larger gear 29, meshing with a smaller gear 30 upon shaft 24. A large gear 31 revolves with this gear 30 and meshes with a gear 32, which is arranged at the outer end of a shaft 33, journaled in standards 25. A grinding-wheel 34 is secured to the inner end of this shaft 33. A rod 35 is provided at opposite ends with sleeves 36, which are mounted upon the shafts 22 and 17, respectively, and this rod serves to hold said shafts at the same distance apart at all times. If desired, however, suitable adjusting means, as a turnbuckle 37, may be provided upon the rod, so as to permit the chain 20 to be tightened by pressing said shafts apart. The slide 3 is provided at its forward end with an internally-screw-threaded ear 38, which is engaged by a screw 39, journaled in a standard 40, and provided at its outer end with a crank 41 or other means whereby the same may be readily turned. By means of this screw the slide 3 can be moved from or toward the grinding-wheel 34.

A standard 42 is arranged upon the frame 1 near the rear end thereof, and a beam 43 is pivoted in the top thereof. An inclined bracket 44 is secured to the lower surface of this beam at the inner end thereof, and a

roller 45, of rubber or other similar material, is journaled within this bracket and is adapted to bear upon the inner surface of the disk 46, which has been placed upon the gear 13, in the manner hereinafter described. This roller 45 is normally pressed downward by a spring 47, which encircles a threaded rod 48, extending through the outer end of beam 43 and pivoted at its lower end to a rod 49, extending upward from frame 1. A nut 50 is mounted on the rod 49, and by means thereof the tension of the spring 47 may be regulated. By providing a series of apertures 51 in the beam 43 said beam may be adjusted from or toward the gear 13.

In operation the disk to be ground is placed upon the concave face of the holding-gear 13, the threaded pin 14 extending through the aperture formed in the center of said disk. By screwing the nut 15 down upon the disk the same is held firmly in position upon the holder 13 and is prevented from rotating independently thereof. The beam 43 is then raised and the gear 13 moved inward toward the grinding-disk 34 by means of feed-screw 39. After the edge of the disk has been brought to a point below the roller 45 the beam 43 is released, and spring 47 promptly throws said roller into contact with the upper surface of the disk. Motion is then imparted to the grinding-wheel in any suitable manner, as by means of a belt arranged upon a pulley 52, and motion will be transmitted from the shaft of this grinding-wheel to the shaft of gear 16 by the train of gears arranged upon casting 23 and the chain 20. The gear 16 will revolve the holding-gear 13. By means of the feed-screw 39 the slide 3 and the gear 13, arranged thereabove, may be moved toward the grinding-disk, and the edge of disk 46 can be held into contact with said disk until sufficiently ground. It will be understood that as the slide 3 is moved toward or from the grinder 34 the distance between the shafts 22 and 17 remains unchanged and the revolution of the gears 16 and 13 continues uninterrupted.

By means of the plunger 10 and the apertured flange 8 the holding-gear 13 may be held at any angle to which it is adjusted. Therefore the disk 46 can be fed to the grinding-wheel 34 in such a way as to secure an edge thereon of any desired bevel.

In the foregoing description I have shown the preferred form of my invention, but do not limit myself thereto, as I am aware that modifications may be made therein without sacrificing any of the advantages thereof, and I therefore reserve the right to make all such changes as fairly fall within the scope of my invention.

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

1. In a machine of the character described, the combination with an adjustable gear for holding a disk, a grinding-wheel and means for imparting motion from said wheel to the

gear; of a spring-pressed roller above the gear and adapted to hold a disk thereon in contact with the wheel.

2. In a machine of the character described, the combination with a sliding plate; of a horizontal sleeve pivoted thereon, a flange on the sleeve having a series of apertures therein, a spring-pressed plunger adapted to engage any one of these apertures, a gear journaled upon the sleeve, and means for securing a disk upon the gear.

3. In a machine of the character described, the combination with a sliding plate; of a revoluble horizontal sleeve mounted thereon, a flange upon the sleeve and having a series of apertures therein, means for engaging an aperture in the flange to lock the sleeve in adjustable position, a gear journaled upon the sleeve, and means upon the gear for securing a disk thereon.

4. In a machine of the character described, the combination with a frame; of a sliding plate thereon, standards upon the plate, a horizontal sleeve journaled between the standards, a gear journaled upon the sleeve and adapted to hold a disk thereon, a spring-pressed roller adapted to bear on the disk, and means for imparting rotary motion to the gear.

5. In a machine of the character described, the combination with a frame having a shaft thereon, a grinding-wheel upon said shaft, and a pivoted train of gears driven from said shaft; of an adjustable plate upon the frame, a horizontal sleeve journaled thereon, a gear journaled upon the sleeve and adapted to hold a disk in contact with the grinding-wheel, and means for imparting motion from the train of gears to the gear on the sleeve.

6. In a machine of the character described, the combination with a frame having a shaft journaled thereon and a grinding-wheel upon said shaft; of a casting pivoted to the frame and suspended therefrom, a train of gears mounted upon and driven from the shaft, a horizontal adjustable plate upon the frame, a rotary disk-holder thereon, and means for transmitting motion from the train of gears to said holder.

7. In a machine of the character described, the combination with a frame having a shaft thereon and a grinding-wheel upon the shaft; of a horizontal adjustable plate upon the frame, a rotary disk-holder upon said plate, means for locking said holder at a desired incline, means for transmitting motion from the shaft to the holder, a spring-pressed beam mounted upon the frame, and a roller upon said beam adapted to be held in contact with a disk placed upon the holder.

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

ABIJAH T. SHIPP.

Witnesses:

E. F. LAMB,

M. W. NORTON.