

No. 701,880.

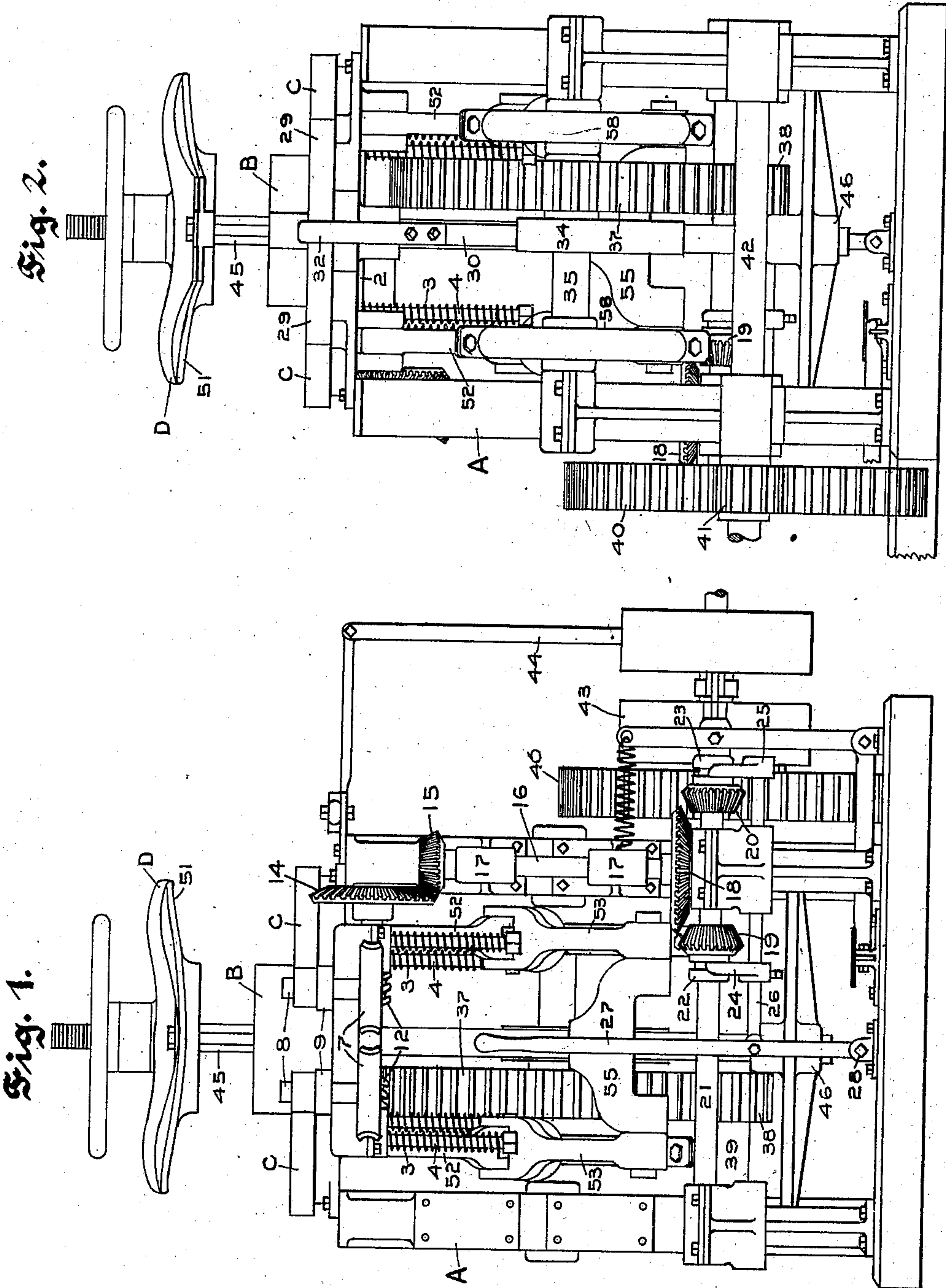
Patented June 10, 1902.

J. M. HJERMSTAD.  
HORSE COLLAR BLOCKING MACHINE.

(Application filed Dec. 2, 1901.)

(No Model.)

5 Sheets—Sheet 1.



Witnesses,  
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Emily Eastman

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by Athrop Johnson  
his Attorneys.

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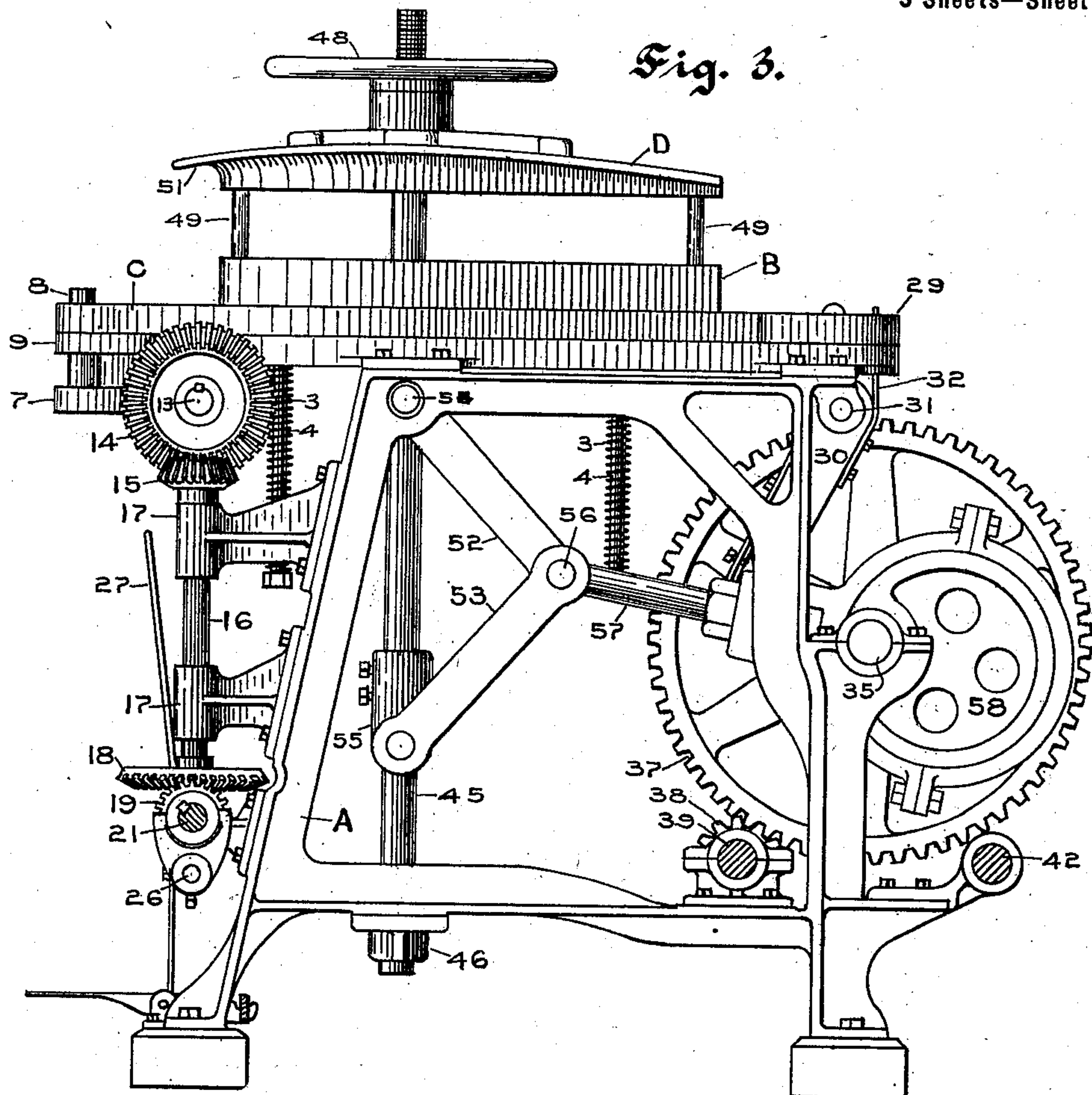
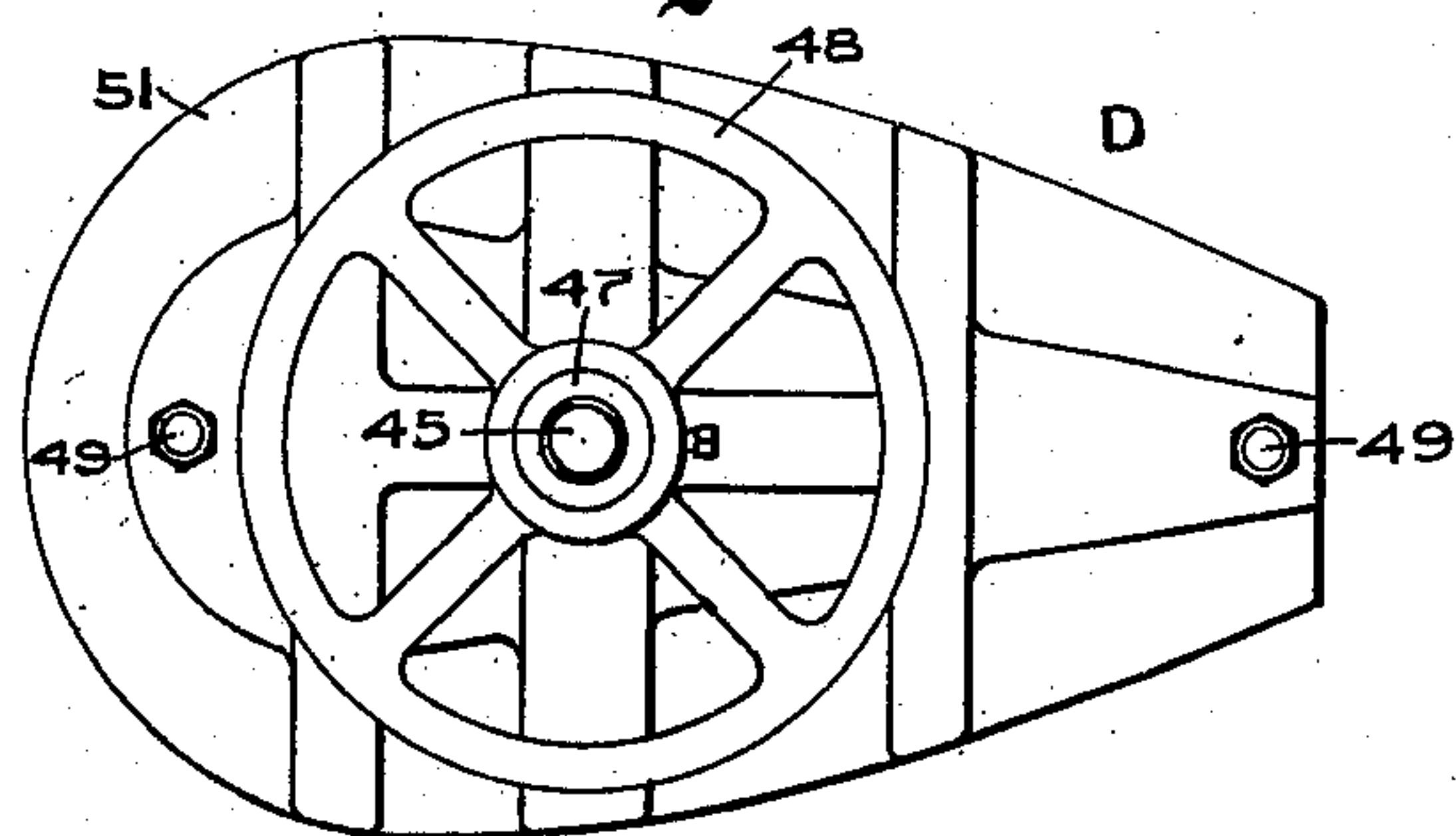


Fig. 4.



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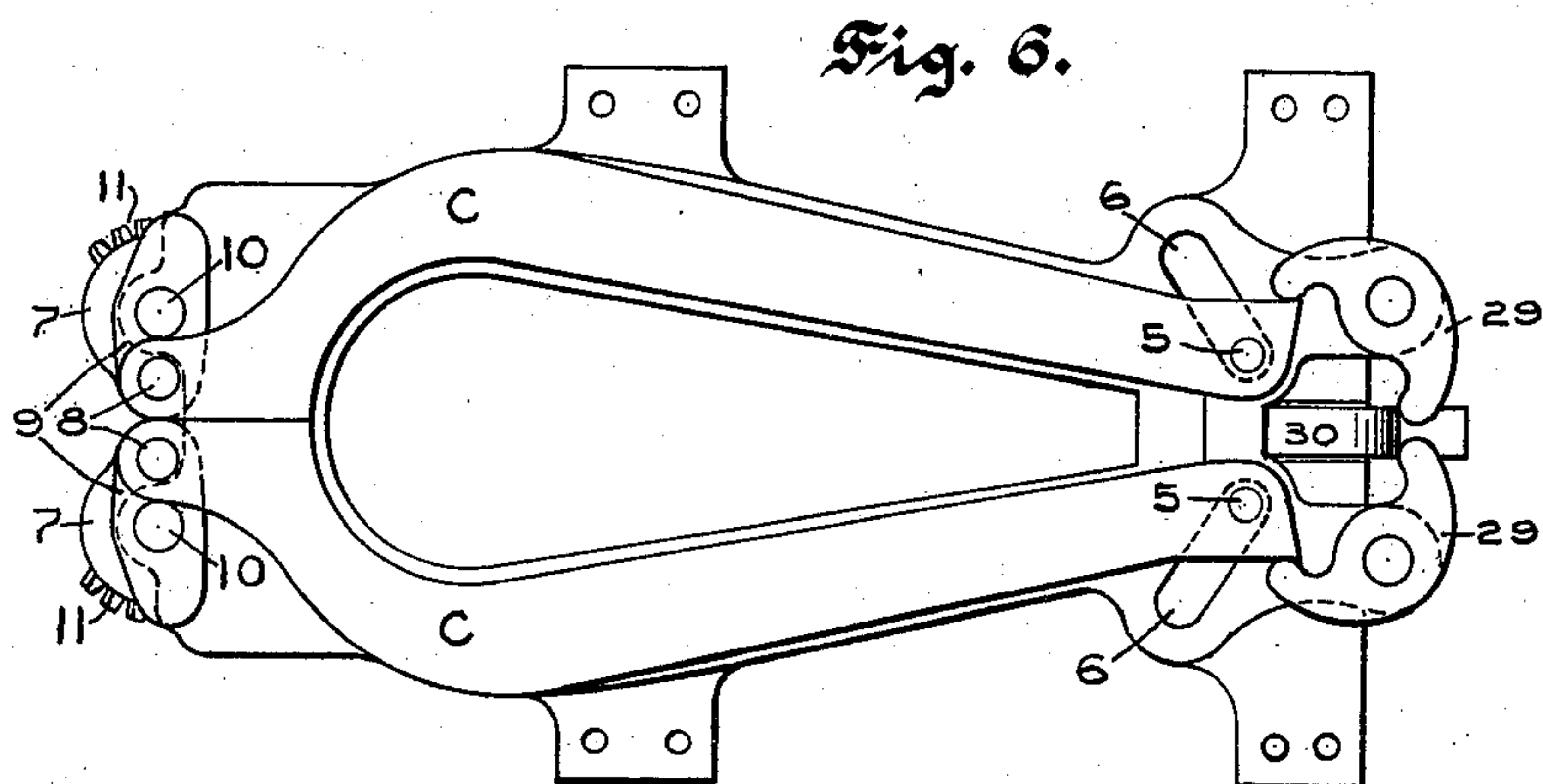
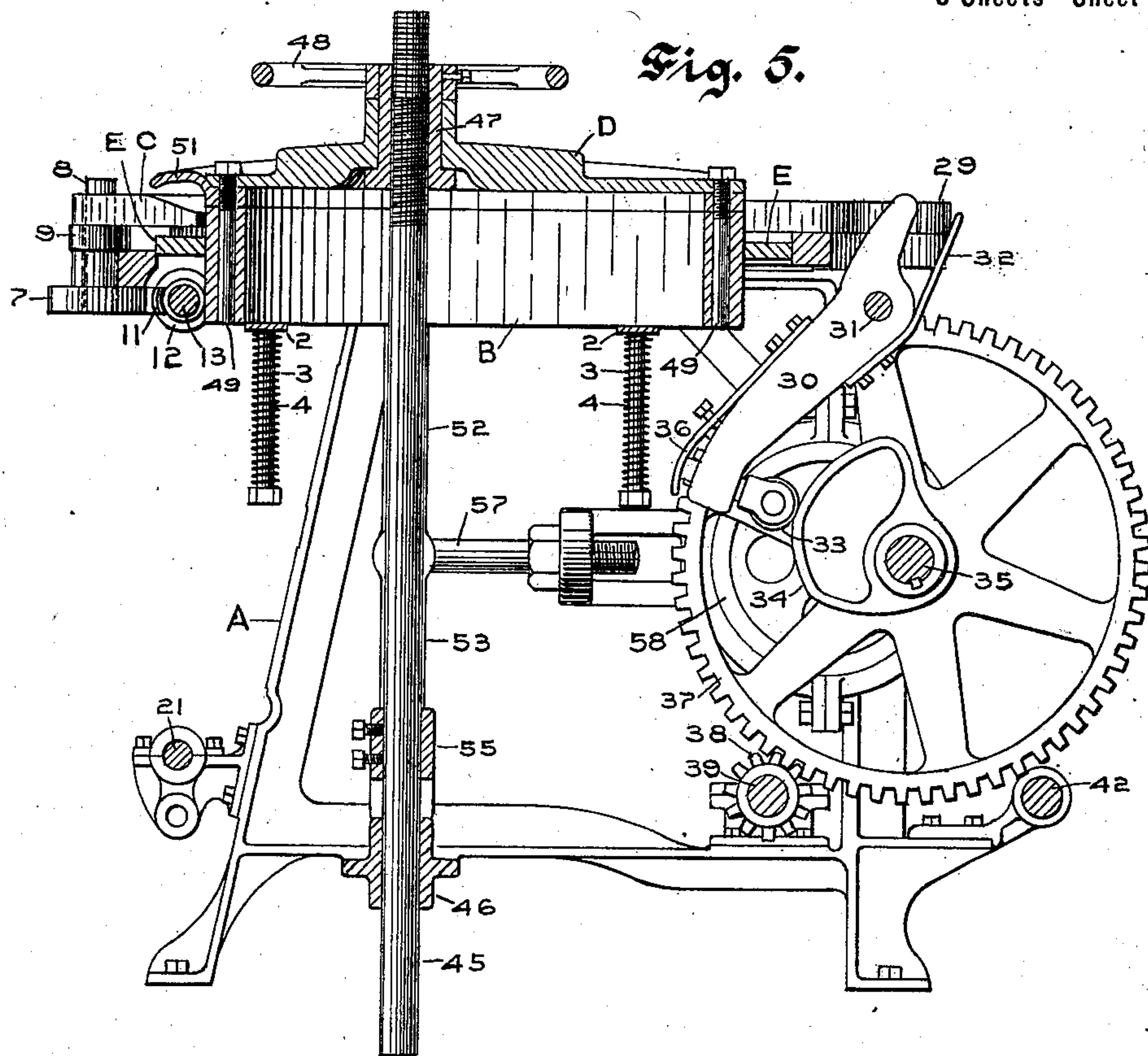
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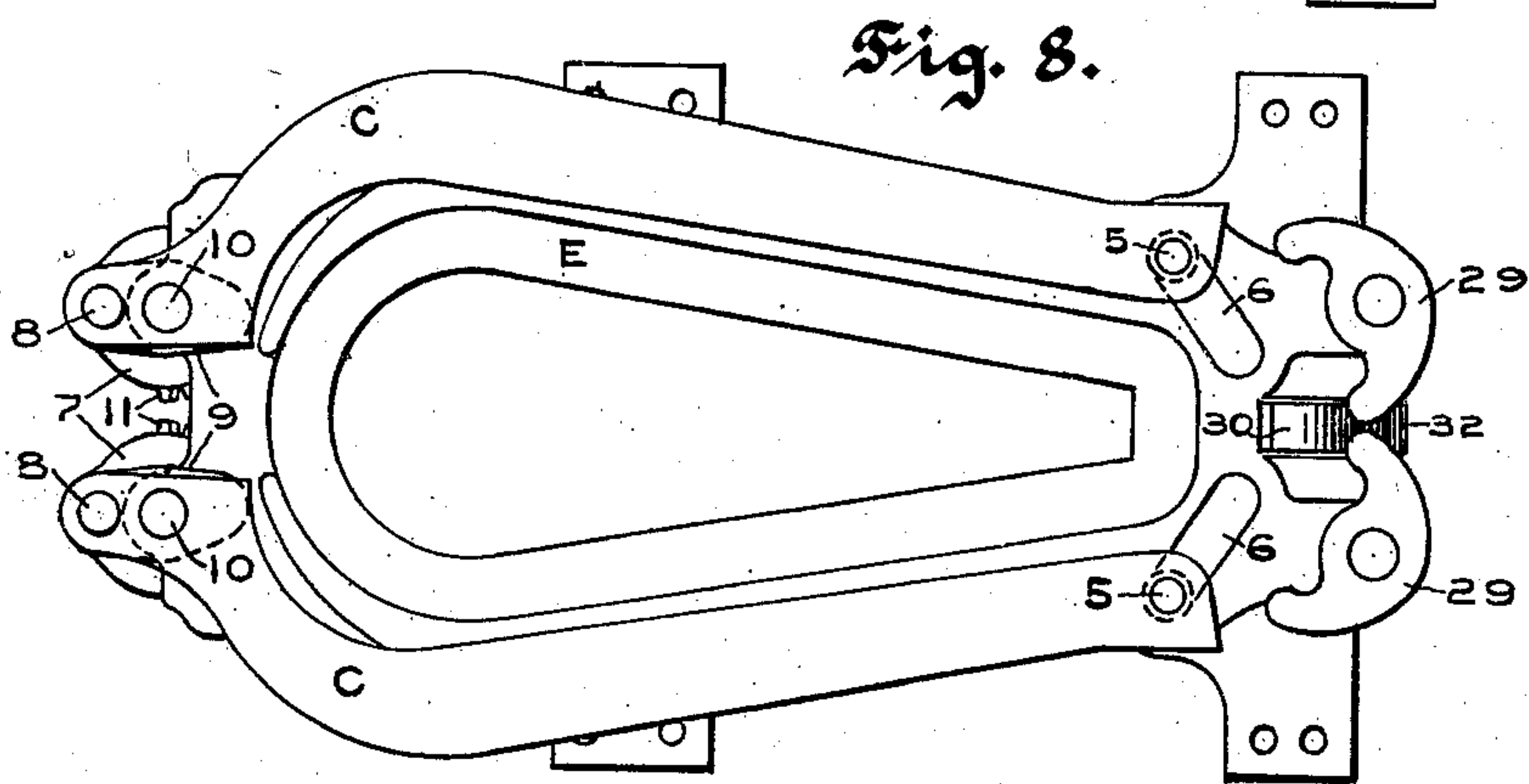
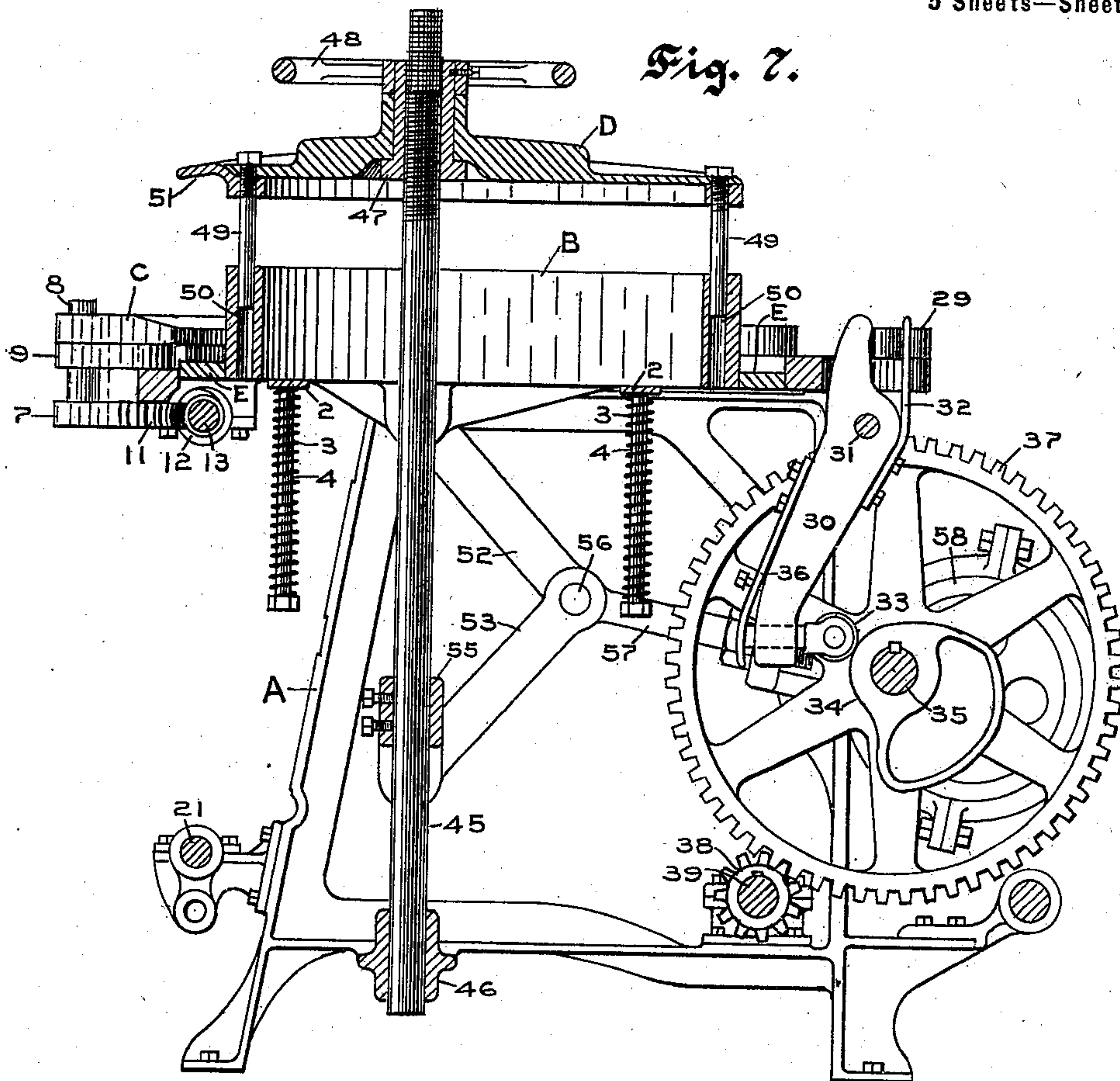
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5 Sheets—Sheet 4.



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Fig. 9.

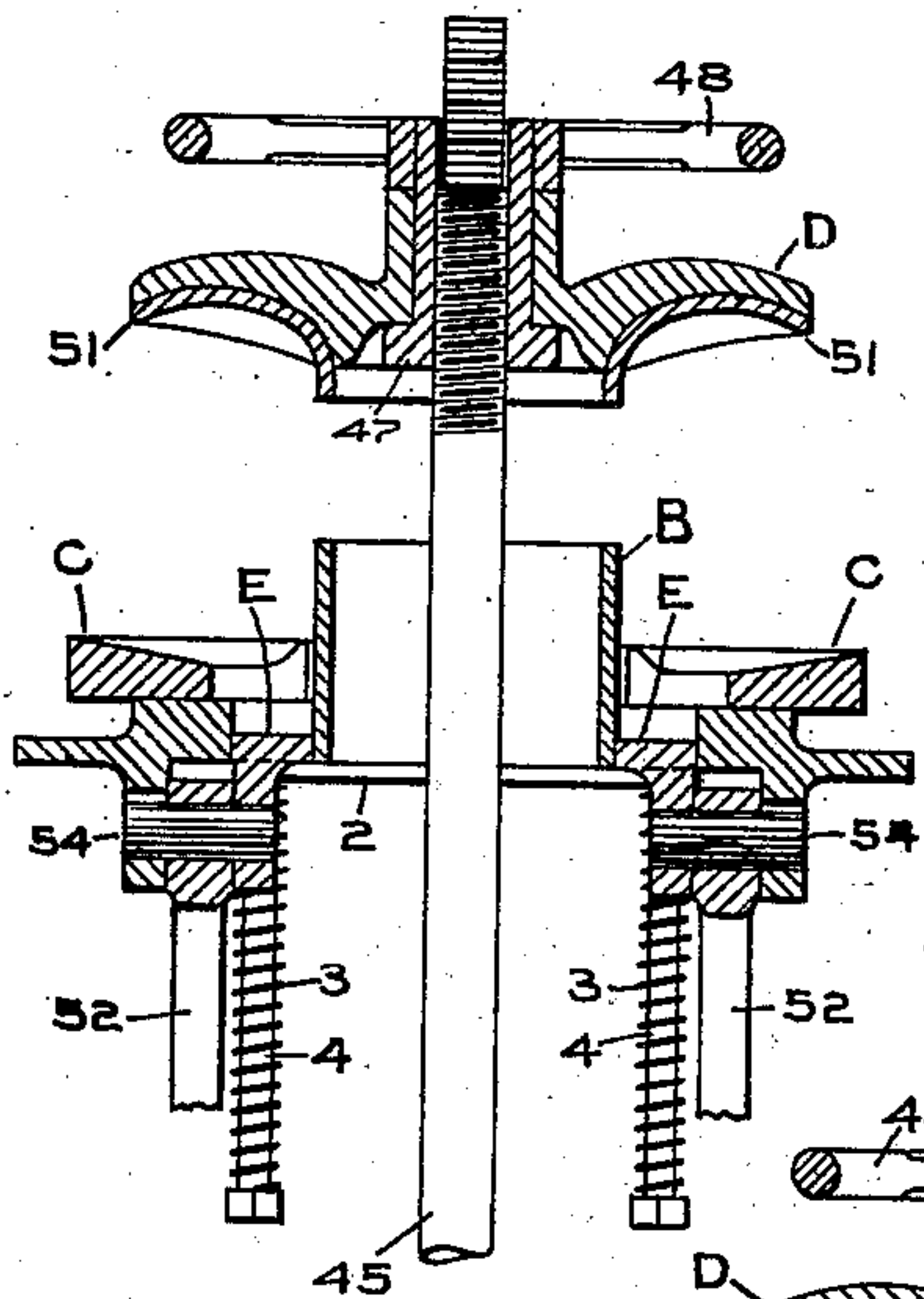


Fig. 10.

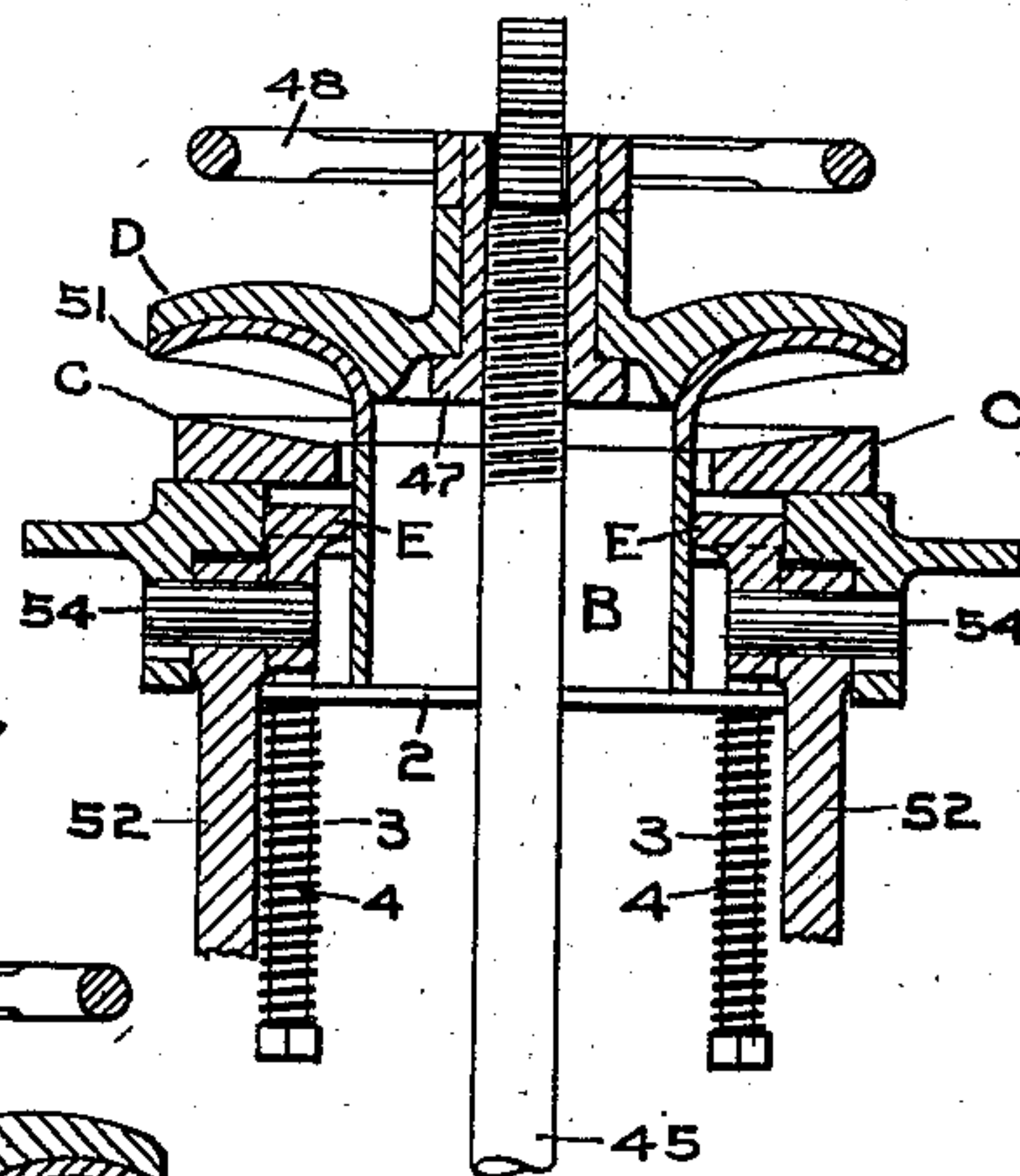


Fig. 12.

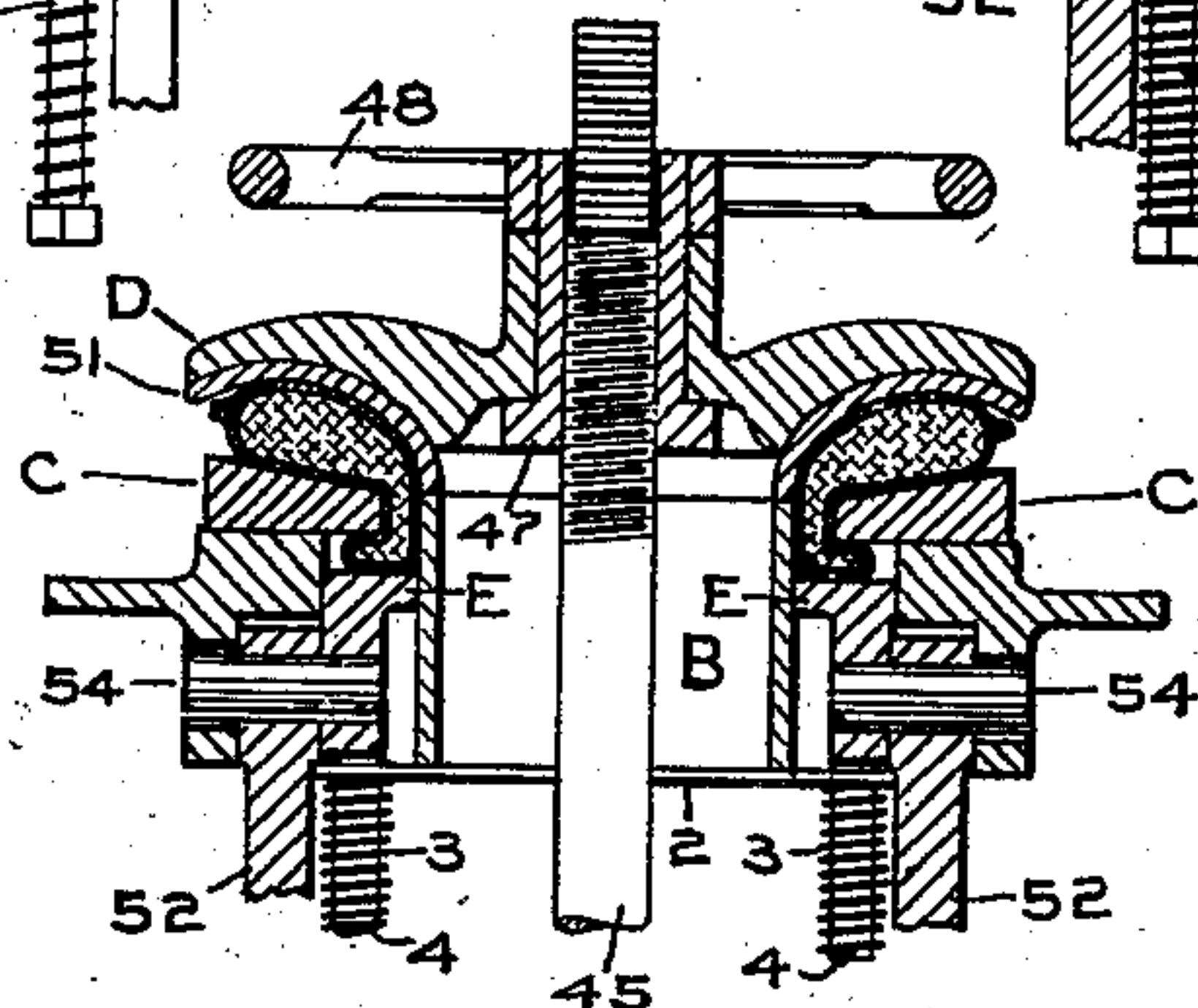
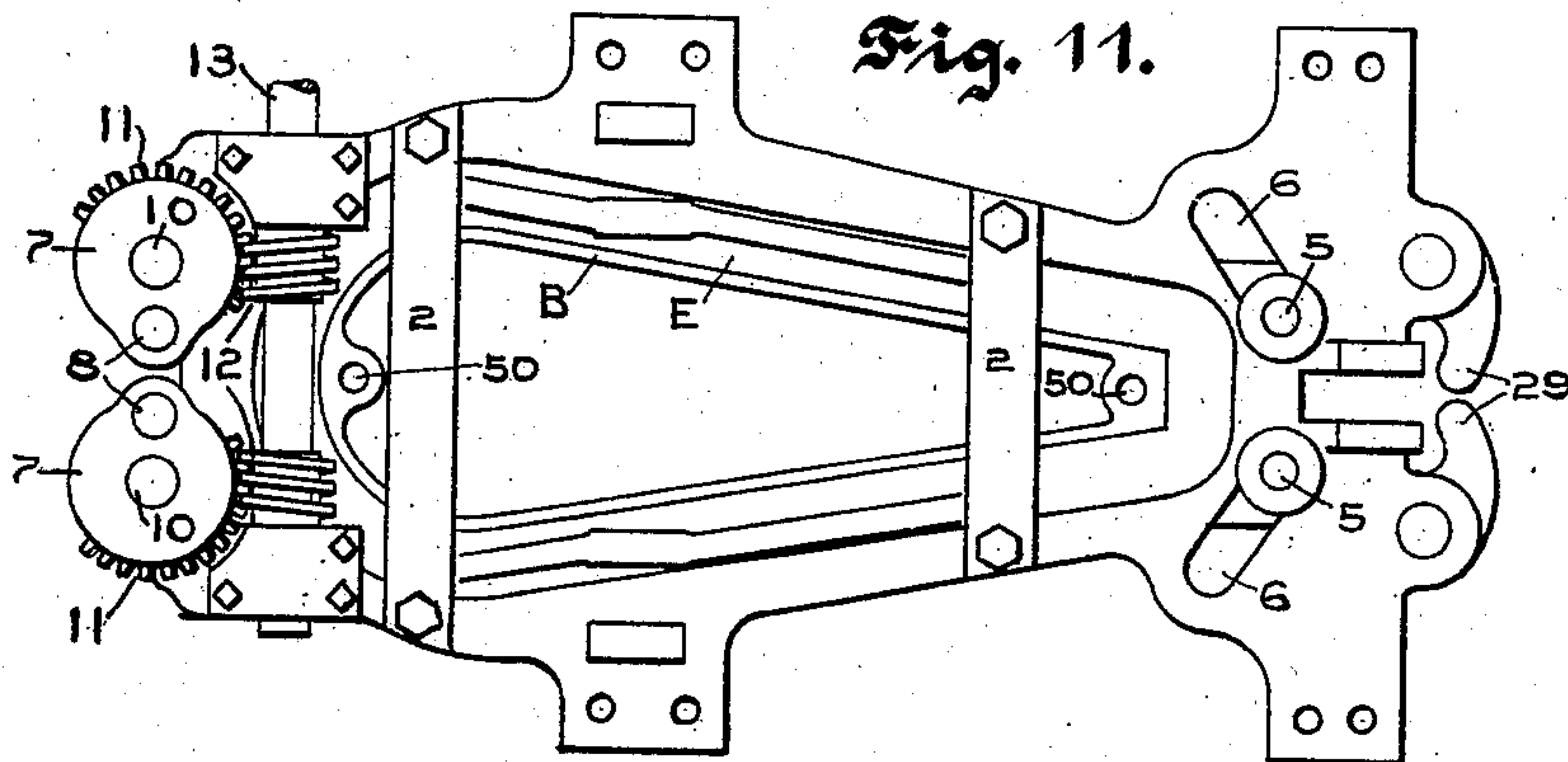


Fig. 11.



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# UNITED STATES PATENT OFFICE.

JOHN M. HJERMSTAD, OF ST. PAUL, MINNESOTA, ASSIGNOR TO FRANK B. FARGO AND ENOCH J. FARGO, OF LAKEMILLS, WISCONSIN.

## HORSE-COLLAR-BLOCKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 701,880, dated June 10, 1902.

Application filed December 2, 1901. Serial No. 84,319. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN M. HJERMSTAD, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Horse-Collar-Blocking Machines, of which the following is a specification.

My invention relates to improvements in horse-collar-blocking machines; and it consists in the features of construction and combination hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of my improved machine. Fig. 2 is a rear elevation of the same. Fig. 3 is a side elevation. Fig. 4 is a top view of the upper blocking member. Fig. 5 is a longitudinal vertical section of my improved machine with the parts in closed or blocking position. Fig. 6 is a view of the clamping-arms closed. Fig. 7 is a longitudinal section of my machine with the parts in open position. Fig. 8 is a view of the clamping-arms open. Fig. 9 is a vertical cross-section through the blocking members, clamping-arms, and adjacent parts, showing the parts in open position. Fig. 10 is a similar view with the parts closed. Fig. 11 is a bottom view of the supporting and operating mechanism of the clamping-arms, and Fig. 12 is a similar view to Fig. 10 with a collar in position.

In the drawings, A represents the framework of the machine.

B represents the lower block member, around which the collar is placed. The block member B is mounted upon the cross-arms 2, which rest upon the coil-springs 3, surrounding the posts 4, which extend downwardly from the framework of the machine. Upon the opposite sides of the member B is a pair of clamping-arms C. The rear end of each of the arms C is provided with a pin 5, passing through the outwardly and forwardly directed slot 6 in the framework. The forward end of each clamping-arm C is connected to the adjacent cam 7 by a pin 8 passing through the intermediate bracket 9. The cam 7 and bracket 9 are supported in the framework by means of the pivot 10. Each of the cams 7

is provided with teeth 11, arranged oppositely from the pin 8 and adapted to intermesh with the adjacent worm-gear 12 upon the horizontal shaft 13, which shaft has journal-support in the framework of the machine, as shown in Fig. 11. Upon the end of the shaft 13 is mounted a beveled gear 14, intermeshing with a beveled pinion 15, carried by the upright shaft 16, which upright shaft has journal-bearings 17 on the frame of the machine. Upon the lower end of the shaft 16 is mounted the beveled gear 18. Splined on the horizontal driving-shaft 21 upon the opposite sides of the beveled gear 18 are the beveled gears 19 and 20. The beveled gears 19 and 20 are provided with annularly-grooved hubs 22 and 23, respectively, and arms 24 and 25 on a slide-rod 26 ride, respectively, in the grooves in the hubs. A shifting lever-arm 27 is pivoted to the slide-rod 26. The lever-arm 27 has fulcrum-support 28 upon the bed of the machine. By actuating the lever 27 either the gear 19 or 20 will be thrown into engagement with the gear 18, thus actuating the shaft 13 to either open or close the clamping-arms C through the medium of the cams 7. When the clamping-arms are opened and carried forward, as shown in Fig. 8, by the turning of the cam 7, the rear ends will move forward and outward in the slots 6. Having pivotal support upon the framework at the rear of the clamping-arms C are the dogs 29. When the clamping-arms stand in closed position, as shown in Fig. 6, the outer ends of the dogs 29 bear against the sides of the clamping-arms.

30 represents a lever having pivotal support 31 in the rear of the framework. The upper end of the lever 30 extends upward in front of the inner ends of the dogs 29, as shown in Fig. 5, and a strip 32, connected with the lever 30, stands upon the opposite sides of the dogs. Slidably supported in the lower end of the lever 30 is the antifriction-roller 33, adapted to bear against the cam 34, carried by the shaft 35. A spring 36 is secured to the lever 30 and bears against the spindle of the antifriction-roller 33. Mounted upon the shaft 35 is a gear-wheel 37, intermeshing with a pinion 38, mounted upon



a shaft 39. Also mounted upon the shaft 39 is a gear-wheel 40, intermeshing with a pinion 41, mounted upon the shaft 42. The pulley 43, loosely mounted upon the shaft 42, is suitably connected with a source of power, and a suitable clutch mechanism 44 is provided for throwing the pulley 43 into and out of engagement with the shaft 42.

D represents the upper block member, supported upon the vertical shaft 45, slidable endwise in suitable bearings 46. The member D is provided with a rotatable hub 47, held to coincident vertical movement with said member and threaded upon the upper end of the shaft 45, an adjusting-wheel 48 being provided, by means of which the height of the block member is adjusted. Posts 49 project downwardly from the outer edge of the block member and extend movably into the openings 50 in the lower member B, retaining the block member in alinement vertically. The outwardly-projecting flange 51 of the upper block member is shaped to fit over the belly of the collar, as hereinafter set forth. The upper block member is actuated by the toggle-arms 52 and 53. The upper ends of the arms 52 are pivoted on stud-pins 54, fixed in die E and which pass through arms 52 and extend into vertical slots therefor in the framework of the machine, and the lower ends of the arms 53 are pivotally connected with the yoke 55, adjustable on the shaft 45. The pins 56, pivoting together the toggle-arms 52 and 53, are connected by the eccentric-rods 57 with the straps of the eccentrics 58, the eccentrics being mounted upon the shaft 35.

Between the block member B and the surrounding framework of the machine is arranged the die E, supported upon the pins 54, as shown in Figs. 9 and 10.

In operation the parts are caused to assume the open position shown in Figs. 7 and 9. The collar is then placed around the lower block B, with the rim resting upon the die E. By actuating the lever 27 the clamping-arms are then closed through the medium of its operating mechanism hereinbefore described. As the clamping-arms are closed they are pressed closely into the hame-groove. The clutch mechanism 44 then being actuated, the operating mechanism for the toggle-arms 52 and 53 will be thrown into action. The movement of the toggle-arms will first raise the die E, pressing the rim of the collar between the die and the clamping-arms C. The upward movement of the die will be limited by the movement of the pins 54 in the openings in the framework of the machine. The continued movement of the toggle-arms will lower the upper block member D into the position shown in Fig. 10, thus pressing and shaping the belly of the collar between the flange of the upper block member and the clamping-arms C. The parts are intended to be left in the position shown

in Fig. 12 until the collar is set. By adjusting the height of the upper block member upon the shaft 45 the amount of pressure applied to the collar may be varied.

By referring to Figs. 1, 2, and 3 it will be seen that one of the advantages of my construction is the ability of coupling a number of frames, the side of one frame constituting one side of the next. Among the further advantages of my construction are the independent pressing of the rim and belly against the interposed clamping-arms and the adjustability of the block members. Another advantage is the compensating for different sizes of collars, caused by the yielding of the spring 36 to allow separation of the clamping-arms.

I claim—

1. In a machine for shaping horse-collars, means for holding a collar, blocking means arranged above and below said holding means, and means for actuating said blocking means to carry the same against the belly and rim of an interposed collar.

2. In a machine for shaping horse-collars, means for holding a collar, blocking devices arranged respectively above and below said holding means said devices being adapted by independent movement to apply pressure to the interposed collar, and means for actuating said devices.

3. In a machine for shaping horse-collars, clamping-arms for holding a collar, blocking means arranged above and below said arms, and means for actuating said blocking means to apply pressure to an interposed collar.

4. In a machine for shaping horse-collars, clamping-arms for holding a collar, blocking means arranged above and below said arms, and means for independently actuating said blocking means.

5. In a machine for shaping previously-stuffed horse-collars, means for holding a collar, a block supported above said holding means, a die having spring-support below the same, and means for actuating said block and die.

6. In a machine for shaping previously-stuffed horse-collars, the combination with framework, of lower and upper block members, clamping-arms arranged upon opposite sides of said lower member, a die supported below said arms, and means for actuating said upper block member and said die for the purpose set forth.

7. In a machine for shaping previously-stuffed horse-collars, the combination with the framework, of lower and upper block members, clamping-arms arranged upon opposite sides of said lower member, a die supported below said arms, and means for actuating said block members and said die, for the purpose set forth.

8. In a machine for shaping previously-stuffed horse-collars, the combination with the framework, of lower and upper block



members, clamping-arms arranged upon opposite sides of said lower member, means for actuating said arms, a die supported below said arms, and means for actuating said block members and said die, for the purpose set forth.

9. In a machine for shaping previously-stuffed horse-collars, the combination with framework, of lower and upper block members, clamping-arms arranged upon opposite sides of said lower block member, means for carrying said arms toward and from said member, a die arranged below said arms, and means for actuating said block members and said die for the purpose set forth.

10. In a machine for shaping previously-stuffed horse-collars, the combination with framework, of lower and upper block members, clamping-arms arranged upon opposite sides of said lower block member, means for carrying said arms toward and from said member, and means for raising and lowering said block members, for the purpose set forth.

11. In a machine for shaping previously-stuffed horse-collars, the combination with framework, of lower and upper block members, clamping-arms supported upon opposite sides of said lower member, means for carrying said arms toward and from said member, a die supported below said arms, and means for raising and lowering said block members and said die, for the purpose set forth.

12. In a machine for shaping previously-stuffed horse-collars, the combination with framework, of lower and upper block members, clamping-arms supported upon opposite sides of said lower block member, means for carrying said arms toward and from said member, a die arranged below said arms, a spring-support for said die, and means for raising and lowering said block members and said die, for the purpose set forth.

13. In a machine for shaping previously-stuffed horse-collars, the combination with framework, of lower and upper block members, clamping-arms supported upon opposite sides of said lower member, means for carrying said arms toward and from said member, means for holding said arms in adjusted position, a die arranged below said arms, and means for actuating said block members and said die, for the purpose set forth.

14. In a machine for shaping previously-stuffed horse-collars, the combination with the framework, of upper and lower block

members, pivotally-supported clamping-arms arranged upon opposite sides of said lower member, means for actuating said arms, a supporting-shaft for said block members, a toggle-joint connection between said shaft and the framework, and driving mechanism connecting said toggle-joint with a source of power.

15. In a machine for shaping previously-stuffed horse-collars, the combination with the framework, of upper and lower block members, a spring-support for said lower member, a vertical shaft supporting said upper member, actuating means for said shaft, clamping-arms arranged upon opposite sides of said lower member, and means for actuating said arms.

16. In a machine for shaping previously-stuffed horse-collars, the combination with framework, of lower and upper block members, a spring-support for said lower member, a vertical shaft supporting said upper member, actuating means for said shaft, clamping-arms arranged upon opposite sides of said lower member, means for actuating said arms, and means for holding said arms in adjusted position.

17. In a machine for shaping previously-stuffed horse-collars, the combination with framework, of lower and upper block members, a spring-support for said lower member, a vertical shaft supporting said upper member, means for adjusting said member upon said shaft, means for actuating said shaft, clamping-arms arranged upon opposite sides of said lower member, and means for actuating said arms.

18. In a machine for shaping previously-stuffed horse-collars, the combination with framework, of lower and upper block members, a spring-support for said lower member, a vertical shaft supporting said upper member, means for adjusting said member upon said shaft, means for actuating said shaft, clamping-arms arranged upon opposite sides of said lower member, means for carrying said arms toward and from said lower block member, and means for holding said arms in adjusted positions.

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

JOHN M. HJERMSTAD.

Witnesses:

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