

March 27, 1928.

1,663,759

J. C. HAM

PAVEMENT GRINDER

Filed Dec. 29, 1924

2 Sheets-Sheet 1

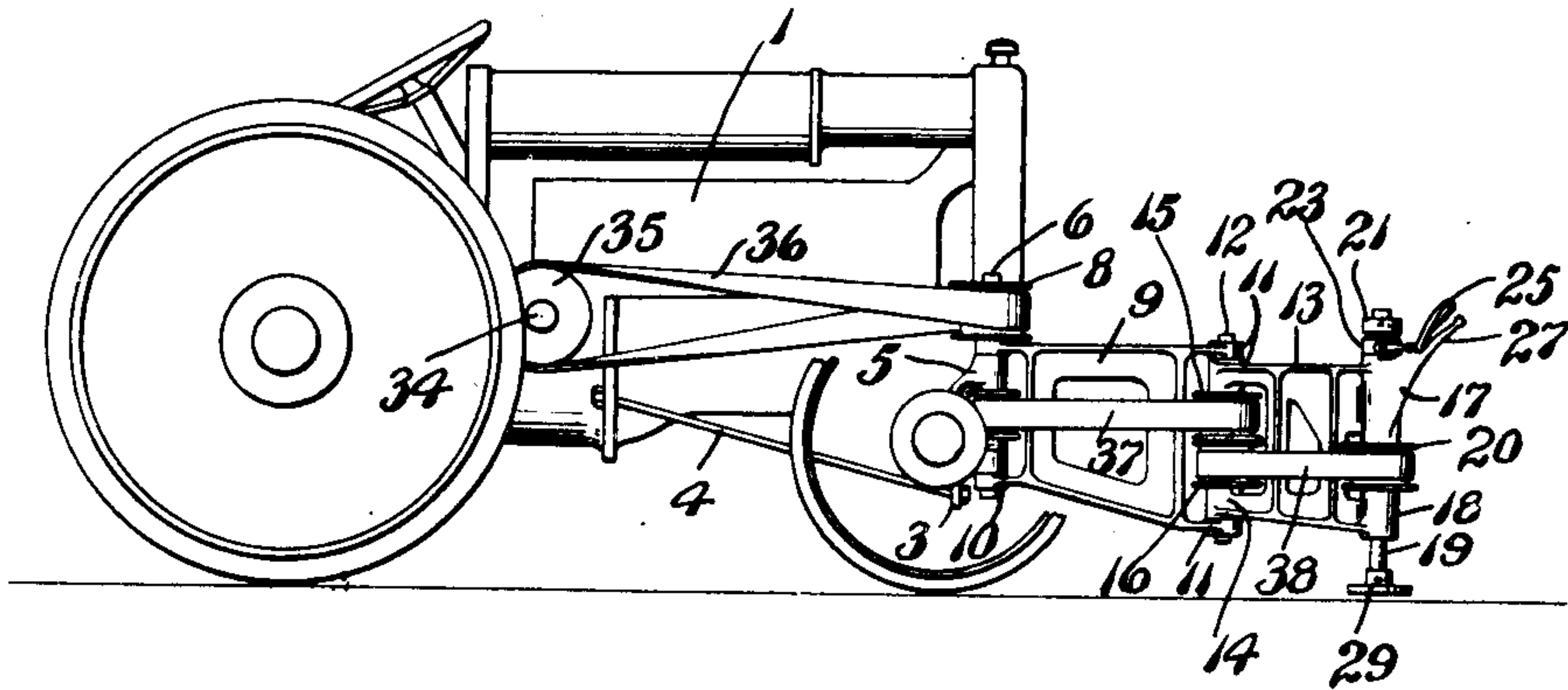


Fig. 1.

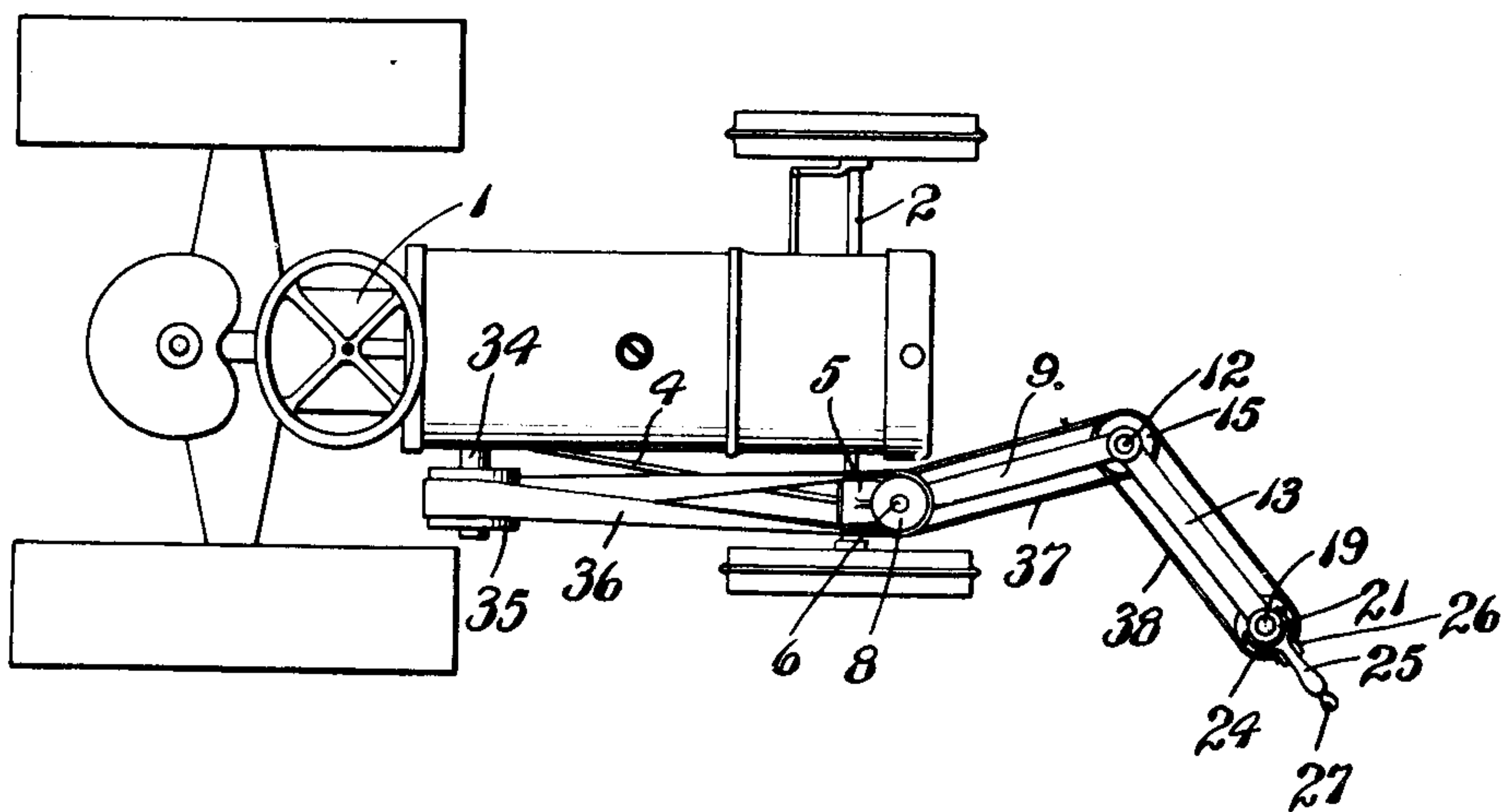


Fig. 2.

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2 Sheets-Sheet 2

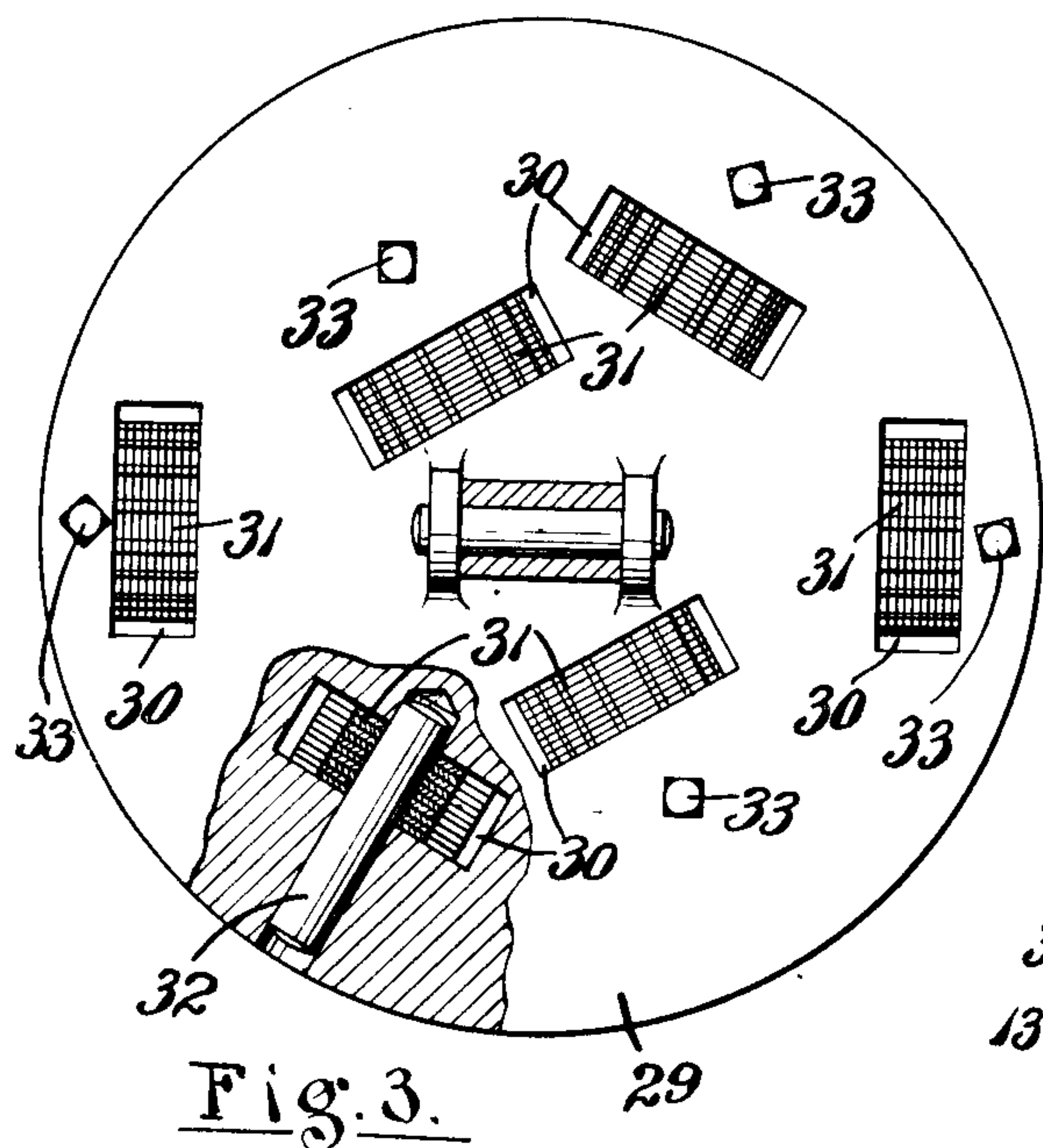


Fig. 3.

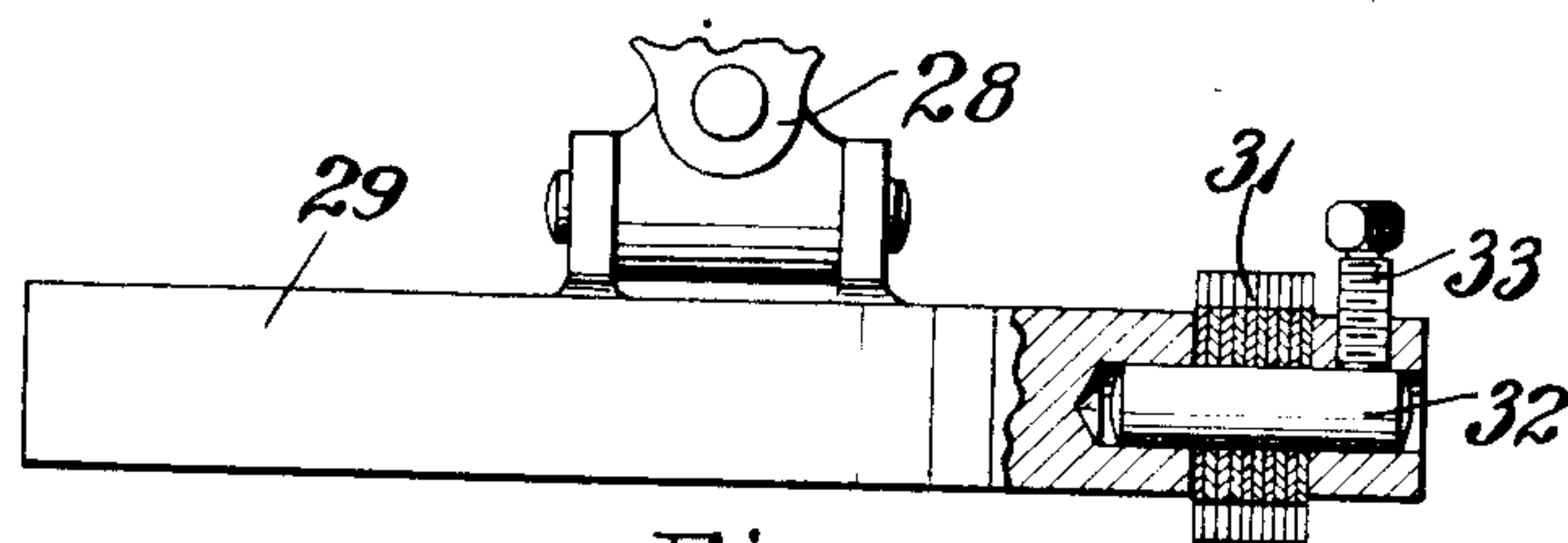


Fig. 4.

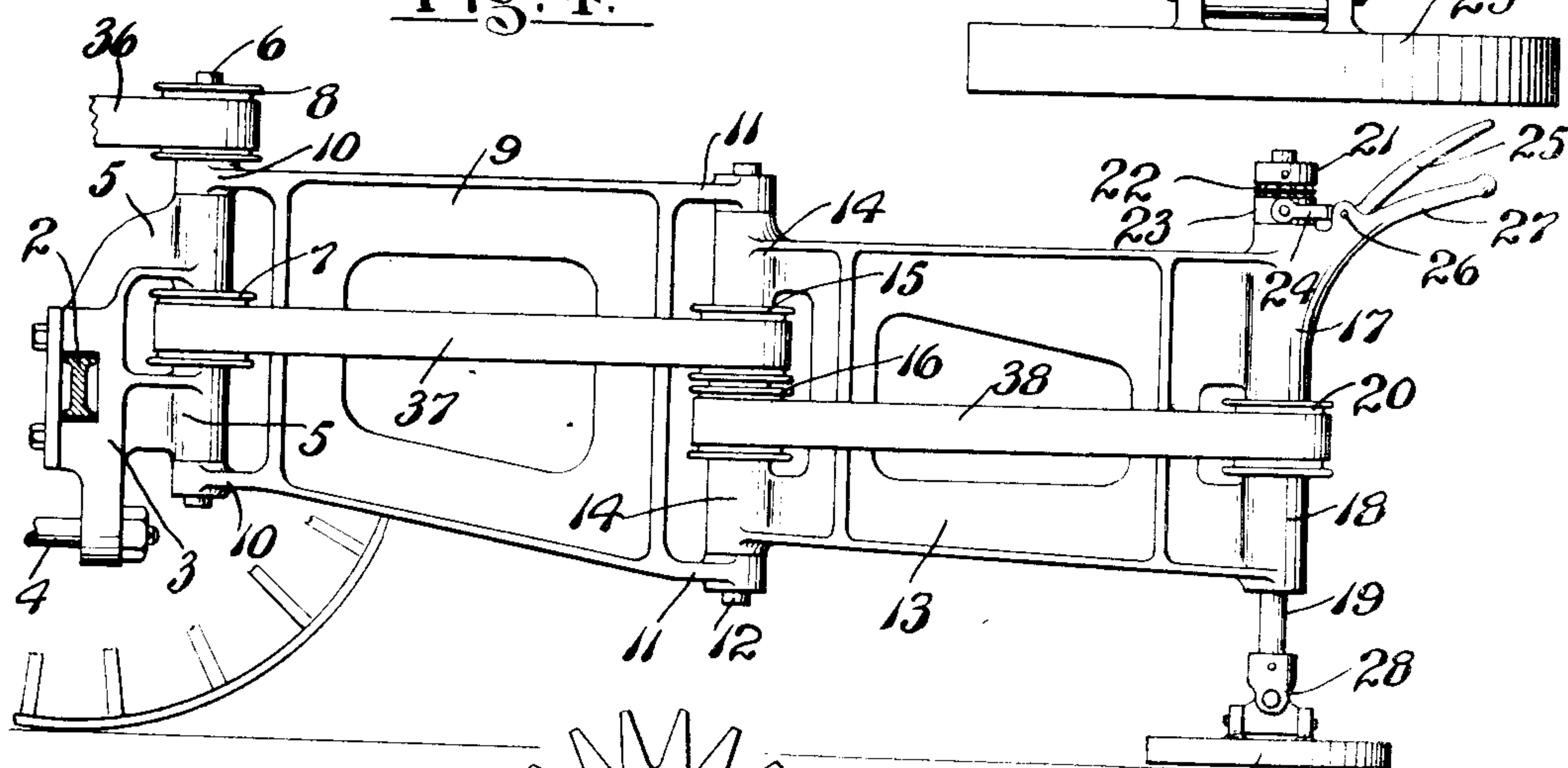


Fig. 6.

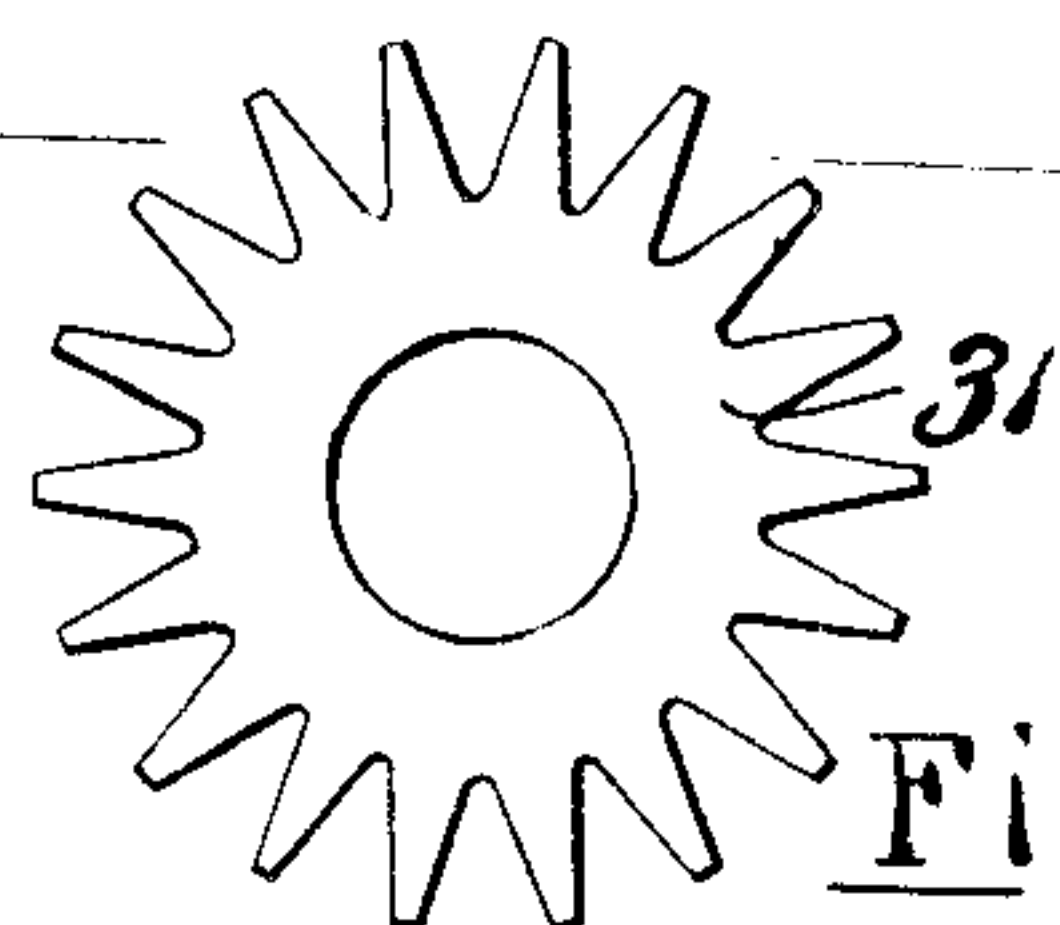


Fig. 7.

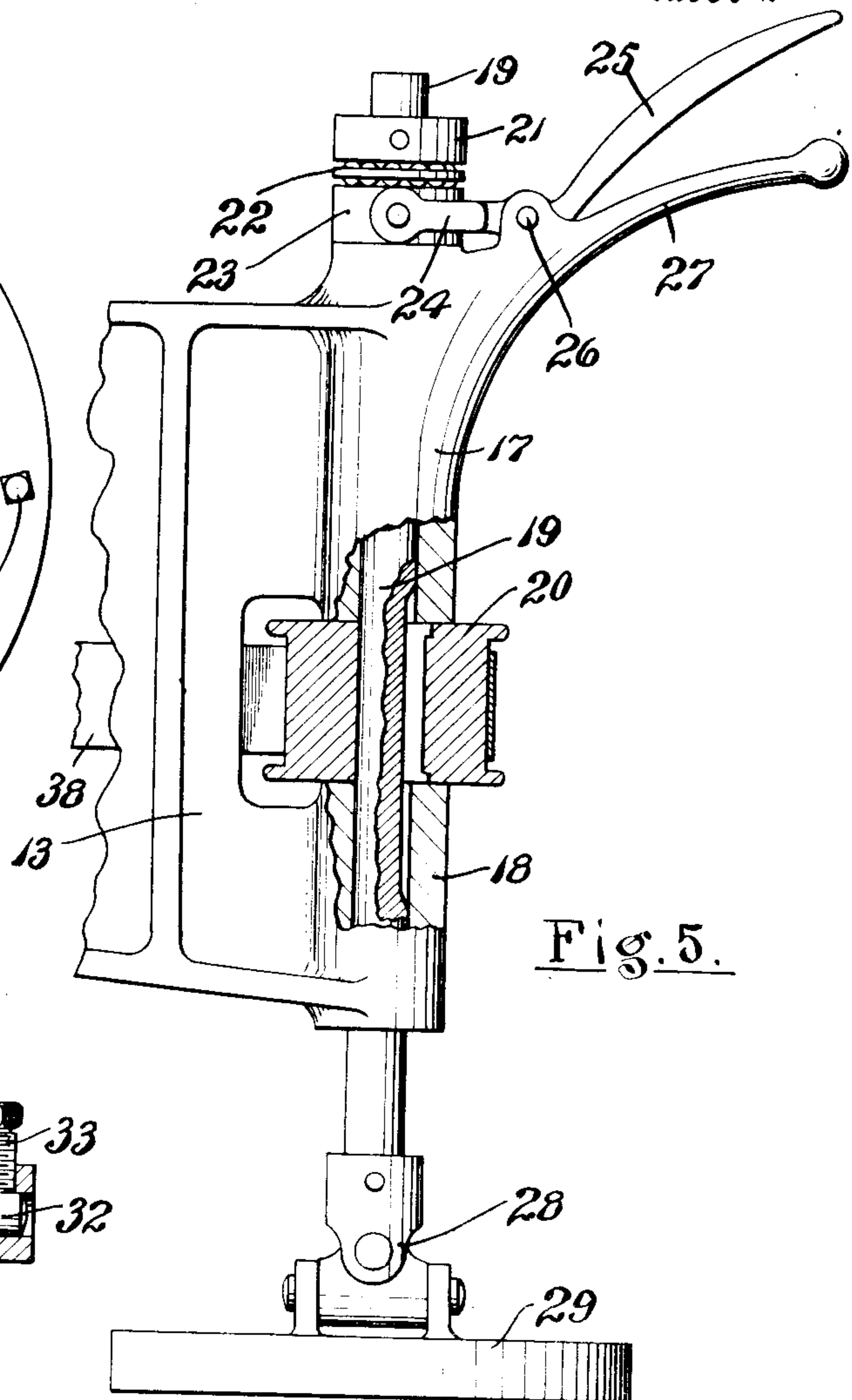


Fig. 5.

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PAVEMENT GRINDER.

Application filed December 29, 1924. Serial No. 758,751.

This invention relates to a road grinding or dressing device particularly designed and adapted for use in removing any roughness or projections which at spots extend upwardly from concrete roads or pavements. In the laying of concrete roads or pavements the finished pavement, after it has been laid and struck as smooth as possible, many times has rough spots left or upwardly projecting knobs, which in order to make the road smooth as it should be, need to be removed. It is the primary object and purpose of my invention to provide a simple, practical and easily operated attachment which can be applied to and driven by a Fordson tractor and by means of which the rough spots on the surface of a road or pavement may be quickly and rapidly smoothed to the desired condition.

For an understanding of the invention and structures which I have designed to embody the same, reference may be had to the following description taken in connection with the accompanying drawings in which,

Fig. 1 is a side elevation showing my pavement or road grinder attached to and operated by a Fordson tractor.

Fig. 2 is a plan view thereof.

Fig. 3 is a plan view with parts broken away and in section of the immediate finishing or grinding disk.

Fig. 4 is a side elevation thereof, partly in section.

Fig. 5 is an enlarged fragmentary side elevation of the front end of the attachment with parts broken away and in section to show the interior construction.

Fig. 6 is a fragmentary enlarged side elevation of the road finishing or grinding attachment, and

Fig. 7 is an elevation of one of the dressing star wheels, a plurality of which are used at a number of different points on the grinding or dressing disk.

Like reference characters refer to like parts in the different figures of the drawings.

The tractor 1 is of the well-known and usual Fordson construction. It has a front axle 2 on which, near one of the wheels mounted thereon, a bracket 3 is permanently secured, the same being re-inforced and strengthened against turning by brace rods 4 extending therefrom rearwardly to a relatively fixed part of the tractor. The bracket has upper and lower spaced apart forwardly

projecting arms 5 each terminating in a vertical sleeve through which a shaft 6 passes, the same also passing through and being keyed to a pulley 7, which is located between said sleeves on the upper and lower arms 5. At the upper end of the shaft 6 a second pulley 8 is mounted, as best shown in Fig. 6.

A relatively wide arm 9 of metal at its rear end is formed with spaced apart upper and lower rearwardly extending portions 10, each terminating in a collar through which the shaft 6 passes so that this arm 9 is mounted for pivotal movement on and about the vertical axis of the shaft 6. At its front end arm 9 is formed with upper and lower spaced apart forwardly projecting portions 11, similar to the parts 10, which likewise terminate in collars and through which a vertical shaft 12 passes, the shaft being secured against rotation in one or both of said collars.

A second arm 13 is located in front of and extends from the arm 9, at its rear end being formed with spaced apart upper and lower sleeves 14, the lower one of which lies above the lower part 11 and the upper, below the upper part 11, as shown in Fig. 6. The shaft 12 passes through said sleeve 14. The pulleys 15 and 16, the one above the other, are rotatably mounted on the shaft 12, the upper pulley 15 being in horizontal alignment with the pulley 7 before described.

At its front end arm 13 is formed with an upper sleeve 17 and a lower sleeve 18 spaced a distance apart, a shaft 19 passing freely through said sleeves and also through a pulley 20 placed between the sleeves and which is splined on shaft 17 so that the shaft may be given a limited up and down movement. A collar 21 is pinned to the upper end of shaft 19 and bears upon a ball bearing 22, which in turn rests upon a second collar 23 loose on the shaft 19 and normally bearing against the upper end of the sleeve 17. A yoke 24 is connected with the collar 23, being formed at the rear end of a hand lever 25 which is pivotally mounted at 26 between its ends on a forwardly and upwardly curved arm 27 integral with the sleeve 17. It is apparent that by moving the handle portion 25 toward the arm 27, shaft 19 and any mechanism attached thereto may be elevated a limited distance and the arm 27 and lever 25 are conveniently located that this operation may be manually per-

formed at any time desired; and by holding the lever 25 against the arm 27 the shaft 19 will be held in elevated position.

At the lower end of the shaft 19 a universal joint coupling 28 is secured on which a disk 29 is mounted at its lower end, said disk normally being positioned horizontal. This disk is formed with a plurality of rectangular openings 30 cut therethrough, the lengths of which are disposed perpendicular to radii of the disk. Within each of the openings a number of star wheels 31 are mounted side by side being rotatable on pins 32 mounted transversely of the openings 30 and releasably held in position by set screws 33. It is apparent that on loosening any set screw a pin may be moved outwardly so as to dismount the star wheels thereon, this being desirable for replacement of the star wheels when they become worn and useless. The star wheels shown are a well-known form of dressing member used for dressing the faces or peripheries of emery, carborundum or other grinding wheels.

A shaft 34 connected with and driven by the engine of the tractor extends laterally from one side of said tractor and is provided with a drive pulley 35, shown in Figs. 1 and 2, which serves to drive a twisted belt 36 which passes around the pulley 8 before described. A second belt 37 passes around pulleys 7 and 15 and a third belt 38 around the pulleys 16 and 20. These belt connections between the tractor engine and the shaft 19 serve to drive said shaft 19 and the disk 29 connected therewith at a high rate of speed. The star wheel dressing members or cutters 31, lowered to the upper surface of the road or pavement, act on any roughened or projecting portions thereof, quickly dressing and cutting the same down smoothly to the level of the pavement. When the star wheels become worn to such an extent that they are no longer serviceable they may be removed and replaced by new ones. When a spot has been smoothed or dressed down as much as required, shaft 19 with the attached disk 29 is elevated by operating the lever 25 and the tractor may be moved to a new position.

It is evident that the pivotal mounting of

arm 19 on shaft 6 and the pivotal mounting of arm 13 on shaft 12 gives the disk 29 a considerable range of movement so that the position of the tractor does not need to be continuously changed even though the rough spots to be dressed may be of considerable area. This grinder or dressing attachment has proved very serviceable in actual practice and has been used for the purposes stated. The invention is defined in the appended claims and is to be considered as comprehensive of all forms of structure coming within their scope.

I claim:

1. In combination, a support adapted to be attached to and extend in front of the front axle of a tractor or the like, a vertical shaft rotatably mounted at the front end of the support, a disk located below the lower end of the shaft, a universal joint connection between the shaft and disk, said disk having a plurality of relatively wide slots cut therein, the lengths of which are perpendicular to radii of the disk, and a plurality of star wheel dressing elements located side by side and rotatably mounted in each slot, substantially as described.

2. In a device of the class described, the combination with a rotatable shaft of a disk fixed at its axis to said shaft and having a plurality of relatively wide slots cut therethrough, a plurality of shafts each extending from the periphery of said disk and passing through each respective slot, and a plurality of star wheel dressing elements located in each slot and rotatably mounted on each respective shaft therein.

3. In a device of the class described, the combination with a rotatable shaft of a disk fixed at its axis to said shaft and having a plurality of relatively wide slots cut therethrough, a plurality of shafts each extending from the periphery of the disk through each respective slot therein and removably secured to the disk, and a plurality of star wheel dressing elements located in each slot and rotatably mounted on each respective shaft therein.

In testimony whereof I affix my signature.

JACOB C. HAM.