

(No Model.)

2 Sheets—Sheet 1.

W. L. BEALL.  
PLANTER.

No. 597,485.

Patented Jan. 18, 1898.

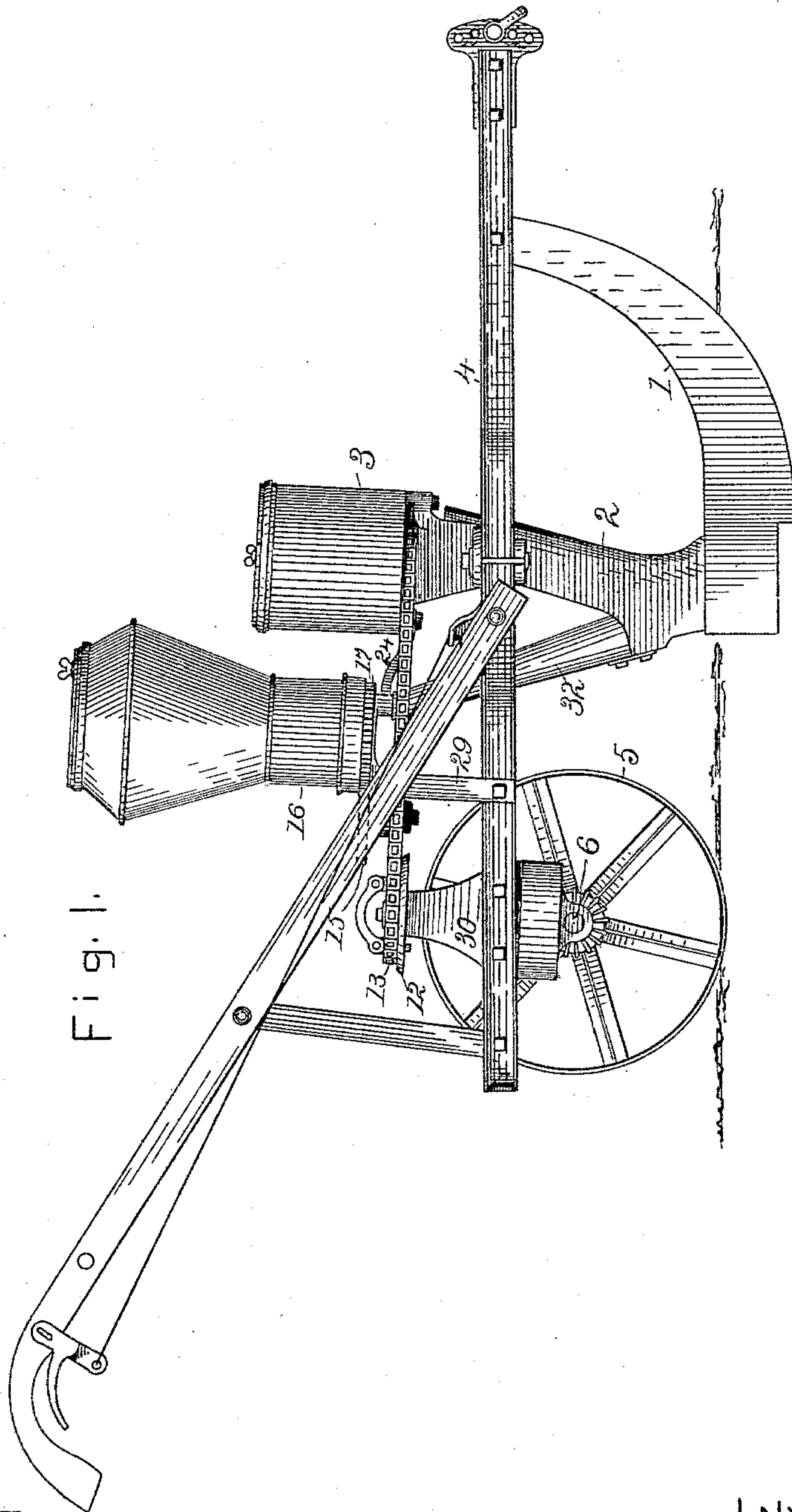


Fig. 1.

ATTEST

*Anna C. Graham.*

*Nora Graham.*

INVENTOR

*Wm. L. Beall.*

by *L. P. Graham*  
his attorney

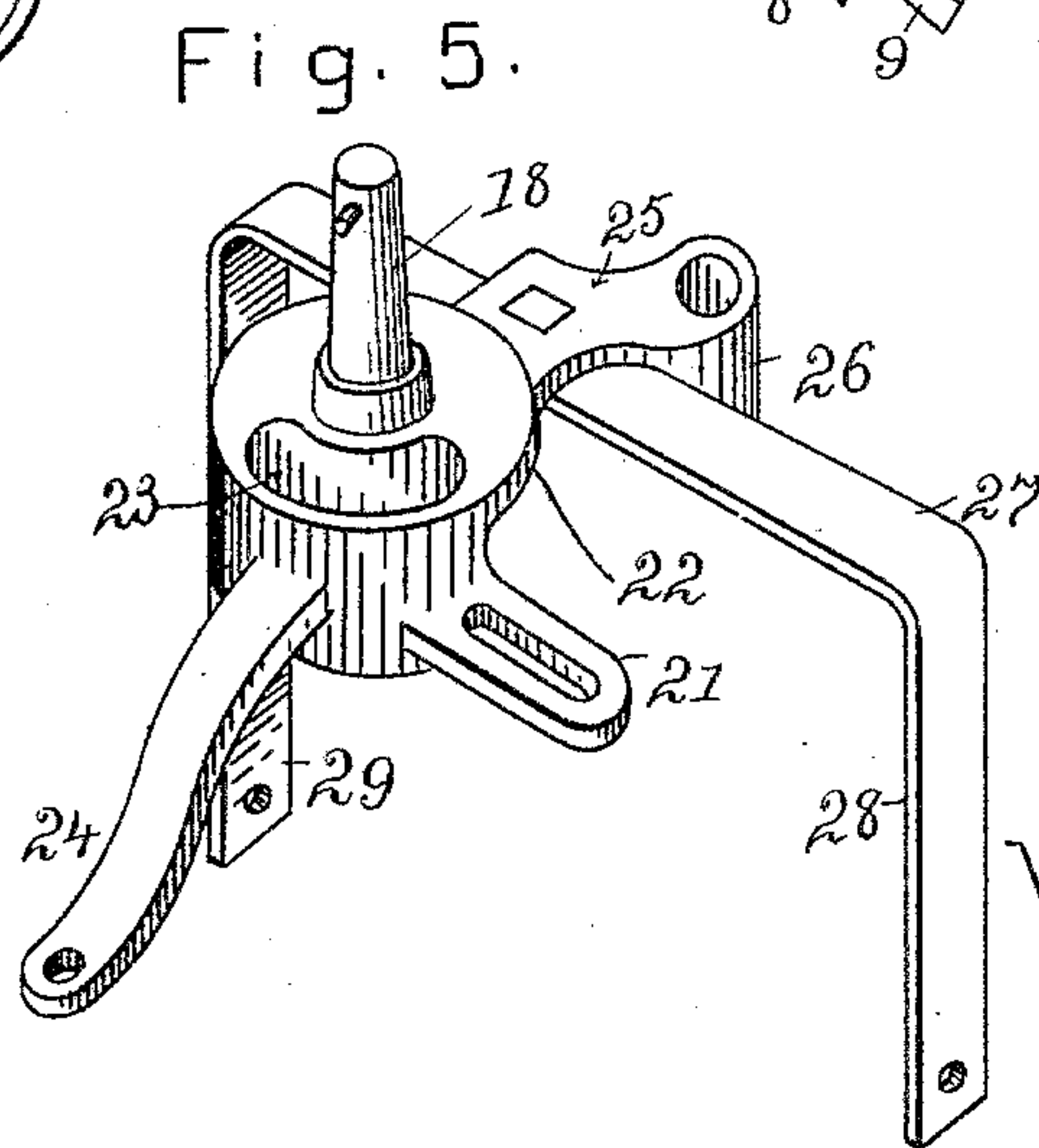
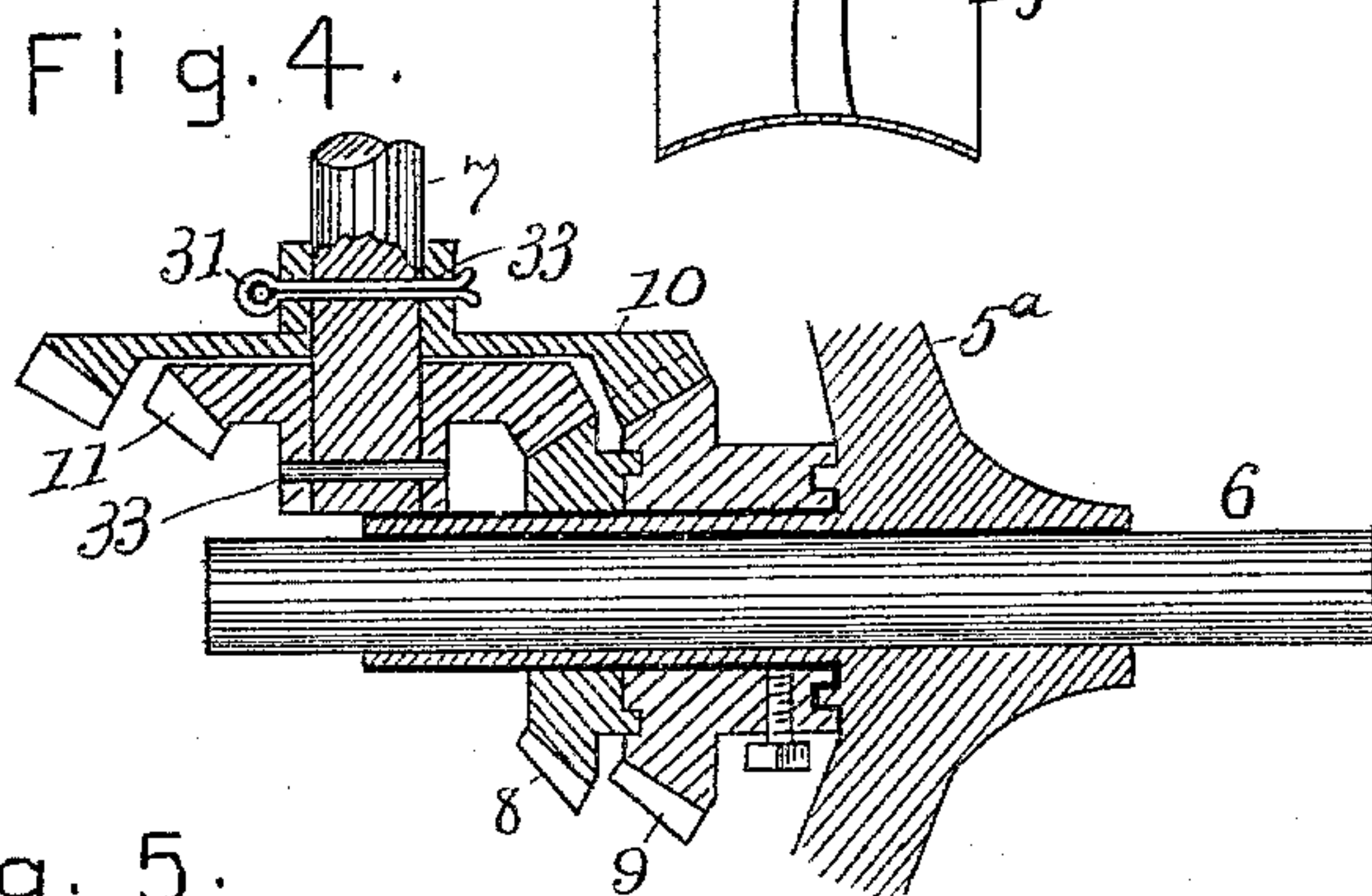
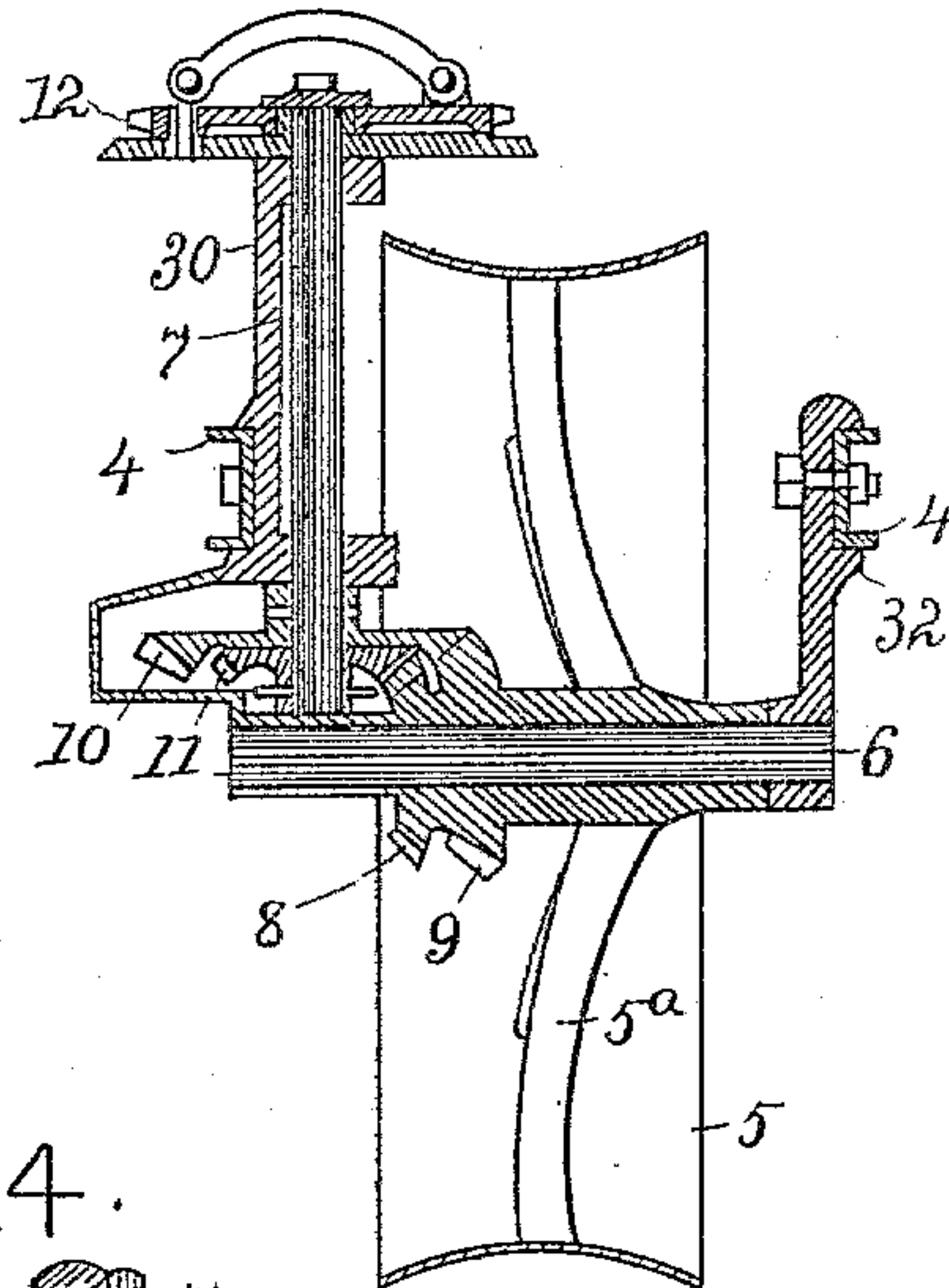
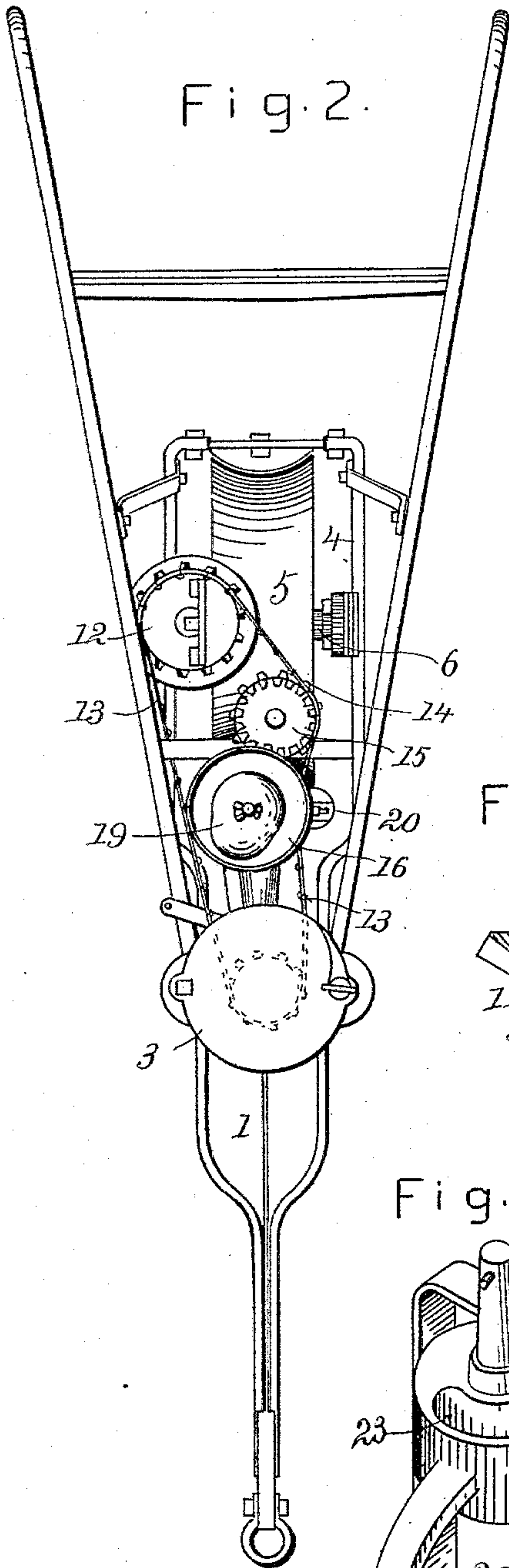
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2 Sheets—Sheet 2.

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No. 597,485.

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ATTEST  
L. P. Graham,  
Notary Public.

INVENTOR.  
W. L. BEALL,  
by L. P. Graham  
his attorney



# UNITED STATES PATENT OFFICE.

WILLIAM L. BEALL, OF ALBION, MICHIGAN, ASSIGNOR TO THE GALE  
MANUFACTURING COMPANY, OF SAME PLACE.

## PLANTER.

SPECIFICATION forming part of Letters Patent No. 597,485, dated January 18, 1898.

Application filed July 12, 1897. Serial No. 644,333. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. BEALL, of Albion, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Planters, of which the following is a specification.

This invention has special reference to one-horse or one-runner planters in which the seed-disk is driven from a wheel which partly supports the planter-frame.

It relates in part to driving-gear for varying the frequency of the discharge of grains of seed and in part to means for driving and supporting a fertilizer-distributer in connection with the planter. It is exemplified in the structure hereinafter described and it is defined in the appended claims.

In planters of this class a very great degree of variation in the frequency of discharge of grains is needed in order to meet the requirements of different localities, different conditions, and different opinions of individual farmers; and it is one object of this invention to provide for an unusual degree of variation in the comparative speed at which the seed-disk is driven. Such planters are commonly used in soils that require, or that can to advantage assimilate, artificial fertilizers. It is very desirable that provision shall be made for attachment of fertilizer-distributers, and, as a matter of course, the simpler the provision and the greater its capability for meeting the demands made on such devices the more nearly is perfection approached.

It is a part of the object of this invention to provide simplified and improved means for supporting a fertilizer-distributer on a planter, for driving its discharge mechanism, and for varying the speed at which it discharges.

In the drawings forming part of this specification, Figure 1 is a side elevation of a planter embodying my improvements. Fig. 2 is a plan of the planter. Fig. 3 is a vertical section on broken line  $x$  in Fig. 2. Fig. 4 is a detail section through the variable driving-gear. Fig. 5 is a perspective representation of the support for the fertilizer-distributer.

The specific construction of the general features of the planter is a matter of some indifference, and the form shown is representative merely of this class of planters. A run-

ner is shown at 1, a shank at 2, a seed-hopper at 3, a frame at 4, and a wheel at 5. These features are preferably constructed and combined as shown in the drawings, and the frame is supplied with suitable handles and a draft-hitch.

The shaft 6 of wheel 5 is journaled in brackets 30 and 32, which are secured to the side bars of frame 4 and project below the same, and the hub of the wheel has two gear-wheels 8 and 9. A vertical shaft 7 is journaled in bearings in bracket 30. It has on its upper end a sprocket-wheel 12 and on its lower end two loosely-mounted gear-wheels 10 and 11 of different diameters, one of which meshes with gear-wheel 9, while the other meshes with wheel 8. Provision is made whereby either of the wheels 10 or 11 may be fixed on its shaft, and such provision preferably consists of apertures 33 through the hubs of the wheels and through the shaft and a removable pin 31, adapted to fit either aperture. A chain 13 runs from sprocket-wheel 12 to the seed-disk wheel of seed-hopper 3, and when the planter travels along the field the motion of the wheel 5 is imparted to the seed-disk wheel through gear-wheels 9 and 10 or gear-wheels 8 and 11, the shaft 7, the sprocket-wheel 12, and the chain 13.

The diameters of wheels 8 and 9 are substantially the same. The wheels are disposed at different points lengthwise on shaft 6, and so the wheels 10 and 11 must be of different diameters in order that they may properly mesh one with wheel 9 and the other with wheel 8. To provide for such meshing, wheel 11 is nested in wheel 10, and to provide for fastening the wheels to the shaft the hub of wheel 10 extends upward and that of wheel 11 extends downward. When it is desired to drive the seed-disk at a slow rate of speed, the pin 31 is inserted through the hub of wheel 10, and when it is desired to develop a much greater rate of speed the pin is detached from the hub of wheel 10 and inserted through the hub of wheel 11.

In Fig. 3 the wheels 8 and 9 are shown integral with the hub, which they are in effect; but in Fig. 4 they are represented as made separate and fastened onto the hub, which is the preferred manner of constructing them.



The support for fertilizer-hopper 16 consists of a strap which rises from one side bar of the planter-frame, as shown at 28, crosses the frame, as shown at 22, and descends to the other side bar of the planter-frame, as shown at 29. The vertical portions of the strap are secured to the frame-bars at their lower ends, and a casting is fastened to the transverse portion of such strap. The casting comprises a disk-like portion 22, which forms the bottom of the fertilizer-hopper and is supplied with a discharge-opening 23. An arm 24 extends from the disk to the bottom of the seed-hopper, with which it is connected. A second arm 25 extends in the opposite direction and is bolted to the transverse portion of the strap, and its projecting end is bored vertically to provide a bearing for the shaft of the gearing that imparts motion to the fertilizer-hopper. A pin 18 extends upward from the center of disk 22 and provides a journal for the fertilizer-hopper and a point of connection for the discharge-cup. An arm 21 extends sidewise from the lower portion of disk 22. It provides a support for idler 20, and it is slotted to provide for adjustment of the idler. In this instance the fertilizer-hopper is rotated around a stationary feed-cup, though the conditions might be reversed, and the gear-wheel through which the rotary motion is imparted is shown at 17 in Fig. 1. A short shaft extends through the bore in hub 26. A sprocket-wheel 14 is fixed on the lower end of this shaft in line with chain 13, and a gear-wheel 15 is fixed on the upper end of the shaft in mesh with wheel 17 of the fertilizer-hopper.

When the fertilizer-distributor is in use, the chain 13 is made to engage the sprocket-wheel 14, the idler 20 is adjusted to give proper tension to the chain, and when the planter travels forward in the manner hereinbefore described the chain drives the fertilizer-discharger as well as the seed-disk.

The speed of the fertilizer-discharger will correspond with that of the seed-disk, running fast when sprocket-wheel 11 is used and slower when wheel 10 is used, and the proportionate rate of speed between the fertilizer-distributor and the seed-drop mechanism may be varied to any desirable extent by changing sprocket-wheel 14, lengthening or shortening the chain, and adjusting the idler.

When it is not desired to use the fertilizer-distributor, the entire device may be detached from the planter by loosening three bolts, and reattachment is made in a correspondingly easy manner.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a planter, the combination of a driver-

shaft impelled from a planter-wheel, a driven shaft connected with the seed-dropping mechanism, a pair of intermeshing gear-wheels mounted one fixedly and the other loosely on the different shafts, a second pair of intermeshing gear-wheels mounted one loosely and the other fixedly on the different shafts and speeded different from the first pair, and means for fastening either of the loose pulleys onto its shaft, substantially as set forth.

2. In a planter, the combination of a carrying-wheel, two gear-wheels fixed on the hub of the carrying-wheel, a vertical shaft having two loosely-mounted gear-wheels each meshing with one of the gear-wheels of the carrying-wheel, and means for fastening either of the loose pulleys onto its shaft; one pair of intermeshing wheels being speeded different from the other pair, substantially as set forth.

3. In a planter the combination of a carrying-wheel having two gear-wheels fixed on its hub, a vertical shaft having two loosely-mounted gear-wheels each meshing with one of the gear-wheels of the carrying-wheel, one pair of intermeshing wheels being speeded different from the other pair, a pin adapted to fasten either of the loose wheels onto its shaft, a sprocket-wheel on the upper end of the vertical shaft and a chain connecting such sprocket-wheel with the disk-wheel of the planter, substantially as set forth.

4. In a planter, the combination of a carrying-wheel, a vertical shaft geared to the carrying-wheel and provided with a sprocket-wheel, a chain running in an approximately horizontal plane from the sprocket-wheel to the seed-disk wheel, a fertilizer-hopper located between the sprocket-wheel and the seed-disk and having a gear-wheel on its lower end, and gearing in mesh with the wheel of the hopper and in contact with the chain, substantially as set forth.

5. In a planter, the combination of a planter-frame, an arched strap adapted to be fastened to the side bars of the frame, a casting secured to the strap and comprising a disk, a shaft-bearing, an idler-support and a hopper-pivot, substantially as set forth.

6. In a planter, the combination of a planter-frame, an arched strap adapted to be fastened to the side bars of the frame, a casting secured to the strap and comprising a disk, a brace-arm, a shaft-bearing, an idler-support and a hopper-pivot, substantially as set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

WILLIAM L. BEALL.

Attest:

G. W. BORTLES,  
EARLE KNIGHT.