

(No Model.)

2 Sheets—Sheet 1.

W. H. BRADSHAW.
PLOW.

No. 552,886.

Patented Jan. 14, 1896.

Fig: 1.

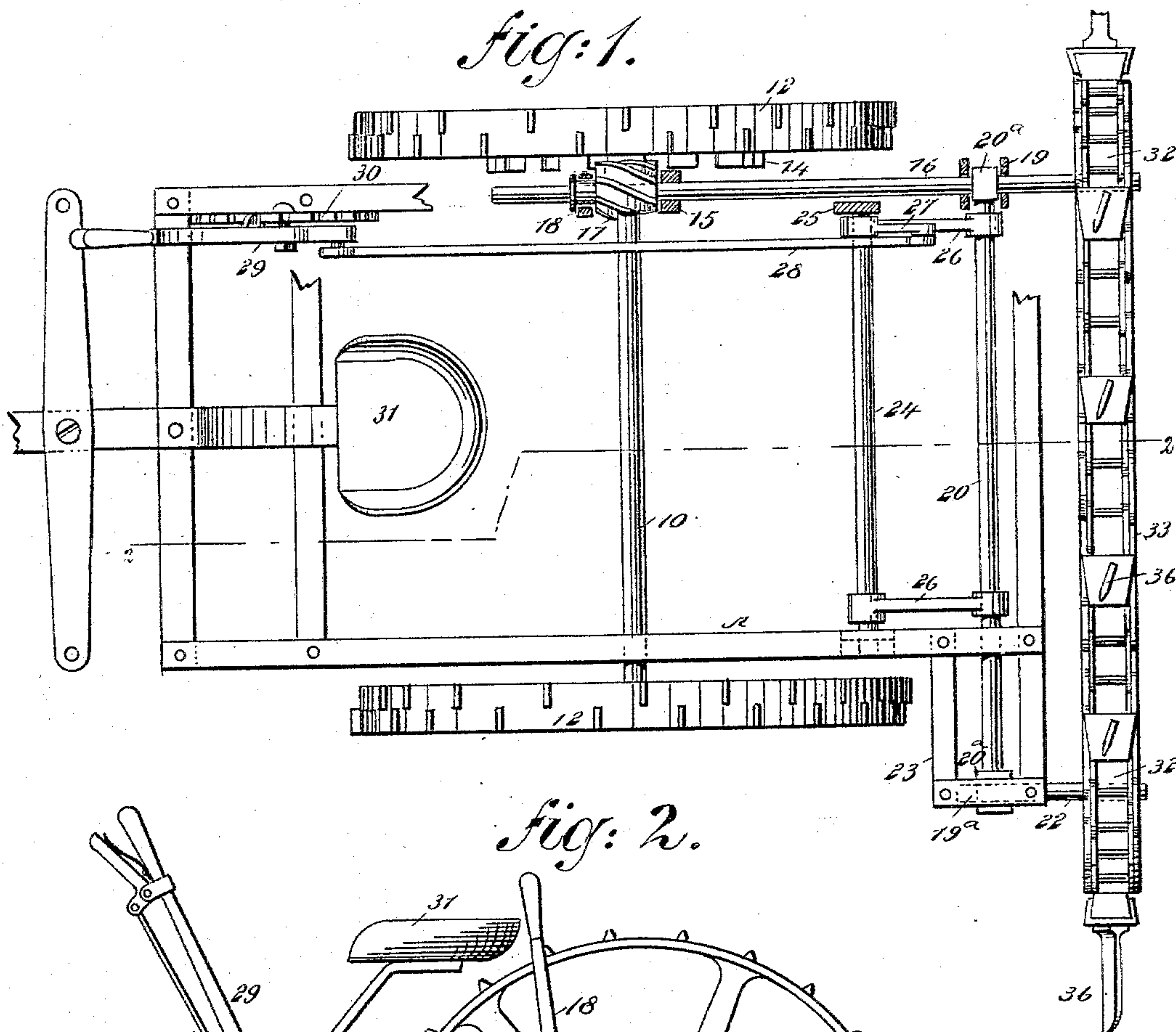
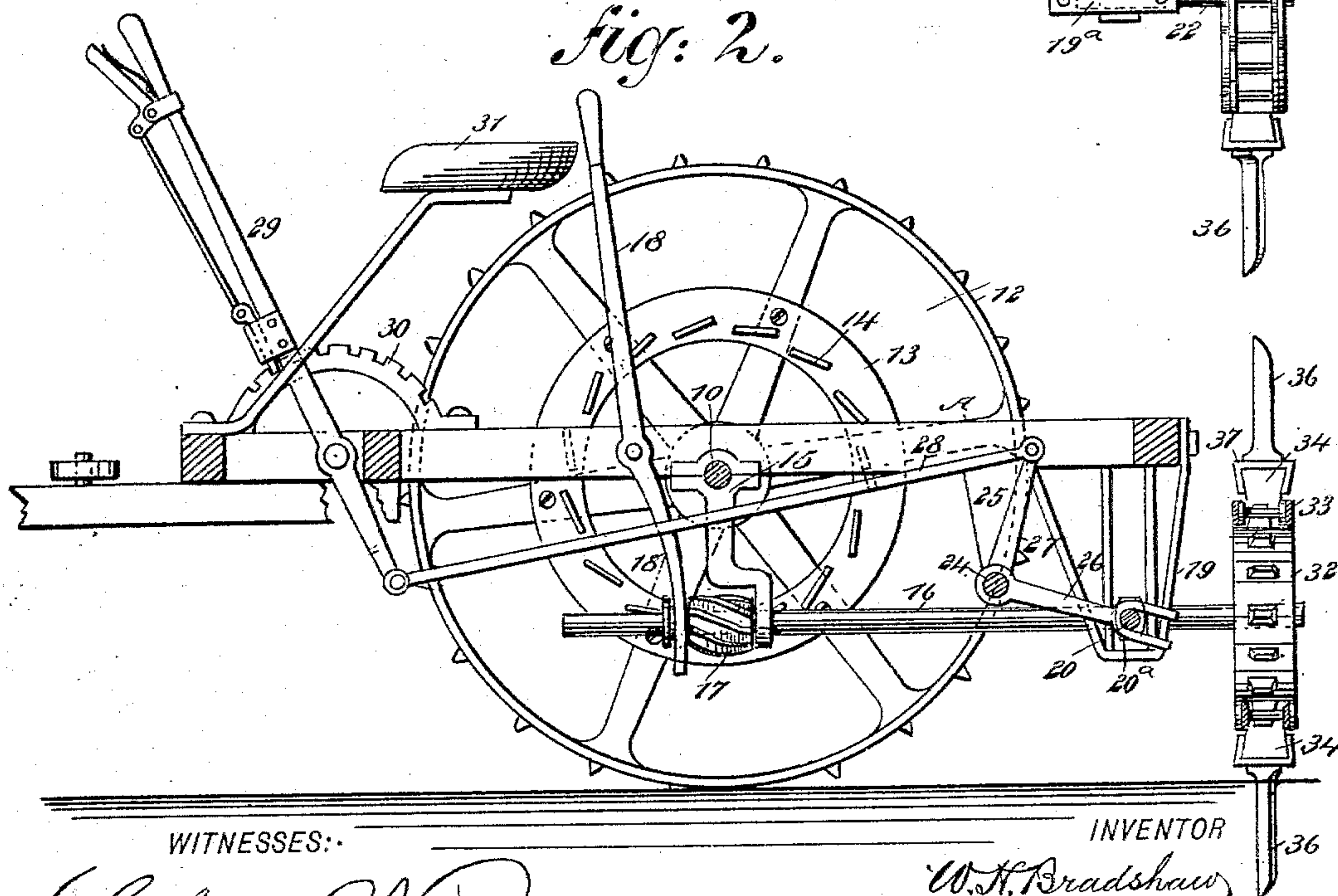


Fig: 2.



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(No Model.)

2 Sheets—Sheet 2.

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fig:3.

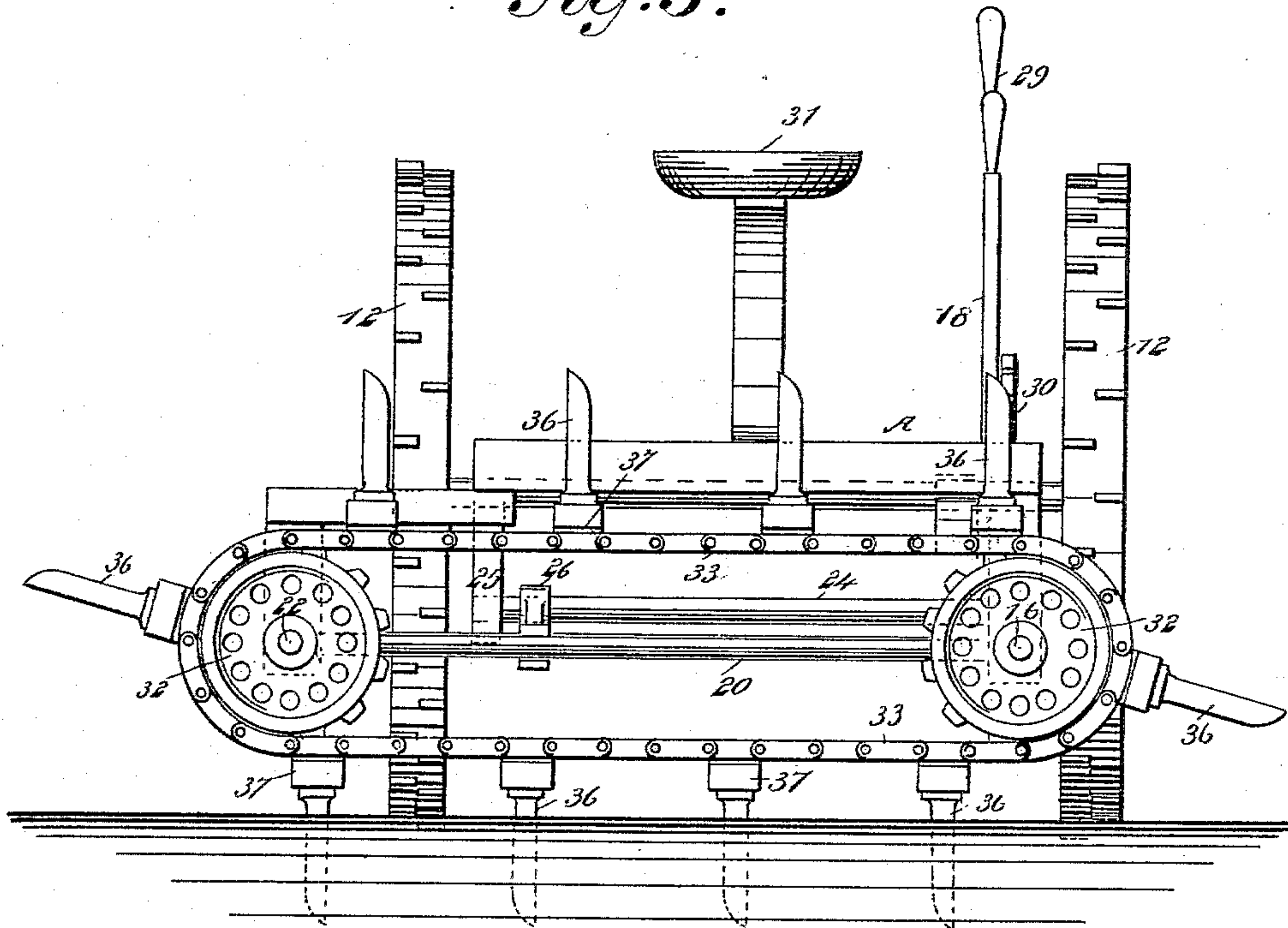


Fig:4.

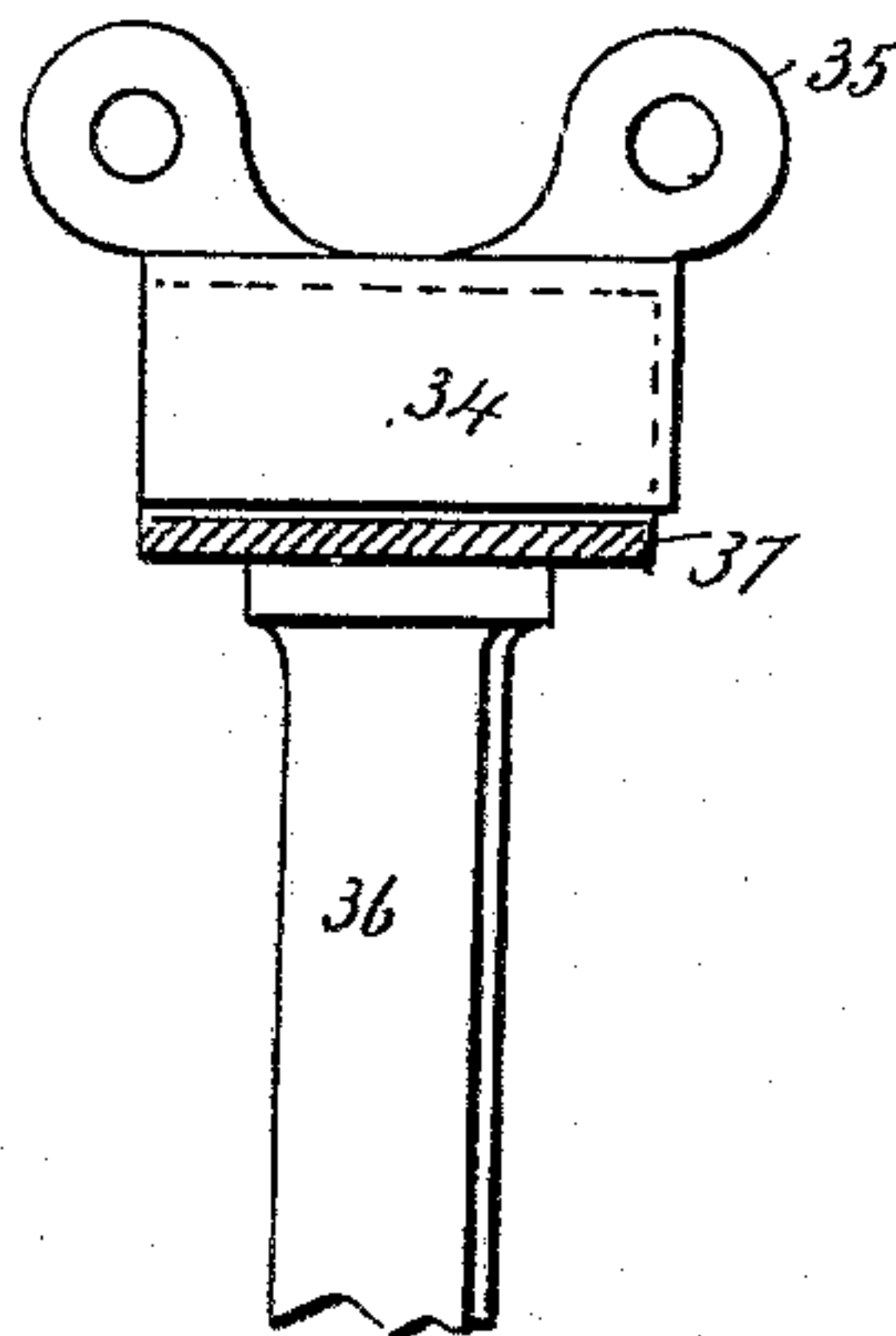


Fig:6.

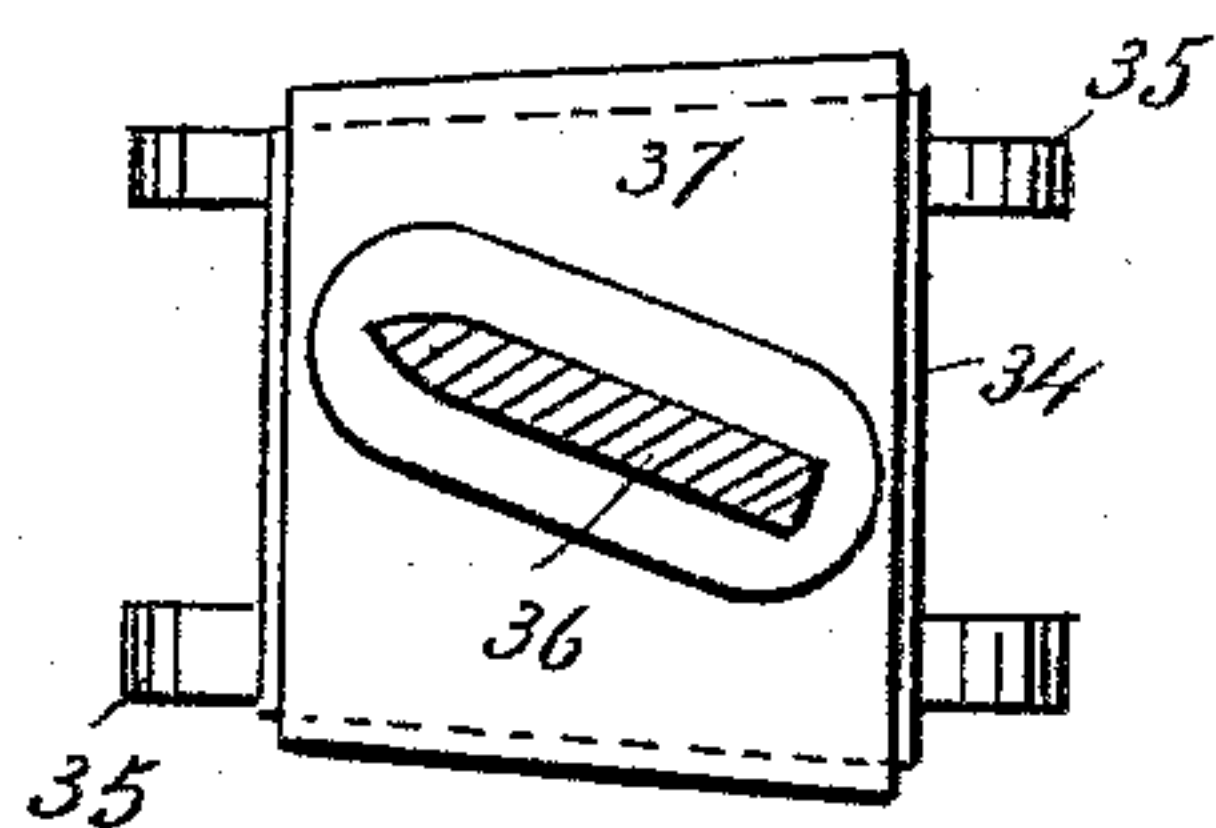


Fig:5.

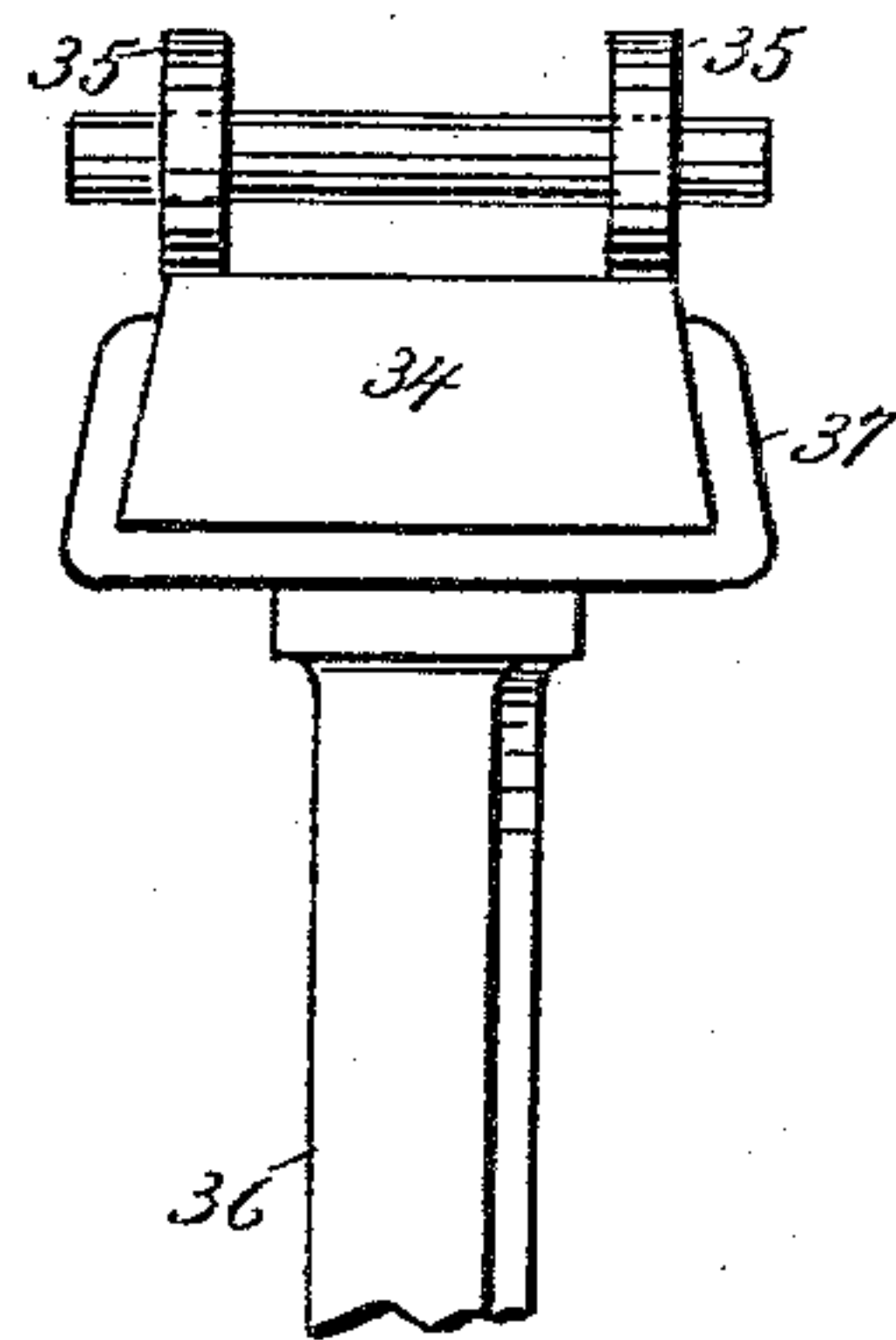
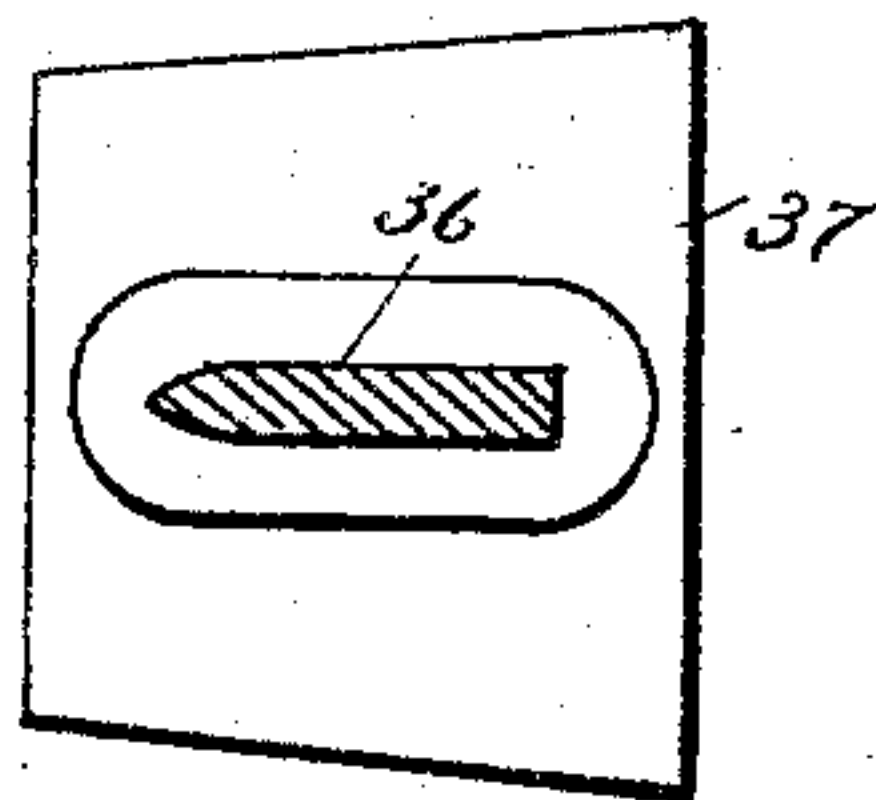


Fig:7.



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UNITED STATES PATENT OFFICE.

WILLIAM H. BRADSHAW, OF ORANGE, NEW JERSEY.

PLOW.

SPECIFICATION forming part of Letters Patent No. 552,886, dated January 14, 1896.

Application filed April 13, 1895. Serial No. 545,629. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BRADSHAW, of Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Plows, of which the following is a full, clear, and exact description.

My invention relates to an improvement in plows, and it has for its object to construct a plow, particularly a horse-plow, in which the plow-blades will be mounted upon an endless carrier, and to provide a means whereby the plows will be operated from a driving-wheel of the machine, and whereby further they may be raised or lowered as occasion may demand, and held in any position in which they may be placed.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improved plow, a portion of the frame being broken away and portions of the bearings being in section. Fig. 2 is a longitudinal vertical section taken on the line 2 2 in Fig. 1. Fig. 3 is a rear elevation of the plow. Fig. 4 is an enlarged sectional view through the endless belt, showing one of the plow-blades in position thereon. Fig. 5 is a side elevation of a link of the carrying-chain and a plow-blade attached thereto. Fig. 6 is a horizontal section through the plow-blade, the link of the carrying-chain to which it is attached being shown in bottom plan view; and Fig. 7 is a view similar to Fig. 6, the plow-blade being arranged straight on the link instead of diagonally, as illustrated in Fig. 6.

In carrying out the invention the frame A may be of any desired construction or of any desired shape. It is provided with an axle 10, upon which are loosely mounted ground-wheels 12, and one of said ground-wheels is provided with a worm-wheel 13 fast thereto, and provided with diagonally-arranged projections 14, as shown in Fig. 2. A hanger 15 is projected downward from the axle 10 ad-

jacent to the said worm-wheel, as is also shown in Fig. 2, and in the said hanger one end of a shaft 16 is journaled, which shaft is made to extend rearwardly, preferably beyond the rear end of the frame. On the shaft 16 a worm or cog 17 is mounted to slide yet turn with the shaft, being controlled by a hand-lever 18. (Shown also in Fig. 2.) Brackets 19 and 19^a are projected downward from the rear portion of the frame, the bracket 19 being secured to one of the side bars of the frame or to an equivalent support, while the bracket 19^a is projected downward from an extension 23 of the main frame, located between its rear end and the ground-wheel on, for example, the left-hand side of the machine, as shown in Fig. 1. A shaft 20 is journaled in boxes 20^a, said boxes being made to slide in the hangers 19 and 19^a in a vertical direction, and a short shaft 22 is journaled in the left-hand box 20^a, which has sliding movement in the bracket of the extension of the frame. A second shaft 24, substantially parallel to the shaft 20, is mounted in suitable hangers 25 projected downward from the frame, and the shaft 24, which is a lifting-shaft, is provided with arms 26, which are carried rearward and forked at their rear ends to receive the main shaft 20.

It may here be remarked that the right-hand shaft 16, which carries the worm or cog 17, is likewise journaled in the right-hand box 19 with the equivalent end of the main shaft 20, as shown in Fig. 1, so that when the shaft 20 is elevated the shaft 16 at its rear end and likewise the short shaft 22, which extends rearward beyond the main frame, will be likewise raised.

The elevation of the shaft 20 is effected through the medium of a crank-arm 27 attached to the lifting-shaft 24 and a link 28, which is pivoted to the upper end of the crank-arm 27 and extends forwardly, being pivotally connected with a hand-lever 29 having a suitable thumb-latch to engage with a rack 30, both the shifting-lever 18 and the lifting-lever 29 being convenient to the driver's seat 31, and preferably the lifting-lever is at the front of the seat, while the shifting-lever is at or near the rear, as shown in Fig. 2.

A sprocket-wheel 32 is mounted upon the

rear end of the short shaft 22 and the longer shaft 16. These sprocket-wheels are made to carry an endless link-belt 33, motion being given thereto by the worm or cog 17 operated from the right-hand ground-wheel of the machine. Sundry of the links of this chain are provided with a block 34, as shown in Figs. 4, 5, 6, and 7, either integral therewith or attached thereto in any suitable or approved manner, and each block is provided with suitable eyes 35 for connection with an adjacent link. Each block 34 is made tapering at its sides, the taper being upwardly from the bottom, and is wider at one end than at the other, and a yoke 37 is received by each block 34, being shaped correspondingly to the block receiving it, whereby when the yoke is forced upon a block in direction of its wider end it will be wedged firmly to place, and it may here be remarked that the narrower ends of the blocks and yokes are presented to the line of travel of the endless chain 33 on the lower stretch of said chain, so that when the plow-blades 36 are in the ground they will at that time be wedged firmly in engagement with the chain by the pressure of the ground on their cutting-edges. These plow-blades may be placed, as shown in Fig. 6, diagonally of the blocks 37, or they may be placed straight on said blocks, as shown in Fig. 7. In either event the forward or cutting edges of the blades are more or less wedge-shaped or pointed.

In the operation of this machine the plow-blades have a continuous cutting movement, one closely following the other, and the ground is not only turned up, but is likewise pulverized and will be left with a garden-like finish. Whenever necessary the plows may be carried out of the ground by simply manipulating the shifting-lever 29, which when carried in one direction will cause the endless chain carrying the plow-blades to be raised.

I desire it to be understood that instead of the worm-gear illustrated any form of cog or other gearing may be employed to produce the rotation of the plows, and that also two or more plow-blades may be employed upon the endless carrier; furthermore, that one or more of these plow-blades may be made much longer than the rest, so as to form substantially a subsoil-plow.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. In a plow, an endless carrier and plow blades secured to said carrier, the said blades being so placed on the carrier that their pressure on the ground will operate to tighten their wedge-like connection with the carrier as and for the purpose specified.

2. In a plow, an endless carrier provided with series of blocks having tapering opposing faces, being wider at one end than at the other, yokes correspondingly formed, receiving the said blocks, and plow blades secured to said blocks, their cutting edges facing the narrower ends of the yokes, as and for the purpose specified.

3. In a plow, the combination, with a wheeled support, shafts carried by the said supports, extending rearwardly beyond the frame and having pulleys secured at their rear ends, an endless belt carried by the said pulleys, a driving and shifting connection between one of the said shafts and one of the ground wheels, and plow blades secured to the said endless belt, having one of their vertical edges sharpened, as and for the purpose specified.

4. In a plow, the combination, with a frame, its supporting wheels, shafts journaled in said frame and extending rearwardly beyond the same, said shafts being capable of being elevated at their rear ends, a driving and a shifting connection between one of said shafts and one of said drive wheels, a lifting shaft journaled in the said frame, and a lift lever having a crank connection with said shaft, of a transverse shaft connecting the above named shafts, extending beyond the rear of the frame, lifting arms secured to the lift shaft and engaging with the transverse shaft, the latter being mounted in movable bearings, sprocket wheels secured to the rear ends of the rearwardly extending shafts, an endless link belt passed over the said sprocket wheels and provided with tapering blocks wider at one end than at the other, yokes adapted to slide on the said tapering blocks and conform thereto, and plow blades secured to said yokes, as and for the purpose specified.

WILLIAM H. BRADSHAW.

Witnesses:

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