

(No Model.)

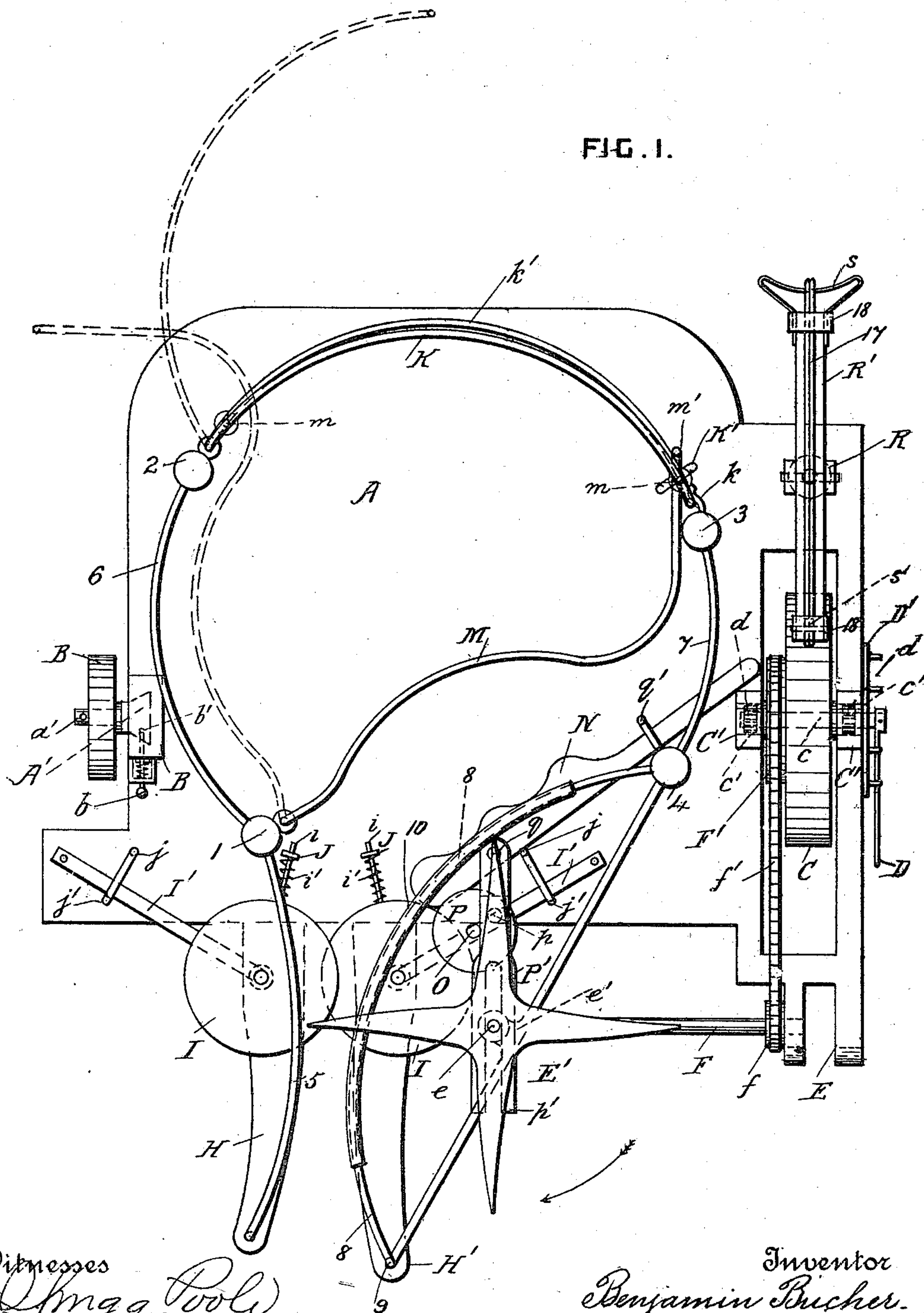
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B. BUCHER.
CORN HARVESTER.

No. 572,958.

Patented Dec. 15, 1896.

FIG. 1.



Witnesses

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(No Model.)

3 Sheets—Sheet 2.

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FIG. 2.

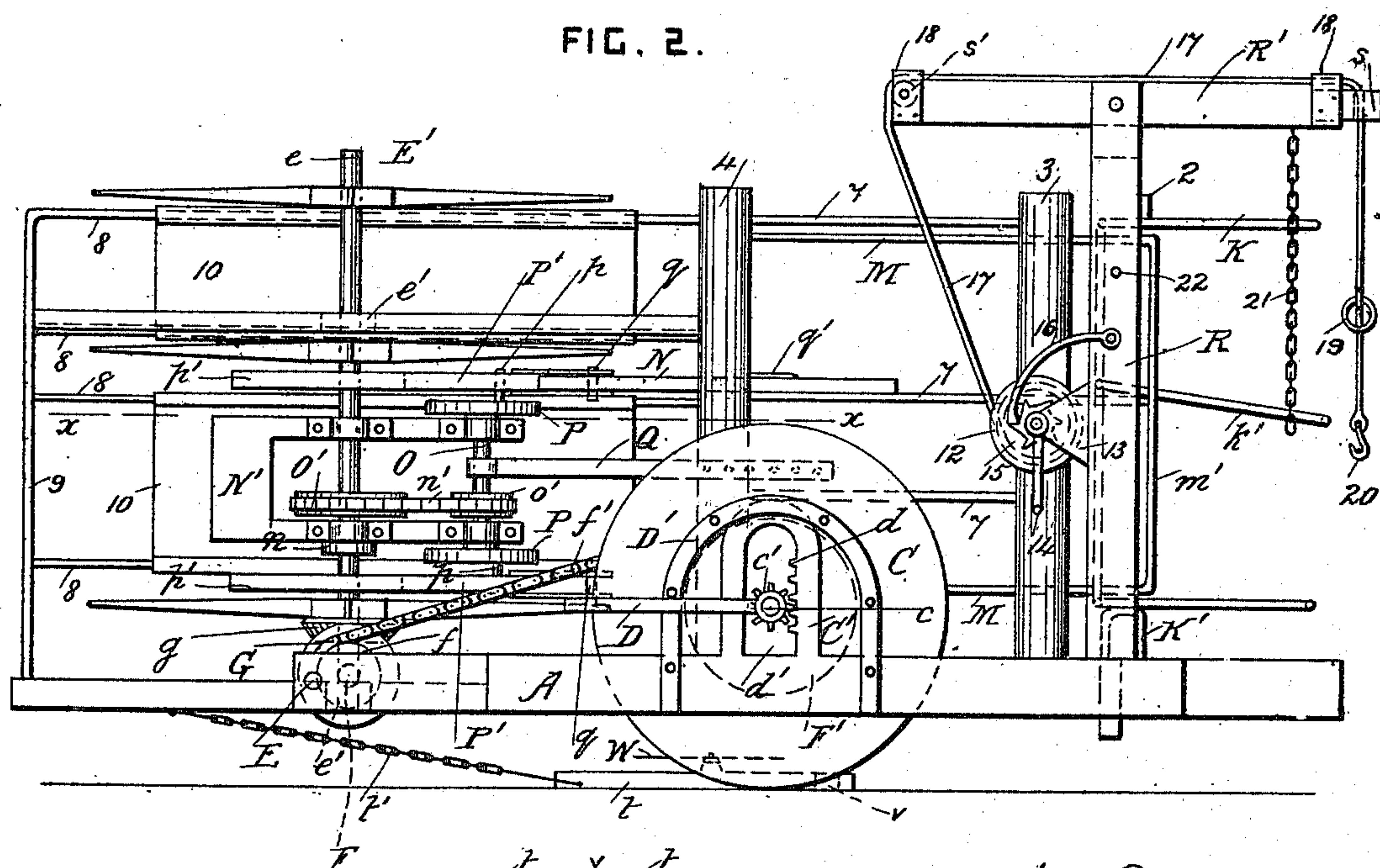
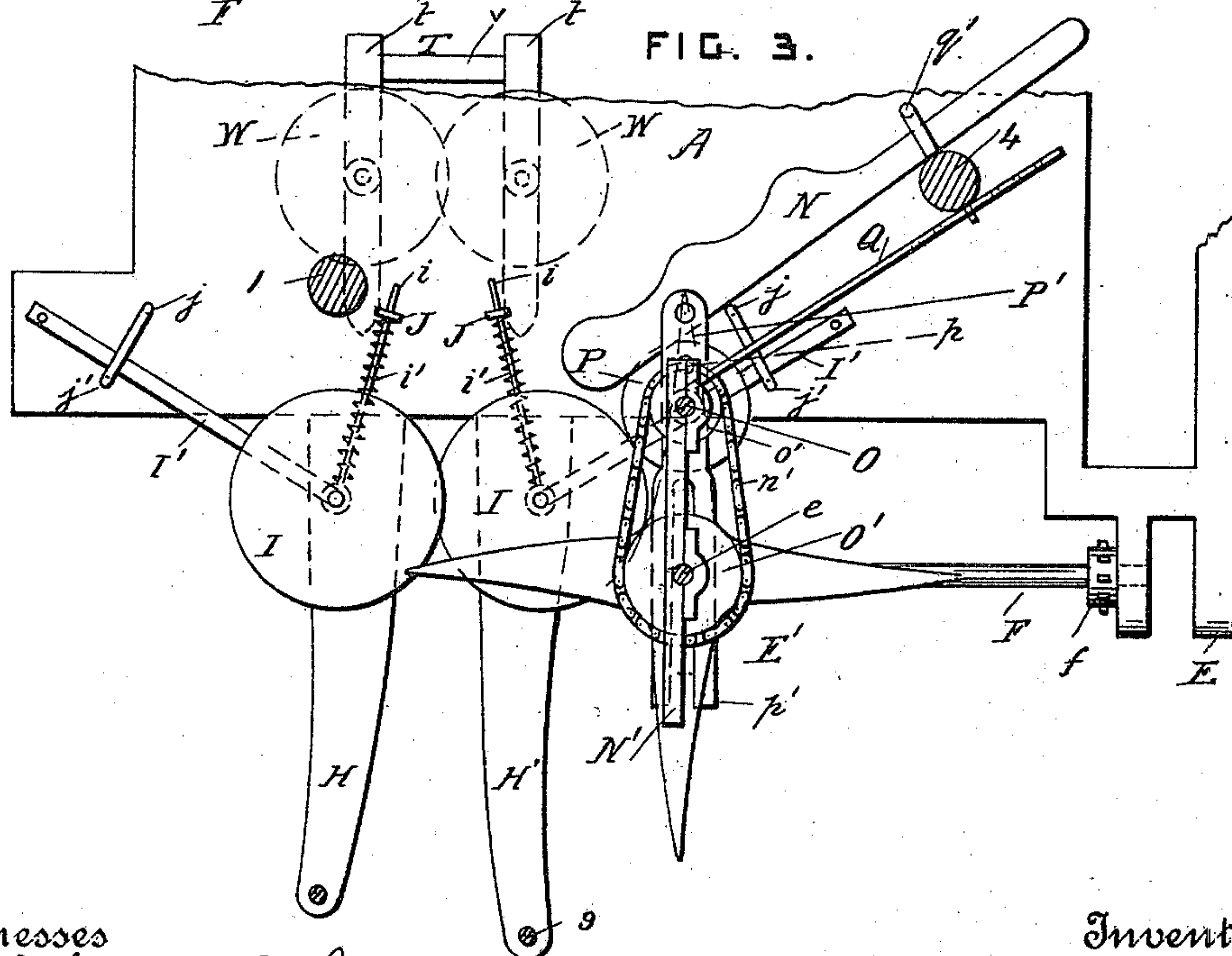


FIG. 3.



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FIG. 4.

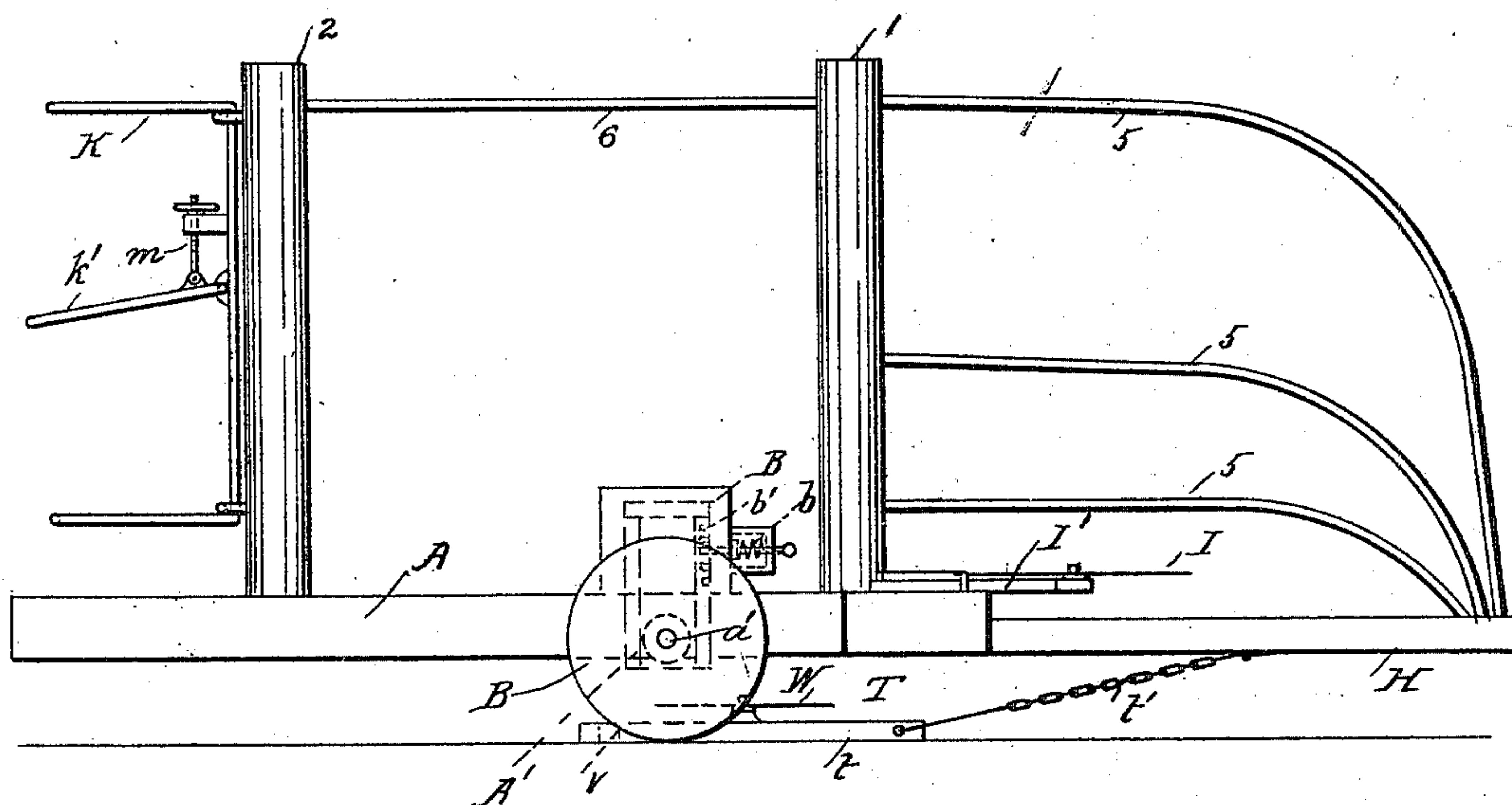
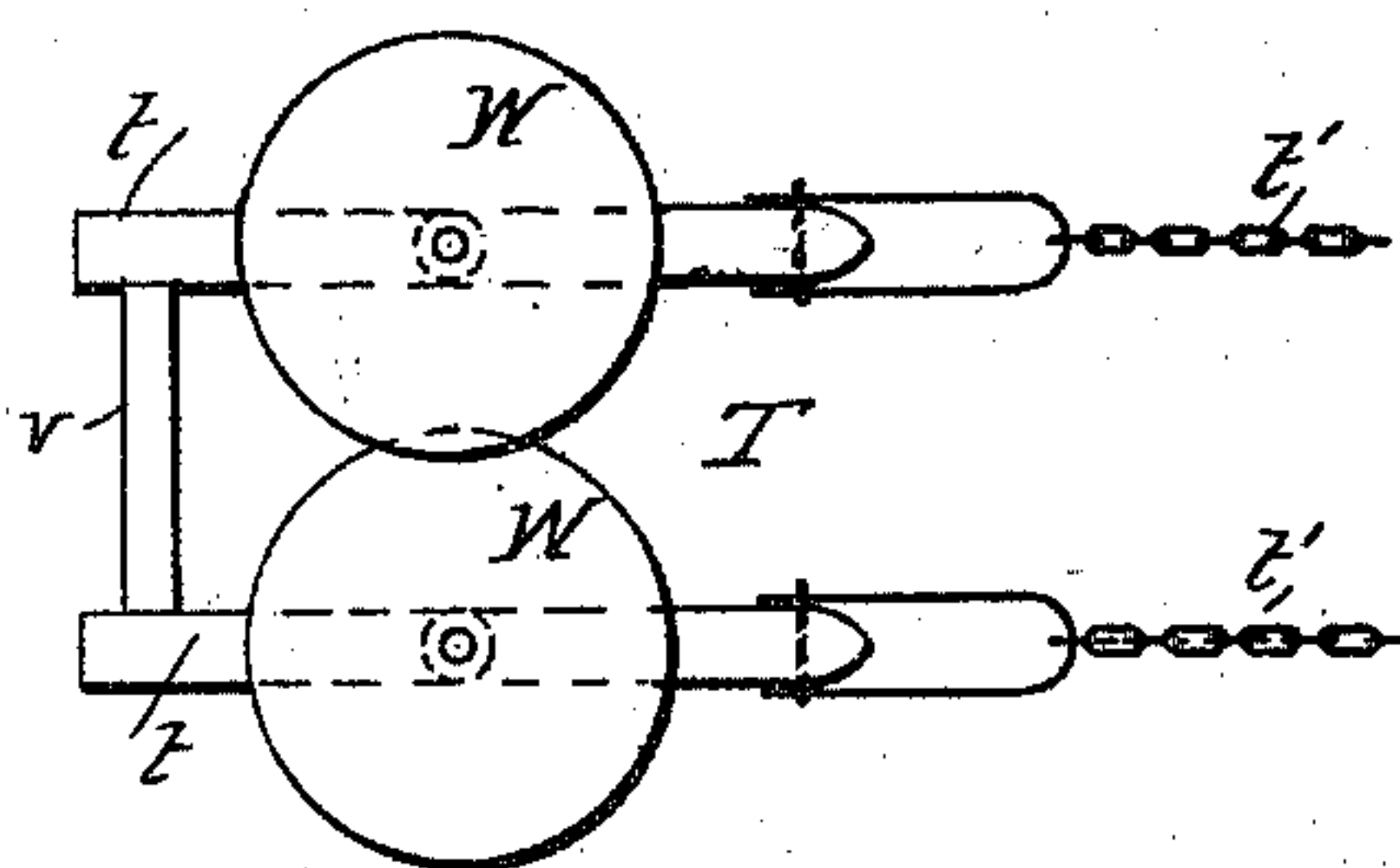


FIG. 5.



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UNITED STATES PATENT OFFICE.

BENJAMIN BUCHER, OF WHITE HOUSE, OHIO.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 572,958, dated December 15, 1896.

Application filed February 8, 1896. Serial No. 578,577. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN BUCHER, a citizen of the United States, residing at White House, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Corn-Harvesters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to corn-harvesters; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a plan view of the machine. Fig. 2 is a side view on the side of the driving-wheel. Fig. 3 is a sectional plan view taken on the line xx in Fig. 2. Fig. 4 is a side view looking from the opposite direction to Fig. 2. Fig. 5 is a detail plan view of the stubble-cutter.

A is the platform of the machine, which is supported on two wheels B and C, so that it may be adjusted to different heights above the ground. The wheel B is journaled on a pin a' , projecting from a dovetailed block A', which slides vertically in a bracket B on the platform, and b is a spring-operated catch or bolt of any approved construction for holding the block in the bracket after its position has been adjusted. The end of the bolt b is free to engage with holes b' in the slidable block A'.

C is the driving-wheel, which is journaled on a shaft c . This shaft c has toothed pinions c' , secured on it and gearing into toothed racks d , formed on brackets C', which are carried by the platform A. The shaft and pinions are free to move vertically in the slots d' of the brackets C', and D is a lever secured to the end of the shaft c for revolving it.

D' is a catch-bracket provided with projecting pins.

The lever and shaft are turned until the platform is the desired height above the ground, and the lever is then sprung under the nearest projecting pin, so that the platform is held in position.

Any other approved adjusting devices may be used for regulating the height of the platform above the ground.

E is a double eye at the front of the plat-

form for the attachment of a vehicle-pole of approved construction for drawing the machine along.

E' is a reel composed of a vertical shaft e , journaled in bearings e' at the front part of the machine, and spiders secured on the said shaft. As many spiders as desired may be used, and each spider preferably has eight arms, although only four arms are shown in the drawings.

Motion is imparted to the reel E' from the drive-wheel by means of suitable driving mechanism.

F is a horizontal shaft journaled in bearings secured to the platform.

F' is a chain-wheel secured to the driving-wheel.

f is a chain-wheel secured on the shaft F, and f' is a drive-chain passing over the chain-wheels F' and f .

G g are toothed bevel-wheels secured, respectively, on the shafts F and e , and gearing into each other. The reel E' is revolved continuously as the machine is drawn along.

1 2 3 4 are vertical posts secured to the platform A, and H H' are two guide-bars at the front end of the platform. Curved bars 5 extend between the guide-bar H and the post 1. A curved bar 6 couples the upper parts of posts 1 and 2, and curved bars 7 extend between the posts 3 and 4. Curved bars 8 are secured to the post 4 and to a vertical bar 9 at the front end of the guide-bar H', and 10 are guide-plates secured to the said bars 8. The arms of the reel project between the plates 10 and above and below them.

I are revoluble cutting-disks supported above the rear end portions of the guide-bars. These disks are journaled on the front ends of the outwardly and rearwardly diverging arms I'. The rear ends of these arms are pivoted to the platform and the disks are arranged to overlap each other slightly. Guide-rods i are connected to the arms I', and i' are springs encircling the guide-rods.

J are eyes in which the guide-rods slide, and j are stops for limiting the rearward motion of the arms. The springs i' normally press forward the arms against the stops j .

The machine is drawn along so that the cornstalks come between the guide-bars H H'

and are cut off by the revoluble cutting-disks. These disks are moved rearwardly and toward each other by the stalks in the act of cutting through the stalks, and this motion insures the success of the cutting action. The arms of the reel catch the fodder as soon as the stalk is cut through and convey it rearward between the bars 5 and the plates 10.

K is the curved discharging-gate, hinged to the post 2 and connected to the post 3 by any approved catch, such as a spring-catch *k*.

K' is a support for the free end of the gate when closed. The outwardly-curved middle bar *k'* of the gate is adjustable, and *m* are screws for adjusting it; but any other approved means may be used for adjusting the said bar and causing it to project more or less in a rearward direction.

M is the shocker or shocker-gate, which is provided with horizontal curved bars and hinged to the vertical post 1. The shocker-gate is preferably formed of horizontal and vertical bars, constituting a panel, flap, or framework like any hinged farm-gate of approved construction. The arrangement and curvature of these bars may be varied in carrying out this invention. The vertical end bar *m'* of the shocker bears against the bar *k'* of the discharging-gate, and the bar *k'* prevents the shocker from being pressed back unless considerable pressure is used. The bar *k'* is preferably formed of resilient material, or it is otherwise constructed or supported so that it affords continuously a spring-like or yielding frictional resistance to the movement of the end bar of the shocker. When the screws *m* are tightened, the bar *k'* is raised and is moved outward to the rear, thereby causing the shocker to work against an increased resistance. The fodder is moved rearward by the reel onto the platform and into the space between the posts 1, 2, 3, and 4.

N are packer-arms for pressing the fodder against the shocker.

N' is a frame journaled on the shaft *e* and supported by the collar *n* on the said shaft.

O is a shaft journaled in the frame N' and driven from the shaft *e*.

O' is a chain-wheel secured on the shaft *e*. *o'* is a chain-wheel secured on the shaft O, and *n'* is a drive-chain passing around the said chain-wheels O' and *o'*.

P are crank-disks secured on the crank-shaft O and provided with crank-pins *p*.

P' are connecting-rods provided with forked front ends *p'*, which engage with the shaft *e*. The rear ends of the connecting-rods are pivoted to the packer-arms by the pins *q* and the middle portions of the connecting-rods engage with the said crank-pins.

The free ends of the packer-arms slide in loops *q*, carried by the post 4.

The position of the packer-arms and frame is regulated by means of a rod Q, which is connected to the crank-shaft O or to any convenient part of the packer-frame. The free end of the rod Q is adjustably connected to

any stationary support, such as the post 4, and any other approved form of adjusting device, such as a lever and toothed quadrant, may be used in connection with the rod Q for holding the packer-frame in position. When the rod Q is moved to the left in Fig. 3, the packer-arms N project farther through the spaces between the curved bars 8, and therefore their effective stroke in the action of packing the fodder is increased. The packer-arms are adjusted so as to project more or less between the bars, according to the condition of the fodder, which varies in different corn-fields and which also varies with the dampness or dryness of the fodder at the time of cutting the corn. The packer-arms press the fodder into a small space and force back the shocker until sufficient fodder to form a shock is collected on the platform between the posts 1, 2, 3, and 4.

R is a crane for removing the fodder from the platform. The center post of this crane is pivoted on the platform so that it may be swung around.

R' is a cross-bar pivoted to the top of the crane-post in any approved manner. One end of the cross-bar is provided with a curved bracket *s* for bearing against the fodder and its other end is provided with a guide-sheave *s'*.

A winch-barrel is journaled between frames 13, secured to the crane-post.

14 is a handle for revolving the said barrel 12.

15 is a ratchet-wheel on one end of the barrel, and 16 is a pivoted pawl engaging with the said ratchet-wheel and preventing the reverse movement of the barrel.

17 are cords secured to the barrel and passing over the sheave *s'* and along the cross-bar.

18 are guides for keeping the cords on the cross-bar.

One cord is provided with a link or ring 19 and the other with a hook 20.

A stay-chain 21 is attached to the rear end of the cross-bar, and 22 is a pin on the crane-post for the free end of the chain to engage with.

When the shocker is forced back to the position indicated by the dotted lines in Fig. 1, the crane is turned around and the ropes are passed around the fodder. The hook is then slipped into the ring and the stay-chain is connected to the pin 22, so as to hold the cross-bar in a horizontal position while the ropes are being tightened around the fodder. The outer end of the cross-bar is the heavier and normally holds it substantially horizontal without the stay-chain, but when the cords are to be tightened around the fodder it is necessary to hook the stay-chain over the pin 22, as otherwise, when the cords were pulled upon by the winch, the downward pull of the cords on the sheave *s'* would raise the outer end of the cross-bar from its horizontal position and the cords would slip upon the fodder. The cords are then wound upon the winch-bar-

rel, so that the fodder is formed into a compact shock. The discharging-gate is then opened, as indicated by the dotted lines in Fig. 1. The stay-chain is then slipped off the pin 22 and the shock is raised by means of the barrel, which is then free to raise the outer end of the cross-bar. The crane is then swung around and the shock is lowered onto the ground and is tied up permanently. The gate and shocker are restored to their original positions by hand after the shock has been discharged by the crane.

As the cutter-disks I are necessarily above the platform the cornstalks form a long stubble.

T is a stubble-cutter arranged under the platform and a little to the rear of the disks I. This stubble-cutter comprises two runners *t*, which slide along the ground and are attached to the guide-bars H H' by chains *t'*, which permit the runners to move freely to a limited extent in every direction. A cross-bar *v* couples together the rear ends of the runners and keeps them from spreading.

W are cutting-disks journaled on pins projecting from the runners and slightly overlapping each other. These disks engage with the stubble-stalks as the machine is drawn along, and cut them off very near the ground, so that the field does not appear unsightly and the stubble does not offer an obstruction in plowing up the field subsequently.

What I claim is—

1. In a corn-harvester, the combination, with a traveling platform, of rearwardly and outwardly diverging arms having their rear ends pivoted to the platform, disk cutters journaled on pins at the free ends of the said arms, and springs operating to press forward the free ends of the said arms, substantially as set forth.

2. In a corn-harvester, the combination, with a traveling platform, of rearwardly and outwardly diverging arms having their rear ends pivoted to the platform, guide-rods connected to the said arms, eyes for the said guide-rods to slide in, springs encircling the guide-rods and operating to press forward the free ends of the said arms, stops for limiting the motion of the arms, and disk cutters journaled on pins at the free ends of the said arms, substantially as set forth.

3. In a corn-harvester, the combination, with a supporting-post, and a shocker-gate hinged at one end to the said post; of reciprocatory packing mechanism operating to press the fodder in successive layers against the shocker-gate, and means for opposing a frictional resistance to the movement of the shocker-gate, substantially as set forth.

4. In a corn-harvester, the combination, with a supporting-post, and a shocker-gate hinged at one end to the said post; of a discharge-gate provided with a yielding curved bar engaging with the free end of the shocker-gate and opposing a frictional resistance to its motion, and packing mechanism operating to press the fodder against the shocker-gate, substantially as set forth.

5. In a corn-harvester, the combination, with a supporting-post, and a shocker-gate hinged at one end to the said post; of a discharge-gate provided with a yielding curved bar engaging with the free end of the shocker-gate and opposing a frictional resistance to its motion, means for adjusting the said curved bar and packing mechanism operating to press the fodder against the shocker-gate, substantially as set forth.

6. In a corn-harvester, the combination, with the packer-arms, of a vertical shaft, a packer-frame supported from the said shaft, a crank-shaft carried by the free end of the said frame, driving devices coupling the two said shafts, means for operating the packer-arms from the crank-shaft, and means for adjusting the position of the free end of the said frame, substantially as set forth.

7. In a corn-harvester, the combination, with the shaft *e*, and the packer-frame carried by it; of a crank-shaft journaled in the free end of the said frame, packer-arms, connecting-rods pivoted at one end to the packer-arms, operatively connected with the said crank-shaft, and provided with forks at their other ends engaging with the shaft *e*; and driving devices, coupling the two said shafts, substantially as set forth.

8. In a corn-harvester, the combination, with a traveling platform, of a stubble-cutter provided with cutting devices and runners, and flexible connections attaching the stubble-cutter to the machine below the said platform and permitting it to have a limited movement in every direction substantially as set forth.

9. In a corn-harvester, the combination, with a traveling platform; of a stubble-cutter comprising two runners coupled together at their rear ends, and cutting-disks journaled on pins projecting from the runners; and chains connecting the front ends of the runners with the machine below the platform, substantially as set forth.

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

BENJAMIN BUCHER.

Witnesses:

ROBERT WHEELER,
F. A. BUTLER.