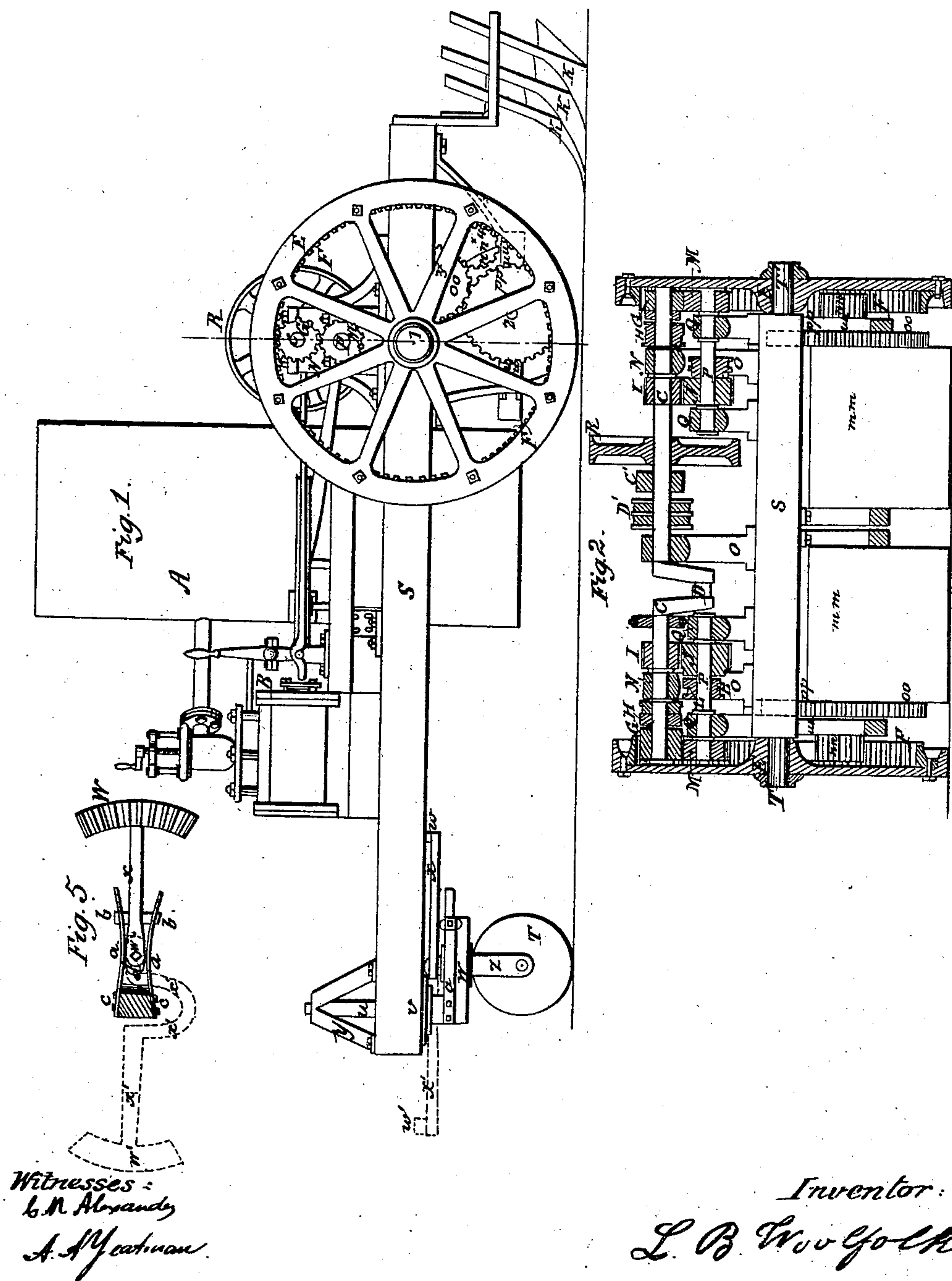


Steam Flow.

2 Sheets—Sheet 1.

No. 28,801.

Patented June 19, 1860.



L. B. WOOLFOLK.

2 Sheets—Sheet 2.

Steam Plow.

No. 28,801.

Patented June 19, 1860.

Fig. 3.

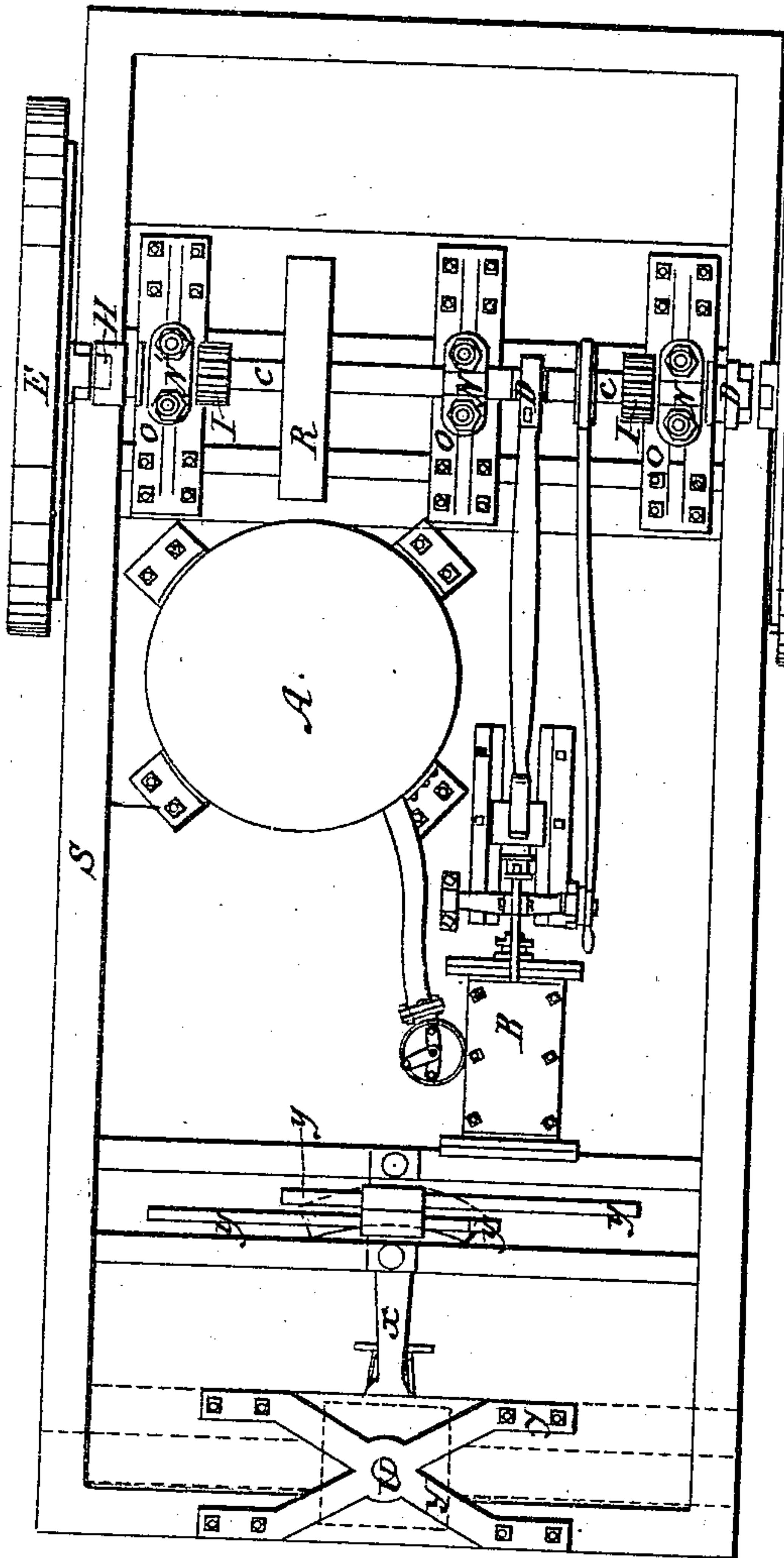
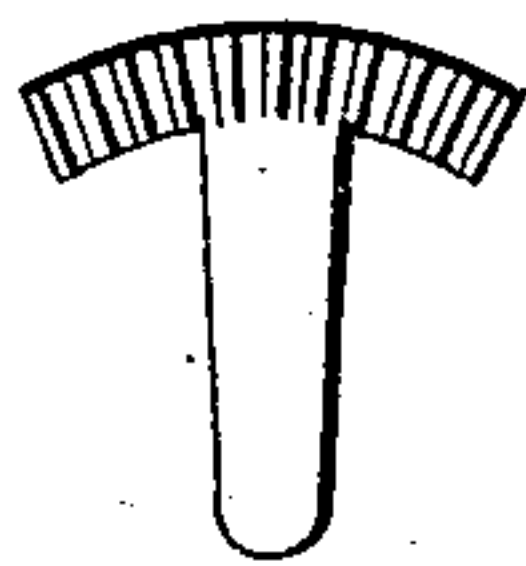
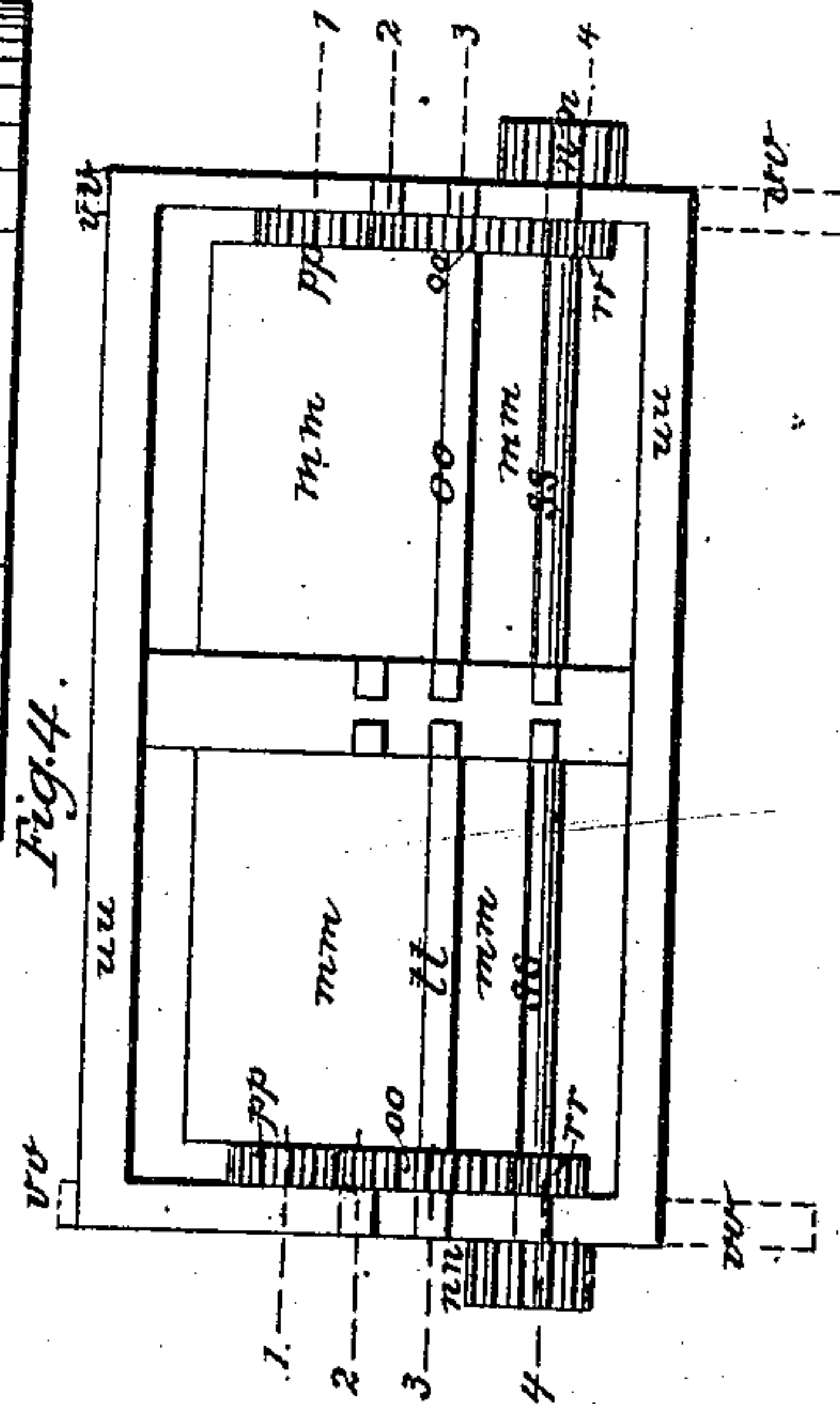


Fig. 4.



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UNITED STATES PATENT OFFICE.

L. B. WOOLFOLK, OF NASHVILLE, TENNESSEE.

IMPROVEMENT IN STEAM-PLOWS.

Specification forming part of Letters Patent No. 28,801, dated June 19, 1860.

To all whom it may concern:

Be it known that I, L. B. WOOLFOLK, of Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Steam-Plows; and I do hereby declare that the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in constructing and arranging the several parts of this machine substantially in the manner hereinafter described.

In the annexed drawings, Figure 1 represents a side elevation. Fig. 2 represents a vertical cross-section. Fig. 3 is a plan view. Fig. 4 is a plan view of a portion of the machine. Fig. 5 is a detached view of a portion of the guiding apparatus.

In the figures, S represents a frame, which is constructed in a substantial and durable manner of wood or metal, and of any suitable size.

T represents an axle, which lies across the rear of the frame, and which has its bearings in boxes secured to said frame. Secured upon this axle are two wheels, E E, which turn loose upon it. These wheels are provided with rings F, which are secured to them by bolts or otherwise, and which are provided on their internal rims with cog-gearing.

C represents a shaft, which is placed across the frame, and which is supported above it by means of standards or supports O O O, one being placed near its center, the other two being near its ends. This shaft is provided with a crank, as seen in Fig. 2, by means of which power is applied to it, being communicated from a steam-engine, which it is intended to place upon the frame. Upon the extremities of this shaft are placed two pinions, which play loosely upon it, and which gear into the teeth or cogs on the rim of the rings F F.

H H represent clutches, which are secured upon the shaft C, and which slide, but do not turn upon it. These clutches are so arranged that they will catch into the pinions G G and station them upon the shaft, so that they will revolve with said shaft, when desirable.

It will be seen that when one of the clutches H is thrown out of connection with its pinion G its wheel E will at once cease to revolve, and the other, continuing its motion, will cause the carriage to turn. The front wheel, T, revolving around the shaft U, is supported by the frame and additionally by the stanchion Y. Said wheel will readily adjust itself to any motion of the driving-wheels E E. This wheel has also another motion by its shank Z, which turns in the journal-bearing at W. The shank Z passes through W, and on its top end is fixed the lever X, having upon its other extremity a curved rack-bar, w, which is moved to the right or left by the segments of a cog-wheel, y y. This is more accurately represented in Fig. 5. Upon Z, just above the journal-bearing at W, is the oblong d, which is confined between the springs a a. These springs are fastened at one end, at c c, by bolts or otherwise, and at the other are confined by the staples b b. These springs, thus acting upon the oblong, keep the wheel T parallel with the arm W, except when worked by the lever X, when they yield and allow the wheel to be placed in a diagonal position, and thus guide the carriage; but upon the pressure being removed they again restore it to its original position. The segments y y, when not in use, lie horizontally with their handles in opposite directions, and are then entirely out of connection with the rack-bar W, and do not interfere with the free movement of the wheel T; but upon either handle being raised, its segment comes into connection with the rack, and thus moves the wheel T in any desired direction. By extending the lever X beyond the shank Z to X', when the motion of the carriage is reversed the rack W' will come under the segments y y, and the wheel T may thus be readily guided, whether the carriage be moving forward or backward.

The short shafts P P in the rear of the carriage, resting in the bearings Q Q, are designed to give the power at pleasure of communicating to either driving-wheel a slower motion. This is effected by the small pinions i i on the shaft C working into the larger pinions J J on the shafts P P. J J revolve loosely upon the shaft; but by throwing the clutches L L into

connection they communicate motion to the pinions M M on the shafts P P, and thence through the loose pinions to the cog-wheels F F.

The clutches L L are not to be thrown in gear, except when the clutches H H are out of gear. This is arranged by means of the levers which work the clutches, and which are not here represented.

The friction-wheels *m m*, resting in the frame *u u*, are moved forward by the system of cog-wheels seen in the drawings, Figs. 1, 2, and 4, and deriving their motion from the cog-wheels F F. Their forward motion is the same as that of the driving-wheels E E, and they are used to increase traction. When not needed for the purposes of traction they may be readily removed.

The grooved pulley D' turns loose upon the shaft C, except when held by the clutch *c'*. A rope passed around this pulley is used for elevating the plows. By holding the forward end of the rope and throwing the clutch into gear the plows are raised, when, the forward end of the rope being fastened, the clutch is thrown out and the plows remain suspended.

K is the plow-frame, working as seen in the drawings, playing upon a strong hinge, and being elevated by a rope, as already mentioned, working over the pulley D'.

The ease with which this machine is guided

and turned is one of its great advantages. Its course may be changed by means of the caster-wheel T, worked by the rack *w*; or it may be made to turn by changing the clutches upon the shaft C.

Having thus fully described this my invention, I claim—

1. The arrangement of the shaft C, the loose pinions G G, and the clutches H H with the driving-wheels E E, the whole being constructed and arranged substantially as herein described.

2. The arrangement of the wheel T, having its axis out of line of attachment to the frame S, in the journal at U, so as to answer and adjust itself to the movements of the driving-wheels, substantially as set forth.

3. The employment of the wheel T, having its shank Z turning loosely in the journal-box at W, and provided with an oblong, *d*, confined between the springs *a a*, in combination with the lever X, the rack-bar W, and the segments Y Y, substantially as set forth.

4. The arrangement of the friction-wheels *m m*, and the shafts *s s t t* with the driving-wheels E E and shaft C, substantially as represented.

L. B. WOOLFOLK.

Witnesses:

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