J. FOWLER, Jr.

Steam-Plow.

No. { 1,022, / 32,026. }

Patented Apr. 9, 1861.

Fig. 1.

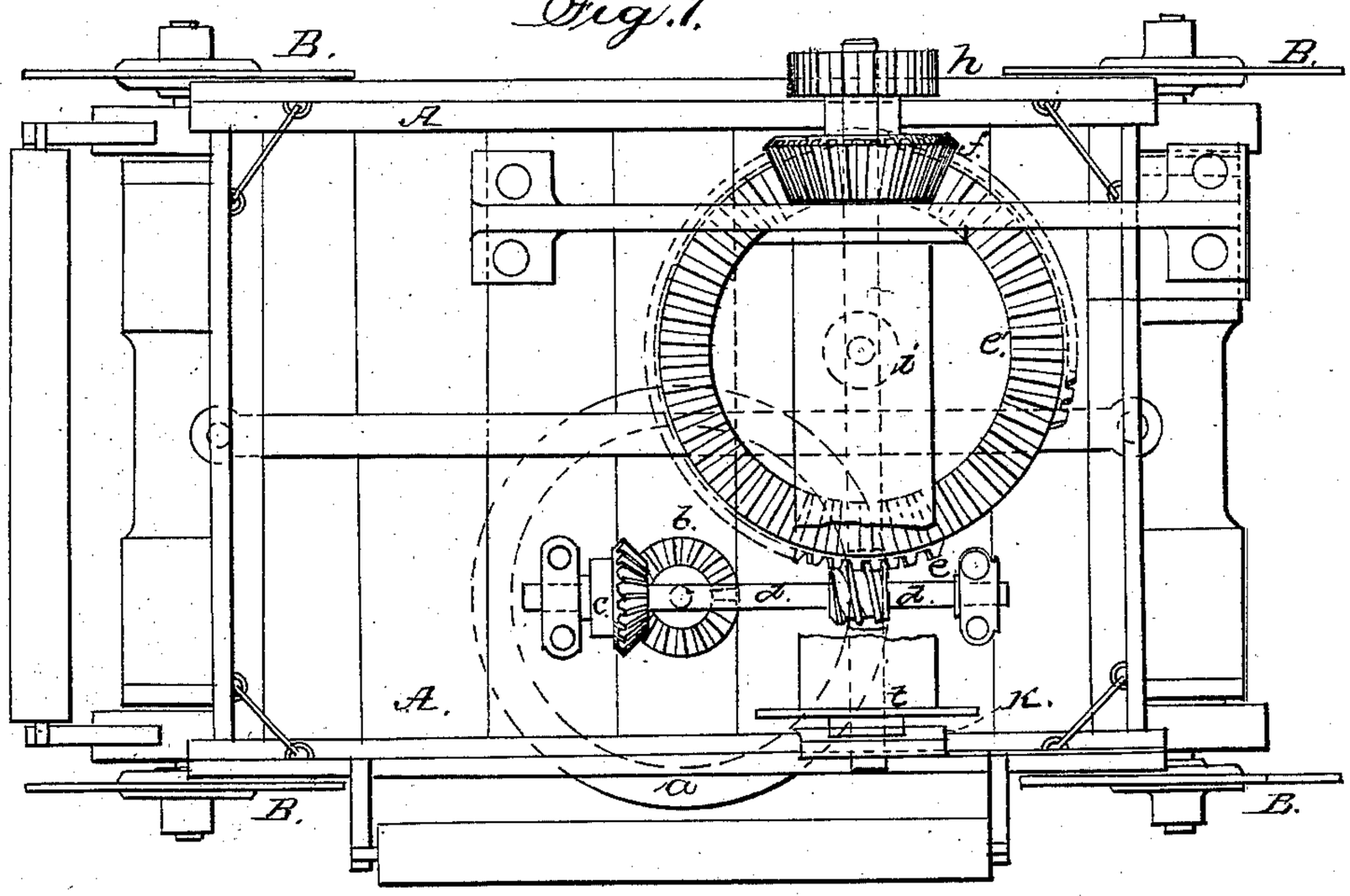
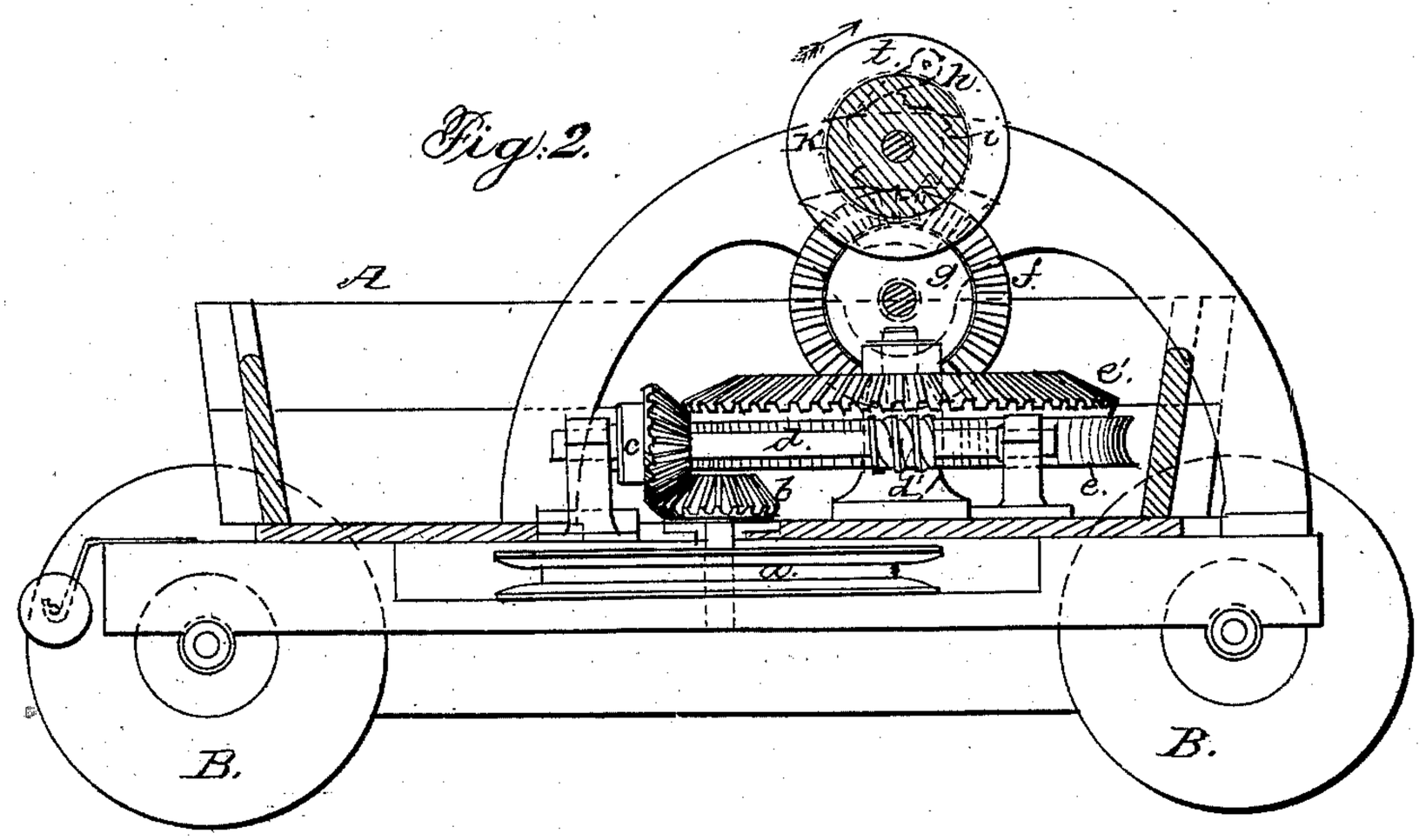


Fig. 2.



WITNESSES:

Thos. Gregg

William W. Hemp.

INVENTOR

J. Fowler Jr.

UNITED STATES PATENT OFFICE.

JOHN FOWLER, JR., OF HAVERING, ENGLAND, ASSIGNOR TO WM. PENN TATHAM.

IMPROVEMENT IN MACHINERY FOR PLOWING AND TILLING LAND BY STEAM.

Specification forming part of Letters Patent No. **32,026,** dated April 9, 1861.

To all whom it may concern:

Be it known that I, JOHN FOWLER, Jr., of Havering, in the county of Essex, England, have invented a new and useful Improvement in Machinery for Plowing and Tilling Land by Steam; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan, and Fig. 2 a longitudinal vertical section.

The same letters indicate like parts in both the figures.

My said invention relates to that class of machinery for plowing and tilling land by steam in which a locomotive steam-engine moves at given intervals along one edge of the field, and ropes pass from the engine to and around a pulley in a carriage termed an "anchor," which is moved at intervals along the opposite edge of the field, the said ropes from the engine being attached to plows or other tilling instruments to draw them across the field alternately in opposite direction.

Prior to my said invention the anchor-carriage was moved at intervals by manual power; and the object of my said invention is to impart this motion by the power of the engine at the opposite side of the field by combining with the pulley on the anchor-carriage around which the rope passes to operate the plows or other instruments, and with the drum or capstan of a rope or chain connected with an anchor secured in the ground some distance ahead of the anchor-carriage, an interposed mechanism to operate the said drum or capstan at the required intervals to advance the anchor-carriage by the motion of the pulley derived from the engine.

In the accompanying drawings, A represents what is termed the "anchor-carriage," mounted on four wheels, B, made sufficiently thin at the periphery to cut into the land to present the required resistance to the lateral pull in drawing the plows or other implements across the field. In this carriage there is a grooved pulley, *a*, around which the rope from the engine is to pass. The shaft of the pulley *a* carries a bevel-pinion, *b*, which engages a corresponding bevel-pinion, *c*, on a horizontal shaft, *d*, which carries a worm, *d'*, the threads of which engage the cogs of a horizontal worm-wheel, *e;* and this worm-wheel is provided with bevel-cogs *e'* to impart motion by another bevel-wheel, *f*, to a horizontal shaft, which carries a spur-wheel, *g*, that engages a spur-pinion, *h*, on the shaft of which there is mounted a drum, *i*, that is to receive and wind up a rope attached to an anchor or other fastening some distance ahead of the carriage. This drum turns freely on the shaft and carries a ratchet-hand or pawl, which takes into the teeth of a ratchet-wheel fast on the shaft of the drum, so that motion is imparted to the drum in the direction of the arrow by the ratchet-wheel acting on the ratchet-hand or pawl. In this way it will be seen that motion is communicated from the pulley *a* (impelled by the rope from the engine) to the drum *i* to wind up the anchor-rope on the drum, and thereby draw the anchor-carriage forward. It is proper that this movement should take place while the plows or other implements are traveling toward the engine, and that the anchor or carriage should be advanced during the return of the plows, &c., toward the engine. For this purpose there is only a segment of the worm-wheel *e* cogged, as represented, so that when the uncogged segment reaches the worm the movement of the carriage shall stop. By simply lifting the pawl *t* by hand the train of wheels are liberated so that they can be turned by hand when required to re-engage the wheel *e* with the worm.

And, although I have above described the mode of application which I have reduced to successful practice, I do not wish to be understood as limiting my claim of invention to such mode of application, as the required connection between the pulley impelled by the rope from the engine and the drum which winds up the anchor-rope can be effected by other and equivalent mechanical means.

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

Combining the pulley on the anchor-carriage, which receives motion from the engine by the pulling of the plows or other implements, with the drum that operates the anchor-rope by means of the intermediate mechanism herein described, or any equivalent therefor, as described, and for the purpose set forth.

JOHN FOWLER, JR.

Witnesses:

ROBT. WM. EDDISON,
ALEX. THOMSON.