J. Urmy,

Horse Power.

N°593. Patented Feb. 6, 1838.

Fig: 1.

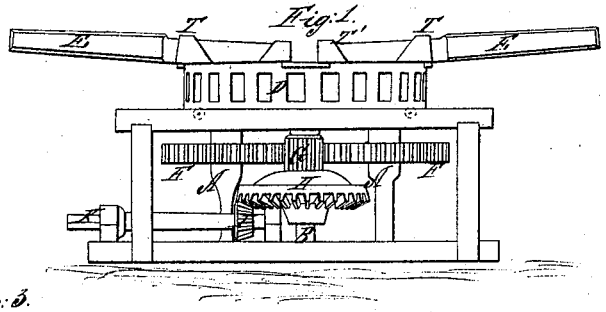


Fig: 3.

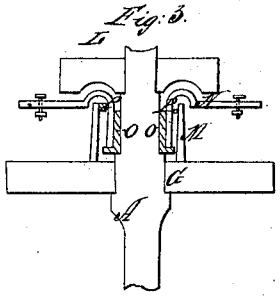


Fig: 4.

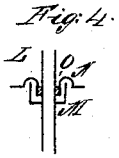
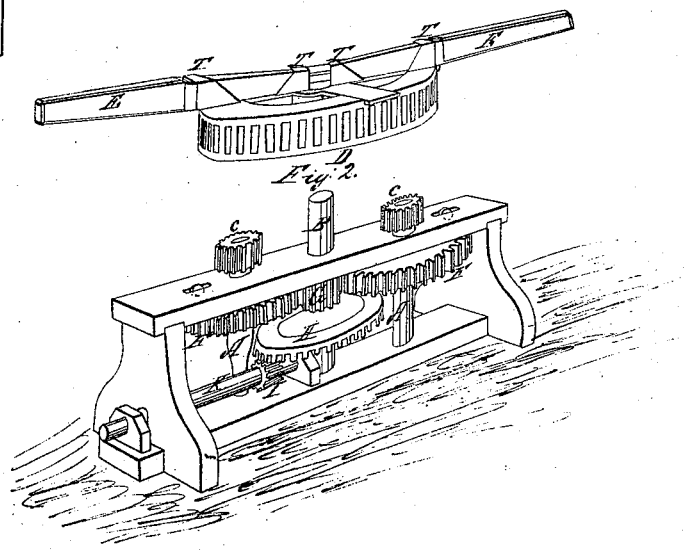


Fig: 2.



UNITED STATES PATENT OFFICE.

JESSE URMY, OF WILMINGTON, DELAWARE.

ARRANGEMENT OF GEARING FOR DRIVING MACHINERY.

Specification of Letters Patent No. 593, dated February 6, 1838.

To all whom it may concern:

Be it known that I, JESSE URMY, of Wilmington, in the county of Newcastle and State of Delaware, have invented a new and useful Improvement in the Construction of Gearing for Propelling Machinery, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

In the horse power as commonly used the vertical shaft turns in a step at the bottom of the frame and in a common metallic box at the top, with the cogs of the main driving wheel meshing into the cogs in the periphery of the wheel on said vertical shaft, thereby having a tendency to force it from its perpendicularity as well as the shaft of the main driving wheels, thus increasing friction in the box and step and having but one cog of each wheel acted upon at a time which renders the cogs very liable to be broken off.

My invention is designed to obviate these evils, and in order to effect which object I place the upright shafts A A Figures I and II, one on each side of the main shaft B, and parallel with the same. On the upper ends of said shafts I fix two horizontal pinions C C.

An open mortise wheel D is so arranged on the top of the frame that the teeth of the before described pinions C C work into the mortises of said wheel D, which causes them both to turn in the same direction, and working against a concave instead of a convex surface, which would be the case if the pinions were outside and turned against the periphery of the large wheel, three cogs will be in gear, by which proposed improvement the gearing is rendered much stronger and more effectual. This open mortise wheel D turns horizontally on anti-friction wheels or rollers arranged in the top of the frame, having sweeps or levers E inserted into shoes or trunks T constructed on the top of the wheel. By the use of these trunks bolts for securing the levers or sweeps to the mortise wheel are not required the insertion of which always tending to weaken the levers. The power for propelling the machine which will be that of animals, will be applied to the ends of these levers.

On each of the vertical pinion axles A A is a horizontal cog wheel F F working into a pinion G on the center axle B for keeping it in a vertical position without rubbing against the sides of the boxes, thus reducing the friction therein.

On the center vertical shaft is a horizontal crown wheel H working into a vertical bevel pinion I on the end of the horizontal line shaft K which revolves the driving pulley on the other end of said line shaft in the usual mode.

The vertical shafts A A are surrounded by a cup M Fig. III for containing oil fixed on the top of the pinions F F. Within this cup is a circular rim which is made of such a diameter as not to touch the oil cup or shaft but to be about in the center of the space between them, rising above the top of the cup and then turning semi-circularly over the same so as to form a curved cap to keep out the dust or dirt from the oil, it is then extended horizontally as at N, and is bolted to the top piece of the frame. Between this ring and shaft is the bushing O, which serves as the bearing for the shaft and likewise prevents the entrance of dust or dirt to the oil cup between the shaft and ring. All the vertical shafts may be surrounded by similarly constructed oil-cups.

The invention claimed by me the said JESSE URMY and which I desire to secure by Letters Patent consists in—

The arrangement of the open mortise wheel for turning the two pinions placed inside the same in one direction, both acting on the center pinion on the center shaft by means of the cog wheels on the pinion shaft as before described.

JESSE URMY.

Witnesses:
THOMAS C. SMITH,
W. MCCAULLEY.