J. Kelly,

Horse Power,

No. 2,480, Patented Mar. 4, 1842.

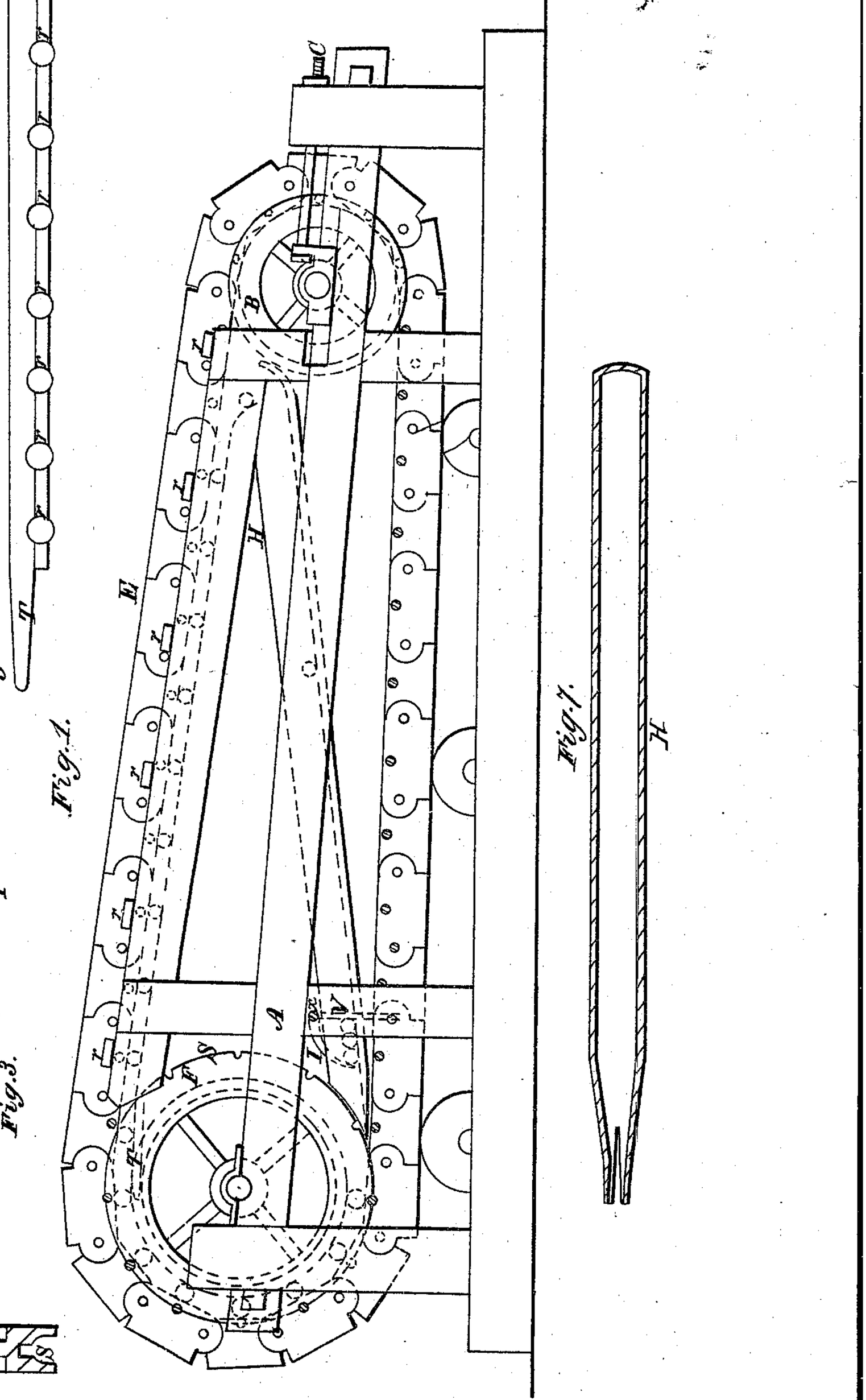

Fig. 6.

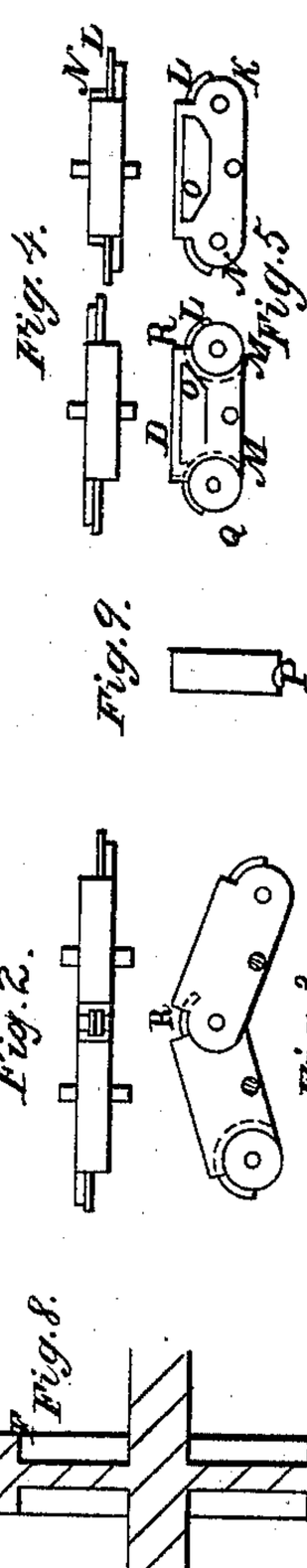

Fig. 4. Fig. 5.

Fig. 1.

Fig. 7.

Fig. 2.

Fig. 3.

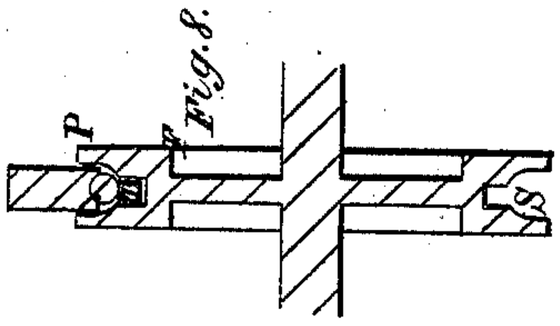

Fig. 8.

UNITED STATES PATENT OFFICE.

JOHN KELLY, OF LEWISTOWN, PENNSYLVANIA.

ENDLESS-CHAIN HORSE-POWER.

Specification of Letters Patent No. 2,480, dated March 4, 1842.

To all whom it may concern:

Be it known that I, JOHN KELLY, of Lewistown, Mifflin county, State of Pennsylvania, have invented a new and useful Improvement in the Construction of the Endless Revolving-Platform Horse-Power, which is described as follows, reference being had to the annexed drawings of the same making part of this specification.

Figure 1 is a side elevation of the horse power; Fig. 2 edge view of the part of the chain; Fig. 3 side view of ditto; Fig. 4 edge view of two parts of the chain separated; Fig. 5 side view of ditto; Fig. 6 the conductor for the balls; Fig. 7 view of the trough for the balls; Fig. 8 section of driving wheel showing grooves therein; Fig. 9 transverse section of one of the pieces of the chain.

Similar letters refer to corresponding parts.

The frame A, wheel B, screw C, slats D are made in the usual manner.

The improvements are principally in the construction of the chain E, driving wheel F, conductor G, trough H, and drop I.

Each part of the chain, half its width next the wheel, is made semi-circular and halved at the ends so as to lap over the corresponding ends of the adjoining parts which are halved on the opposite side thereof with a quadrant tongue on each semi-circular end which fits into a corresponding quadrant groove or mortise in the next adjoining or connecting part of the chain—there being a tongue and groove thus shaped on each end of each piece of the chain on a circle described from a point in the center of the said circle where is cast a round ear or pin which fits into a corresponding round aperture in the center of the circle of the next connecting part of the chain. The upper portion of the parts of the chain are cast square forming shoulders which come against each other when the chain is in its inclined straight position. The edges of the parts next the wheel are cast concave to admit the balls hereafter described. An aperture corresponding in shape with that of the end of the slat is left or cast in each piece of the chain to receive said end of the slat which is secured firmly therein. Two ears or pins are cast on each part of the chain—one on either side, to correspond with notches or depressions in the rim of the driving wheel on each side of the channel around the same into which notches said pins fit and by which the wheel is propelled. The aforesaid quadrant tongues and grooves serve to hold the parts of the chain together in conjunction with the pins and apertures to prevent them from having any lateral movement. And when the parts are to be put together or taken apart for any purpose whatever this construction renders the operation quite easy, simple and expeditious. And when a slat is required to be repaired or renewed it is not necessary to disturb the other parts, but only to remove the two parts into which the said slat is to be inserted which is done by simply slackening the chain (effected by means of the horizontal screw attached to the box of the small wheel) and bringing the slats at an angle of about 110 degrees with each other, in which position the tongue will leave the mortise and then by a slight lateral movement the pins of one piece will leave the apertures in the other and the two parts will then be separated. And in putting the parts together the pins are first inserted into the apertures—then turned vertically on said pins which will bring the quadrant tongue into the quadrant grooves and thus the parts will again be united which is the work of a moment only—there being no rivets, screws, keys or permanent fastenings to render the connection expensive and difficult.

K are the semi-circular ends before described; L quadrant tongues on ditto; M quadrant grooves on the same circle of the tongues shown by dotted lines; N pins at the center of the circle; Q apertures for the pins; O openings to admit the ends of the slats; P concave edges to admit the balls; R shoulders.

The chain, when completed, is part around the driving wheel F and the small sustaining wheel B and tightened by screws C. It is prevented from having any lateral movement by anti-friction rollers *r* arranged in the frame. The driving wheel F is made concave on its periphery corresponding with the convexity of the balls which are drawn between said concave surface of the wheel—and the concave part of the chain for the purpose of reducing friction.

In the bottom of the concavity of the periphery of said wheel is formed a channel *s* around the wheel to admit a tongue

T on the end of the conductor G which lies therein for the purpose of more gradually conducting the balls from the wheel to the trough. The edges of the wheel are notched to admit the ears or pins on the sides of the chain by which the chain causes the wheel to revolve. The power is conveyed from the axle of this wheel to the machine required to be propelled thereby. The endless platform is moved in the usual manner by horses or other animals walking thereon. The conductor G inclines down from the top of the propelling wheel at an angle of about ten degrees.

The trough H which is made deeper than the conductor, extends down in an opposite direction from the lower end of the conductor to the bottom of the propelling wheel near which is arranged a drop or shutter I for regulating the descent of the balls which drop turns on an axle *x* in the frame A having an arm V or lever which is struck by the ears or pins on the chain—trips the drop or raises it and suffers the balls to descend and pass to the wheel F. The trough is supported in the frame by any suitable and convenient frame work. Its lower end is curved and forked for the purpose of delivering the balls more freely to the wheel. There should be a ball between each link and the driving wheel while passing around said driving wheel and also a ball between each part of the chain and the conductor while passing over the said conductors.

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

1. The constructing the links of the chain with the tongues and grooves in the manner and for the purpose set forth.

2. The method of applying a continuous row of balls under the chain by means of the conductor in combination with the trough as described for reducing friction.

3. The arrangement of the drop or shutter in combination with the trough for regulating the descent of the balls.

JOHN KELLY.

Witnesses:

J. R. SMITH,

WILLIAM LEWIS.