

(No Model.)

L. D. CARPENTER.

TREAD POWER.

No. 281,018.

Patented July 10, 1883.

Fig. 1.

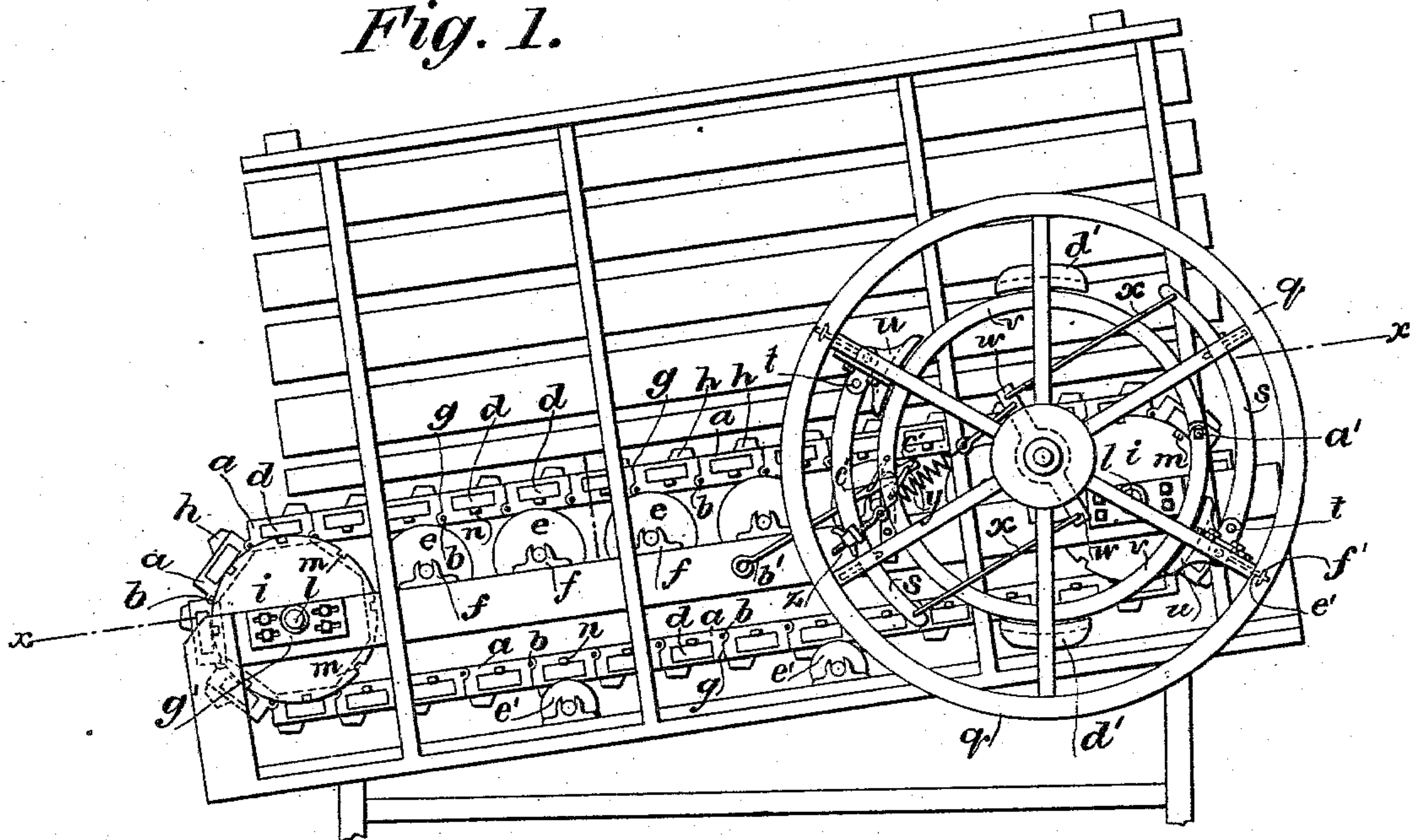
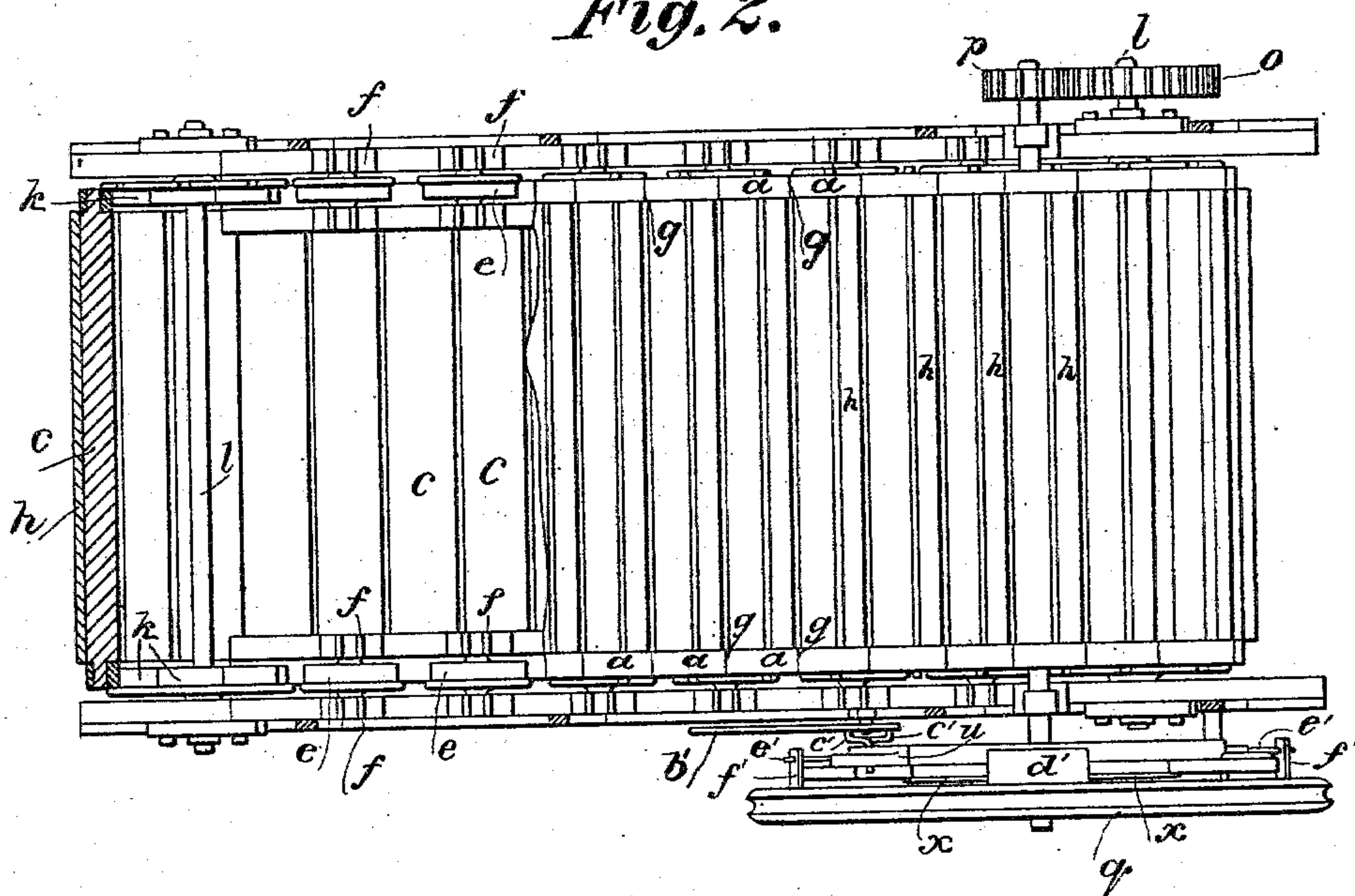


Fig. 2.



WITNESSES:

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TREAD-POWER.

SPECIFICATION forming part of Letters Patent No. 281,018, dated July 10, 1883.

Application filed April 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, LORIN D. CARPENTER, of Brush Creek, in the county of Fayette and State of Iowa, have invented a new and Improved Tread-Power, of which the following is a full, clear, and exact description.

This invention relates to the endless traveling-bridge tread-mill power apparatus, in which an endless chain of lag-bars are jointed together and made to revolve on an endless course to transmit motion from a drum around which the traveler passes.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of my improved tread-power, and Fig. 2 is a horizontal section on the line $x x$ of Fig. 1.

The endless traveler or bridge consists of cast-iron chain-links a , jointed together at b , and carrying lags c , which are connected to said links by a tenon, d , on each end fitting in a corresponding mortise in the link, two chains of links being used, one to each end of the lags and on opposite sides of the machine. The shoulders of the tenons prevent movement of the chain-links inward, and the chain-links run on carrier-wheels e , which have flanges on the outside which keep the chain-links in position against the shoulders of the tenons. These carrying-rollers are fitted to run in boxes f , attached to the frame, so that the chain-links run along on them from one to another, and in order that the rollers may be of larger than ordinary size and placed farther apart, the chain-links have abutting shoulders g above the pivot-joints, which hold the lags up level for the horse to walk on.

The lags have a rib or cleat, h , nailed on the upper surface just back of the front edge, to prevent the toe-calk, or the toe itself in case the horse is not shod, from being caught in the joint between the lags by preventing the toe from resting flat on the lags, and thus avoid the injury which sometimes occurs by the catching of the toe in the joint before it closes where the traveler rises up to the top of the upper drum, i . By this arrangement of the chains and rollers it will be seen that those rollers that sustain the weight of the horse

may be larger, stronger, and easier running than where the rollers are attached to the chains, while those below at e' may be small and less in number, and the traveler will work much easier both on account of the larger and better arrangement of the rollers, and also because of not having to move the rollers around the course.

The drums around which the traveler works consist of flanged disks i , having flat faces k corresponding in breadth to the breadth of the lags, and being fitted on shafts l , which have suitable bearings in the frame. The flanges have notches m to receive lugs on the links, which are applied for more positively imparting motion to the upper drum, from which the power is taken off at one end by the wheel o on the drum-shaft l , which extends outside of the frame, the said wheel gearing with a pinion, p , on another shaft to which the belt-pulley q is attached at the other side of the machine.

For a brake to regulate the speed of the machine I have a couple of centrifugal levers, s , pivoted at t to a couple of the arms of the fly-wheel, and having a brake-shoe, u , on the short arm to act on the friction-rim v , attached to the frame, the long arm of the levers being connected to the rocker-bar w by rods x , to which rocker one of said levers is connected by a coiled spring, y , and adjusting-screw z , which tend to keep the brakes off the rim v when the speed is not too high, but when excess of speed throws out the centrifugal levers the shoes will be pressed on the rim till the speed slows to the proper limit. The adjusting-screw z enables the tension of the spring to be regulated according to the desired speed.

For a stop device I make the rim v in two sections, jointing them together at a' , where they are also jointed to one of the posts of the frame, and connecting the opposite ends to the lever b' by short links c' , so contrived that by swinging the lever in one direction the rim will be expanding against the brake-blocks d' , rigidly attached to some of the arms of the wheel q . The brake-shoes u have a rod, e' , rigidly fixed to them and extending out to the rim of the wheel, and through a staple f' thereat to prevent the shoes from turning on the pivots by which they are connected to the levers

s, and thus prevent them from tilting against the rim *v*. The lower drum-shaft is fixed in adjustable boxes *g'* for taking up the slack from time to time.

5 It will be noticed that, by the use of the lugs *n* on the links to engage with the flanges of the upper drum for turning it, the traveler may be permitted to run slack on both drums by being held upon the lower rollers, *e'*, and
10 the same device enables the links to be made smooth on both sides for running easily on both upper and lower rollers, thus making a very easy running machine.

I propose in practice to connect the links
15 together by removable pivots *b*, to be held in place by split keys or equivalent devices, in order that the links may be readily taken out and others put in when required.

Having thus fully described my invention,
20 I claim as new and desire to secure by Letters Patent—

1. In a tread-power mechanism, the endless traveler consisting of lags *c*, fitted to the chain-links by mortises and tenons *d*, and arranged

on stationary flanged rollers, the flanges of 25 which hold the links on the tenons, and the links having shoulders *g*, arranged with relation to the pivot-joints for holding up the lags, substantially as described.

2. The combination, with the arms of a fly- 30 wheel, of the centrifugal levers *s*, pivoted at *t*, the friction-rim *v*, attached to the frame, the rocking bar *w*, connected with levers by rods *x*, and the coiled spring *y*, as and for the purpose described.

3. The combination, with the lever *b'* and 35 the wheel carrying rigid blocks *d'*, of the rim *v*, made in two sections, jointed at *a'* to one another and to a frame-post, and connected with the lever by links *c'*, as and for the purpose specified. 40

4. The brake-shoes *u*, having steady-rods *e'*, connected to the wheel-rim *q* by staples *f'*, substantially as described.

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Witnesses:

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