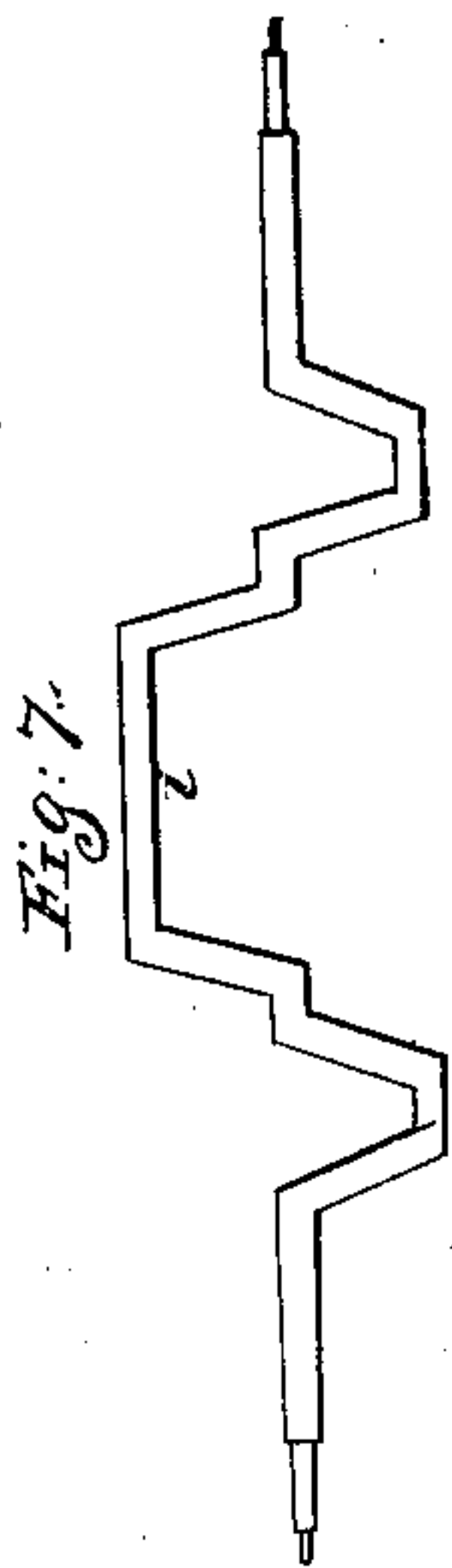
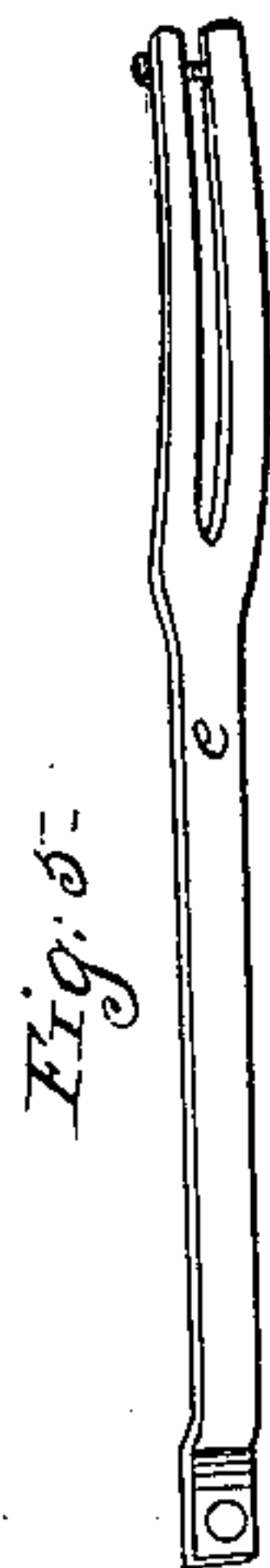
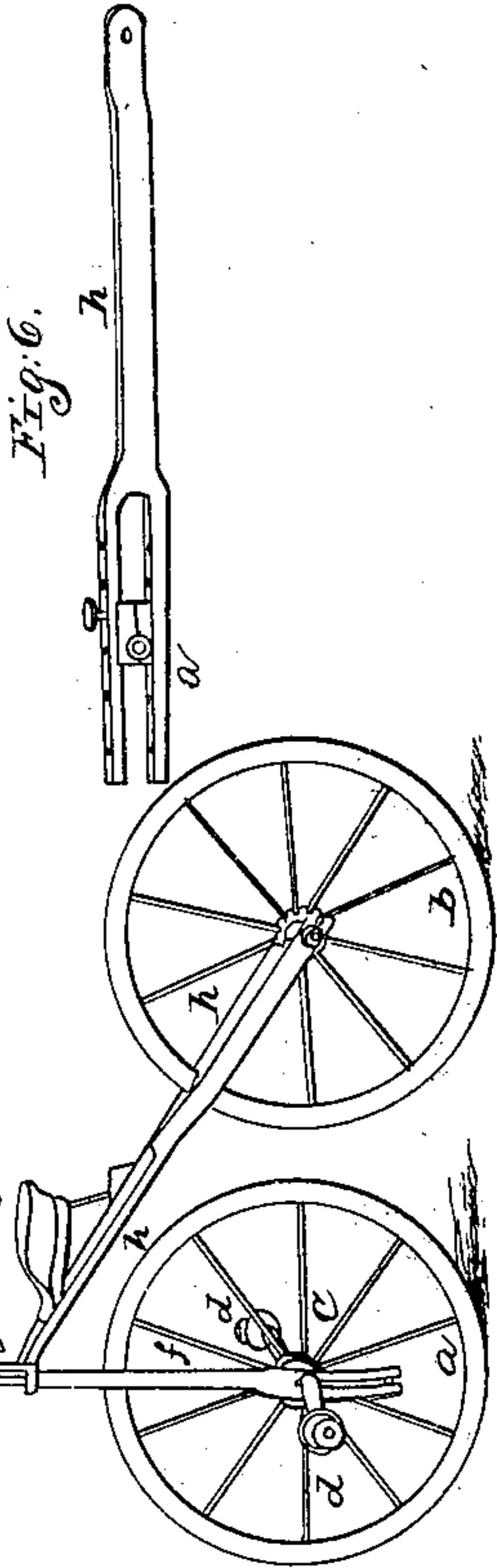
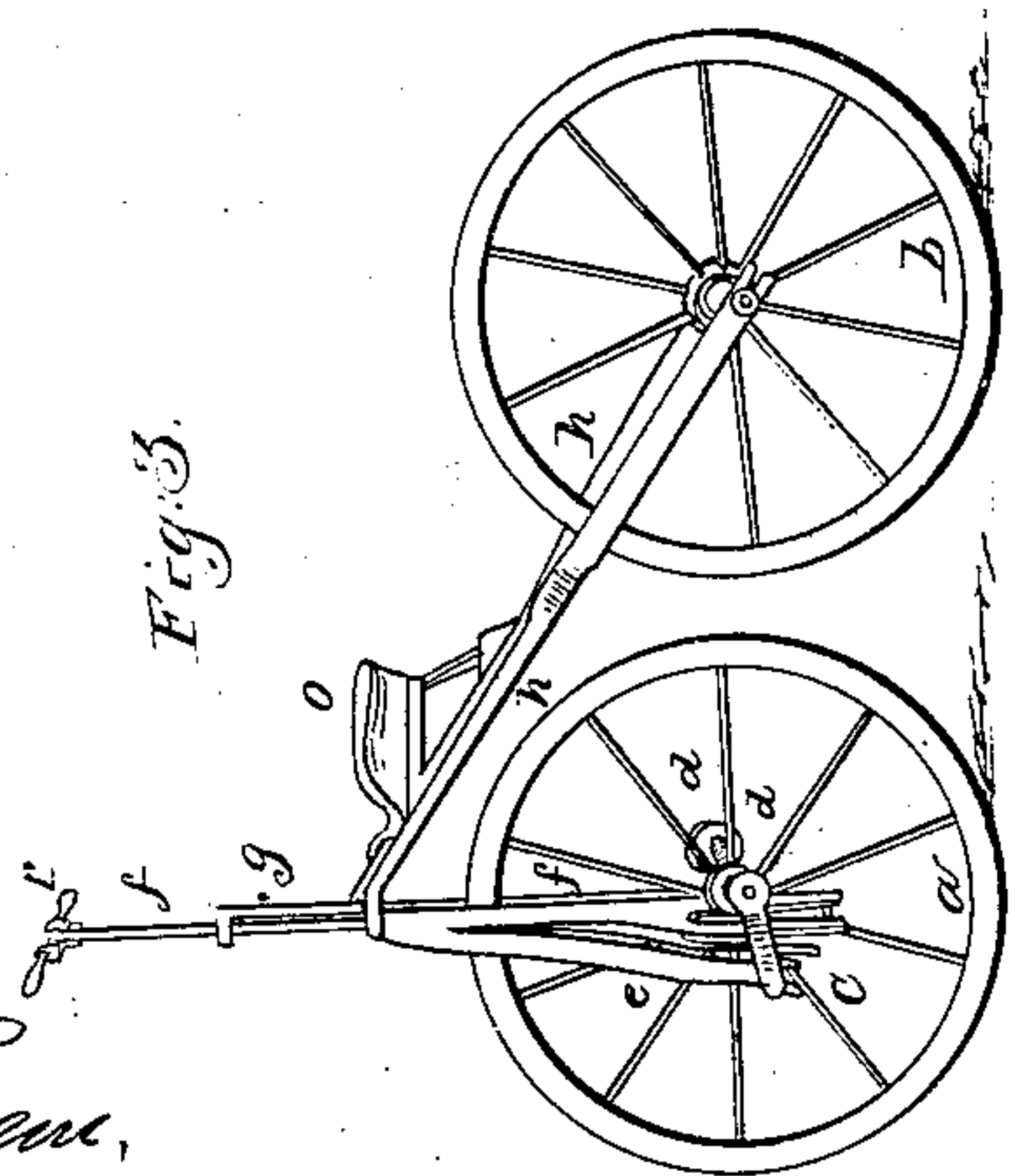
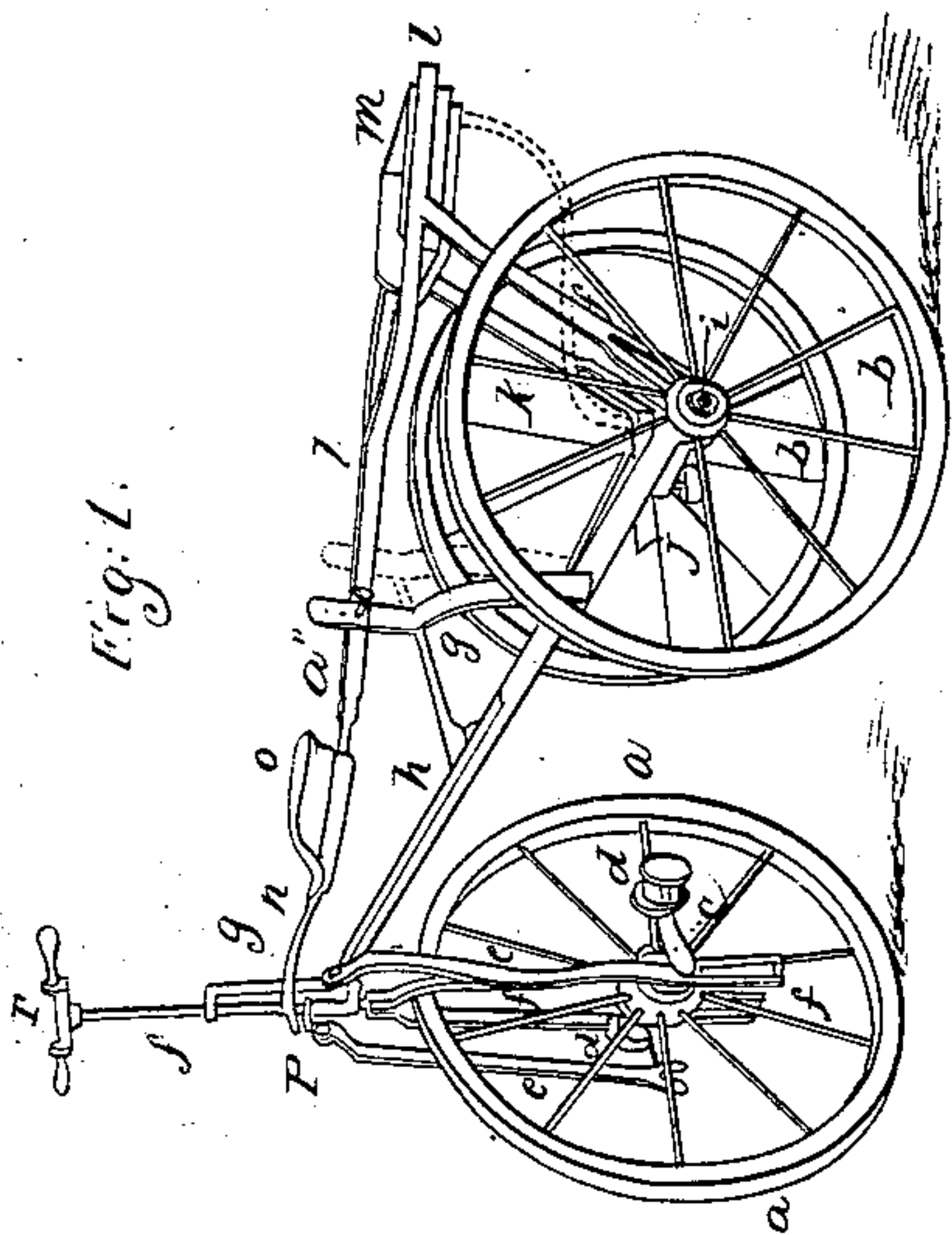
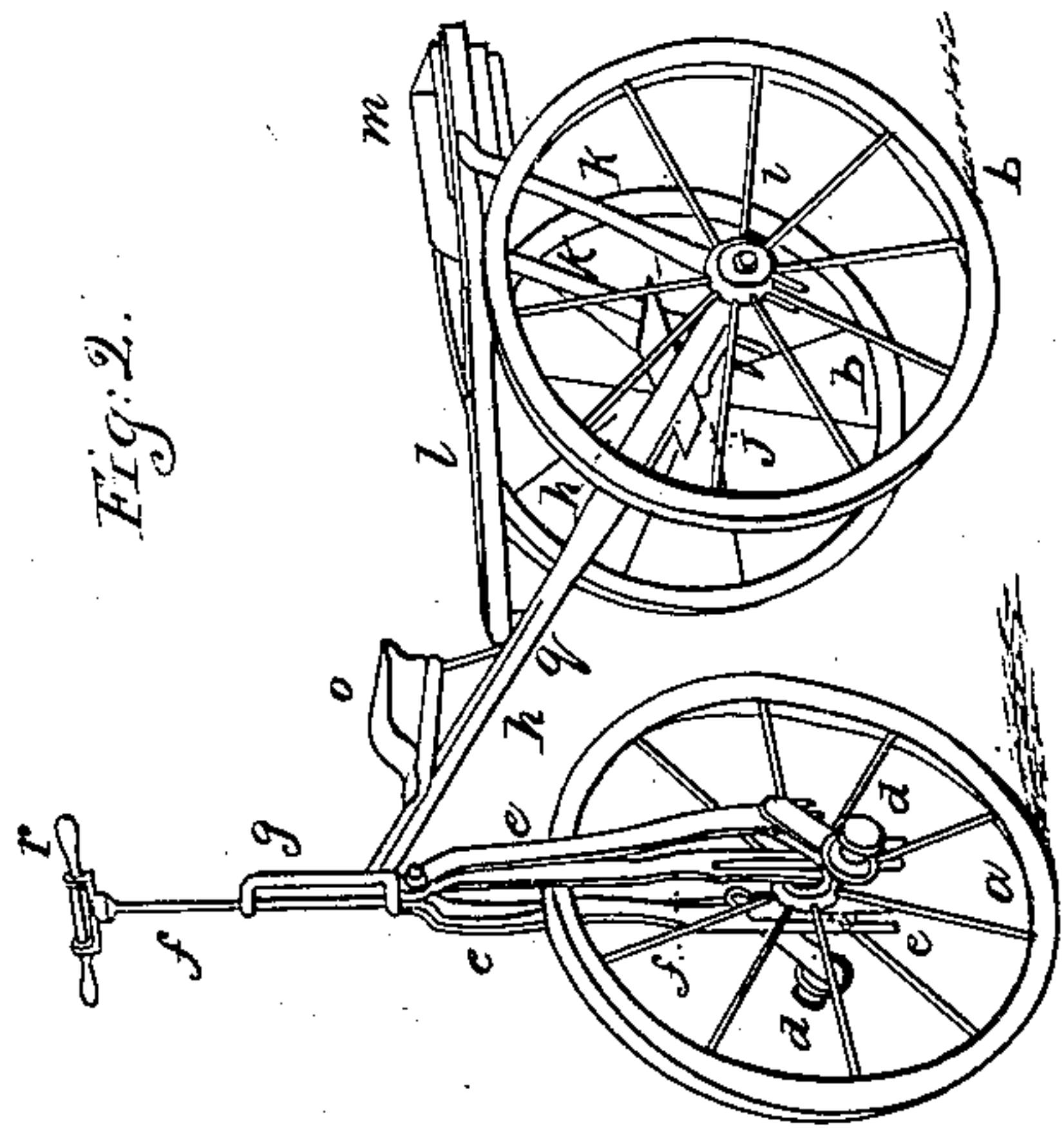


H. C. LAURENCE.
VELOCIPÈDE.

No. 89,543.

Patented Apr. 27, 1869.



WITNESSES:

R. H. Vanden
M. Clemens

INVENTOR.

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H. CLAY LAWRENCE, OF CANANDAIGUA, ASSIGNOR TO WARREN H. MOAK AND BENJAMIN JANSEN, OF BROOKLYN, NEW YORK.

Letters Patent No. 89,543, dated April 27, 1869.

IMPROVED VELOCIPEDÉ.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, H. CLAY LAWRENCE, of Canandaigua, in the county of Ontario, and State of New York, have invented a new Improvement in Velocipedes; and I do hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable others skilled in the art to which my invention appertains, to make and use the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figures 1 and 2 are perspective views.

Figures 3 and 4 are side views.

Figures 5, 6, and 7 are views of detached parts.

My invention consists in a velocipede, which is operated by the weight of the body of the rider, in connection with suitable cranks, and has certain other characteristics, as will be hereinafter more fully described.

In the drawings—

a represents the front wheel, and *b*, the hind wheels.

The front wheel is mounted on an axis, to which are secured double cranks *c*, to the outer end of which are connected the foot-rests *d*.

In the present case, I form these rests of soft rubber, so that a yielding bed is had for the feet, whereby the latter hold firmly in place, yet are not subjected to shocks, as in ordinary cases.

To the double cranks *c*, I connect pitman *e*, which may be pivoted to a cross-head, or slide, *p*, moving on the tiller-rod *f*, as in fig. 1, or to the upper end of guide-rods *f*, as seen in fig. 2.

These guide-rods form the bearings for the double crank of the front wheel, and, in connection with the tiller, are the steering-medium of the vehicle.

The lower ends of the rods are slotted, to receive the proper part of the axle of the front wheel.

h is the reach, which is forked, and its rear is supported upon the crank-shaft *i*, fig. 7, the rear wheels being mounted on said shaft.

The front end of the reach is formed with bosses, or guides, at *g*, which slide on the tiller-rod.

A standard, or support, rises from the reach, and forms a bearing for a swinging frame, *l*, whose front end is forked, and these forks play in guides of a collar, which is mounted on the tiller-rod, and moves with the cross-head, or slide, *p*.

A seat, *o*, is secured to the frame, at its forward part, and an additional seat, *m*, is hinged to its rear.

Arms *k* are pivoted to the frame, and are slotted to embrace a proper portion of the crank-shaft *i* of the rear-wheels.

On this crank-shaft I hinge a counterbalanced foot-plate, *j*, which is in line with the seat *m*.

Suitable boxes *a* are placed in the slots of arms *k*, (see fig. 6,) for a well-known purpose.

The swinging frame *l* is constructed in sections, as

at *a'*, whereby it may be hinged to the collar on the tiller-rod *f*, or to the reach, as at *q*.

In the latter case, the seat *o* is secured directly to reach *h*.

The tiller *r* is constructed and operated in any well-known manner.

The various parts should be adjusted to conform to persons of different size.

When the parts are in position, as in fig. 1, and the operators have taken their seats, the hind person bears upon the foot-rests, or plate, and thus starts the vehicle, which is at once assisted by the weight of the forward rider, who then likewise operates the front cranks. Now the rear rider (having meanwhile been elevated) descends, and his weight acts on the rear wheels.

This operation continues as long as desired, both parties, of course, operating their respective cranks, in which they are alternately assisted by their own weight.

Fig. 2 shows the front portion of the frame *l* removed.

In this case, the wheels operate independently of each other, and the axles of the wheel slide in the slots of the guides *f*, the pitman being secured directly to the upper end of the guide-arm.

Fig. 3 shows the mode of converting my velocipede into a two-wheeler.

The operation of the cranks in this case, is similar to that in fig. 2.

Fig. 4 shows the pitman, rods, or arms *e* removed, as also the outer crank of the double cranks.

In this case the foot-rests are secured to the single remaining cranks, which have a firm bearing for rotation at the top of the slot.

Having thus described my invention,

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

1. The rising and falling seats *o m*, in connection with cranks for operating a velocipedé, by the assistance of the rider's weight, substantially as described.

2. In combination therewith, the slotted guide-rods *f*, for the purpose described.

3. The double cranks *c*, in combination with the pitman-rods *e*, and the slotted guide-rod *f*, substantially as and for the purpose described.

4. The double cranks *c*, in combination with the rising and falling frame *l*, substantially as described.

5. The double cranks *c*, in combination with the rising and falling reach, substantially as described.

To the above specification, I have signed my name this 6th day of March, 1869.

H. CLAY LAWRENCE.

Witnesses:

JOHN A. WEIDERSHEIM,

GEO. W. ROTHWELL.