

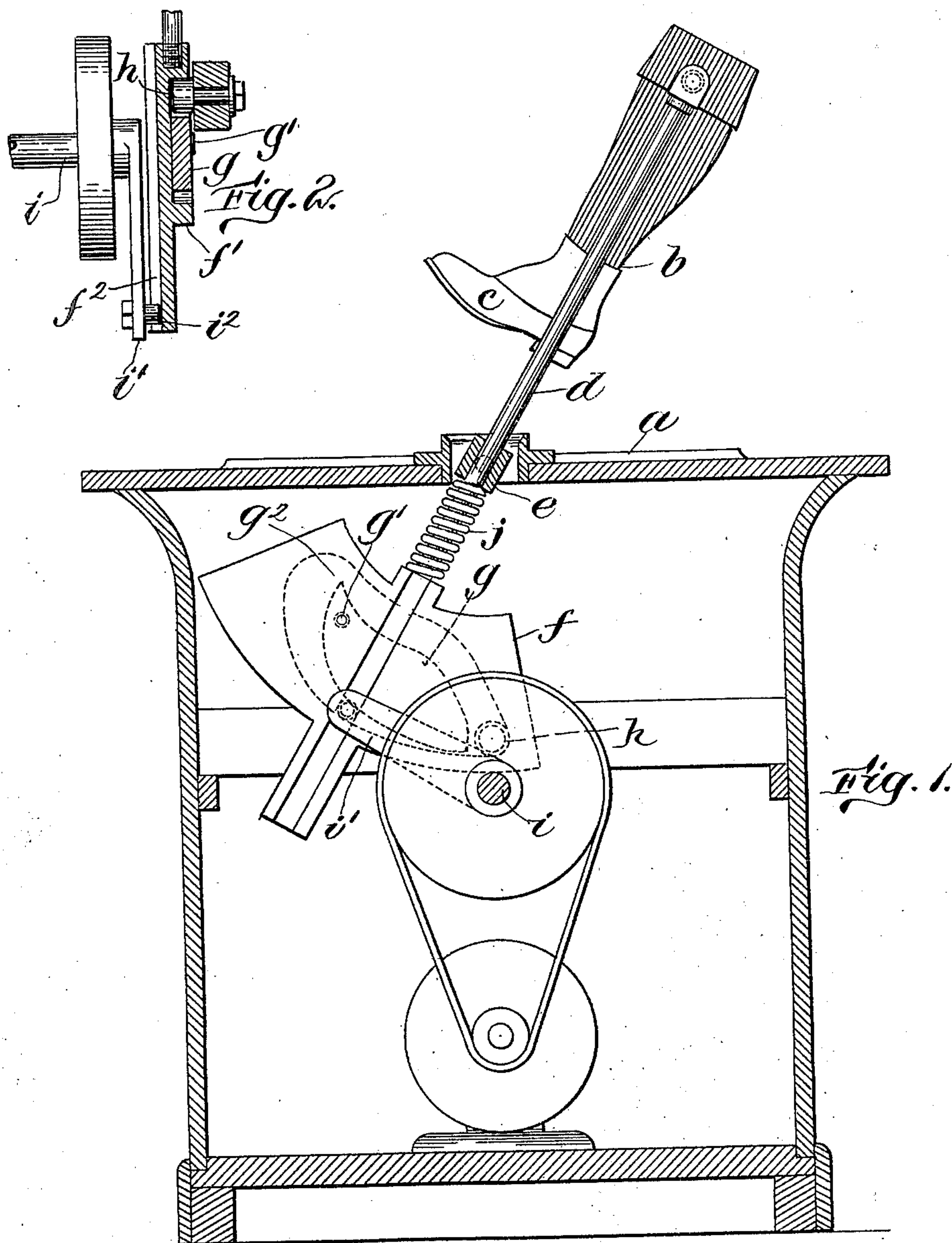
No. 674,970.

Patented May 28, 1901.

M. A. KENNEDY.
EXHIBITING DEVICE.

(Application filed Sept. 14, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

MICHAEL A. KENNEDY, OF BOSTON, MASSACHUSETTS.

EXHIBITING DEVICE.

SPECIFICATION forming part of Letters Patent No. 674,970, dated May 28, 1901.

Application filed September 14, 1900. Serial No. 30,054. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL A. KENNEDY, a British subject, and a resident of Boston, county of Suffolk, Massachusetts, have invented certain new and useful Improvements in Exhibiting Devices, of which the following is a specification.

This invention is intended to provide an exhibiting device by which the movements of the human foot in walking are closely simulated for the purpose of illustrating the action and effects produced in the shoe worn by the person walking, and more particularly in that class of shoes in which a collapsible sole is employed to cushion or ventilate the shoe, an example of which is shown in United States Patent No. 616,112, dated December 20, 1898.

The principle of my invention may be embodied in a great variety of ways. I have already filed an application for a United States patent, Serial No. 2,094, dated January 20, 1900, which application has resulted in Patent No. 658,547, granted me on September 25, 1900, covering another mode of embodying this invention, which differs from the device herein shown and described both in the operating mechanism employed and in the use of a movable instead of a stationary tread upon which the sole of the foot is made to bear.

In its general features the invention comprises a foot-form adapted to receive a shoe, means for supporting said foot-form above a floor or platform, combined with mechanism for imparting to said foot-form such movements as cause it to simulate the movements of the human foot walking on said floor, whereby the action or effect produced in a shoe on the foot of a person walking is substantially reproduced.

In the accompanying drawings I have illustrated a simple and convenient device embodying my invention.

Figure 1 is a side elevation of the complete device. Fig. 2 is a vertical section of the operating mechanism, taken on a plane at right angles to the plane of Fig. 1.

I will now describe in detail the form of my invention shown in the drawings.

For convenience I provide my device with a suitable box or casing, the top of which

forms the floor or platform *a* upon which the walking is to take place. Supported above the platform is a foot-form or last *b*, upon which is placed the shoe *c* whose action is to be exhibited. It will of course be understood that to show the working of the interior parts of the shoe it would be necessary to cut away a portion of the upper and of the sole of the shoe, while if it were desired to show only the action of the outer sole this would not be necessary. In this case the leg of the foot-form is secured to a supporting-standard *d*, which is mounted in a pivoted bearing-sleeve *e*, the pivotal movement of which permits the standard to have an oscillatory movement, while leaving said standard free to slide longitudinally through said bearing-sleeve.

The movements of the foot which this device is constructed to secure are, first, the downward movement, by which the heel of the foot is brought in contact with the floor *a*, then a rocking movement of the foot upon the platform from heel to toe, and, lastly, the raising of the foot to the position from which it started to descend upon the platform. In this form of my invention these movements are all secured by the combined motion imparted to the supporting-standard *d*. To the lower end of the standard *d* is secured a cam-plate *f*, provided with a suitable cam rib or face *f'* on one side and on its opposite side with a groove or channel *f''*, extending in the direction of the length of the standard *d*. Inside the rib or wall *f'* is mounted the cam *g*, which is pivoted near one extreme, as shown at *g'*. The periphery of this cam corresponds approximately to the configuration of the cam rib or wall *f'*, and thus forms in connection with said rib a way or groove adapted to receive a cam pin or roller *h*, secured to the frame of the device, which cam pin or roller always remains in the same position. It will be apparent that if the cam-plate *f* be swung toward the right of the position shown in Fig. 1 of the drawings there will be imparted to said cam-plate, by reason of the engagement of the stationary cam-roller *h* with the periphery of the pivoted cam *g*, a downward movement, since the cam *g*, owing to its shape, must necessarily travel below the roller *h*, which it engages as it swings toward the

right. This downward movement of the cam-plate causes the supporting-standard d to slide downward through its bearing, all the parts being so coördinated that this movement brings the heel of the shoe in contact with the floor a . The outline of the cam-plate across its top is such that the foot is held in contact with the floor a while the swinging movement of the cam-plate and of the standard d continues, so that a simple oscillatory movement is imparted to the standard d with practically little or no longitudinal movement in its bearing, so that the foot is rocked on the floor from heel to toe, just as the human foot is rocked from heel to toe in walking across the floor.

As shown, the pivoted cam g is provided with a projecting end or horn g^2 of such shape as to cause it to be slightly depressed by the cam-roller h in order that said cam-roller may pass by the end thereof. As soon as the point g^2 has passed to the right of the cam-roller the cam g falls back into place, thus raising the point g^2 to the position which it occupied before the roller passed over it, and thus causing this projecting point g^2 to prevent the return of the cam-plate except in a path which causes the pivoted cam to travel above the cam-roller on its return, so that the cam-roller on the return movement engages the lower face of the pivoted cam. A somewhat similar action takes place when the cam-plate reaches its extreme position to the left of the cam-roller h , in which position, as shown in Fig. 1, the cam-plate is prevented from moving to the right except in the path which causes it to travel beneath the stationary cam-roller h .

From the foregoing description it will be clear that when the cam-plate is in its extreme position to the left of the roller h , ready to begin its swing toward the right, the first movement of the standard d is a compound oscillating longitudinal movement. In the middle portion of its swing the movement of the standard is mainly a simple oscillatory movement. When the cam-plate has reached the extreme position to the right of the roller h , the first part of its movement is a combined oscillatory longitudinal movement; but in this case the longitudinal movement is upward instead of downward, thus causing the foot-form to be raised from the floor a . This swinging movement of the cam-plate may be produced in various ways; but I have here shown the movement produced by means of a crank-shaft i , carrying a crank arm or lever i' , to which is secured a cam pin or roller i^2 , which engages a radial groove f^2 in the cam-plate, so that as the crank-shaft rotates its crank-arm produces an oscillatory or swinging movement of the cam-plate to and fro.

In order to overcome any looseness in the parts, which might operate to raise the foot from contact with the floor during the rocking movement from heel to toe, I provide a

suitable tension device, such as a spring j , which serves to normally press the foot against the floor a during this part of the movement, while still permitting the foot to be raised from the floor by the positive operation of the cam.

It will of course be understood that many changes may be made in the mechanism described without departing from the principle of my invention.

Without attempting to set forth the manifold changes in form, construction, and arrangement which may be made in the above-described invention and without attempting to indicate the many uses to which it may be applied, what I claim is—

1. An exhibiting device embracing in combination a foot-form adapted to receive a shoe, a platform or floor, means for moving said foot-form on said floor to simulate the action of the human foot in walking whereby the action of the shoe on the foot may be illustrated substantially as set forth.

2. In a device of the kind described, the combination of a platform or floor, a foot-form, adapted to receive a shoe, supported above said floor, means for depressing said foot-form until the heel rests upon the floor, and means for rocking said foot-form from heel to toe while keeping it pressed against the floor, in order to simulate the movement of the human foot in walking, whereby the action of the shoe on the foot may be illustrated, substantially as described.

3. In a device of the kind described the combination with a platform or floor, a foot-form, a supporting-standard therefor means for imparting movement to said standard transversely to the plane of said floor to successively press the foot-form upon and raise it from the floor, and for imparting a rocking movement to said form while it is kept in contact with the floor, substantially as described.

4. In a device of the kind described, the combination of a platform or floor, a foot-form, a standard for supporting said foot-form, means for imparting a compound longitudinal and oscillating movement to said standard, whereby the foot-form is caused to simulate the action of the human foot in walking substantially as described.

5. The combination with a platform, of a foot-form adapted to receive a shoe, a standard for supporting said form, said standard being free to move both longitudinally and about a pivotal axis, a cam-plate secured to said standard, a cam-roll arranged to engage the cam-surfaces of said cam-plate, and means for oscillating said cam-plate, whereby a compound oscillatory and longitudinal movement is imparted to the standard to cause the foot-form to simulate the movement of the human foot in walking substantially as described.

6. In a device of the class described the combination of a foot-form shaped to receive a shoe, a movable standard secured to and

supporting the foot-form and mechanism for
imparting to said foot-form through the me-
dium of its supporting-standard an oscilla-
tory movement whereby the foot is rocked
5 from heel to toe over a tread or floor, and a
lifting movement to raise the foot from the
floor in order to substantially reproduce the
movements of a human foot in walking to

illustrate the action of the shoe exhibited, sub-
stantially as described. 10

In witness whereof I have hereunto set my
hand this 31st day of August, 1900.

MICHAEL A. KENNEDY.

In presence of—

JOHN E. KENNEDY,

GEO. N. GODDARD.