

(No Model.)

F. L. PALMER.

BELT SHIFTER AND TRAINER.

No. 376,339.

Patented Jan. 10, 1888.

Fig. 1.

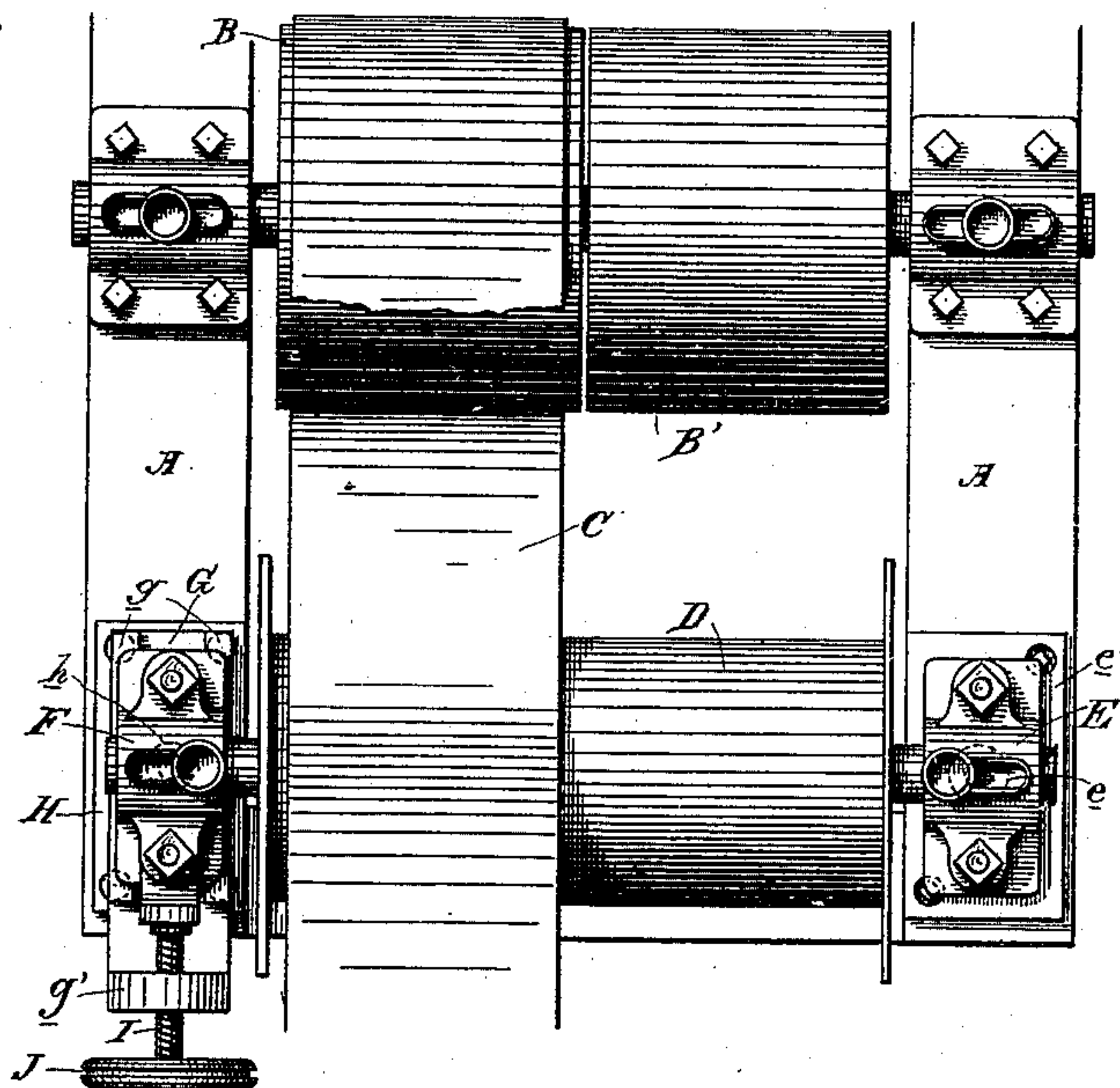


Fig. 2.

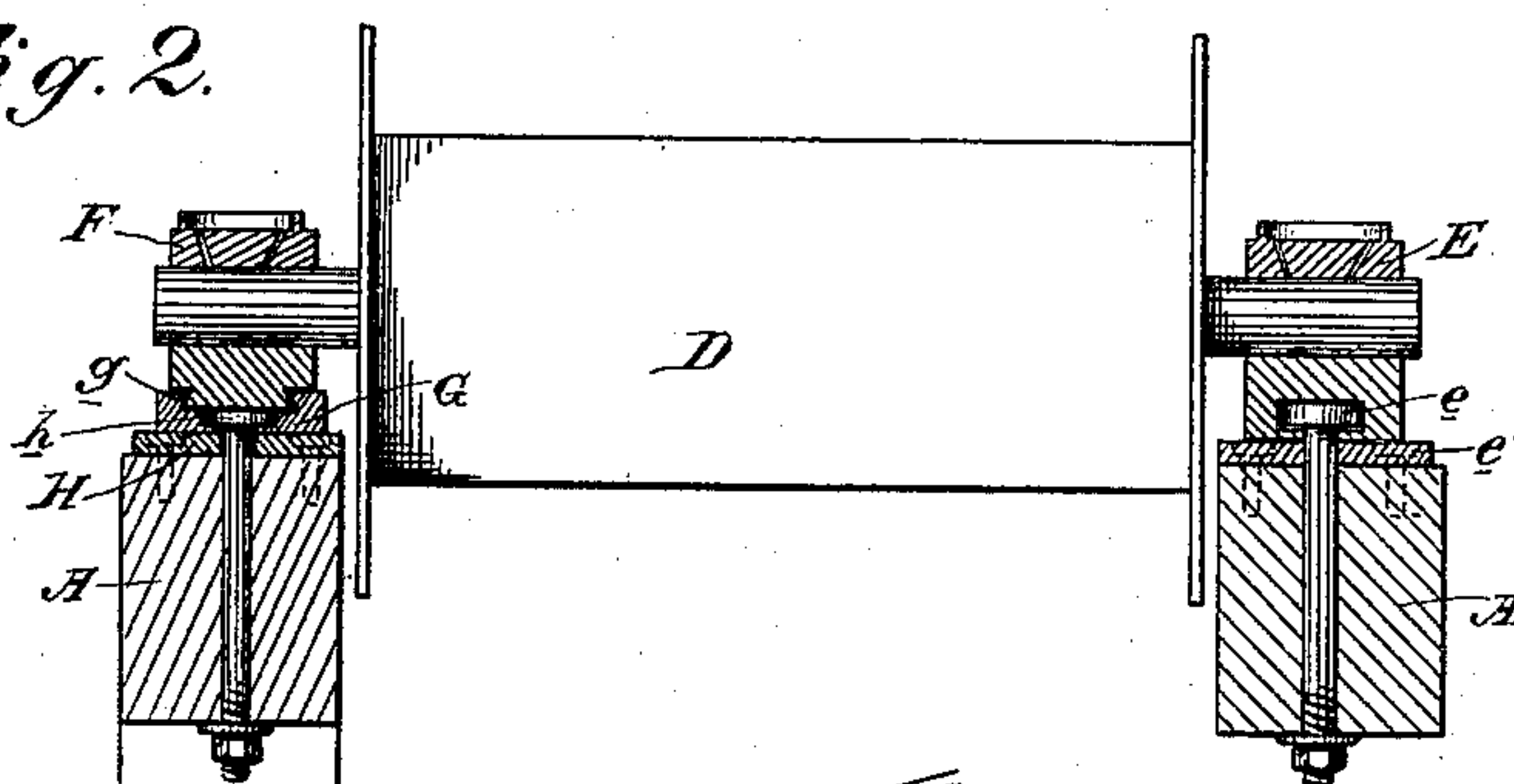
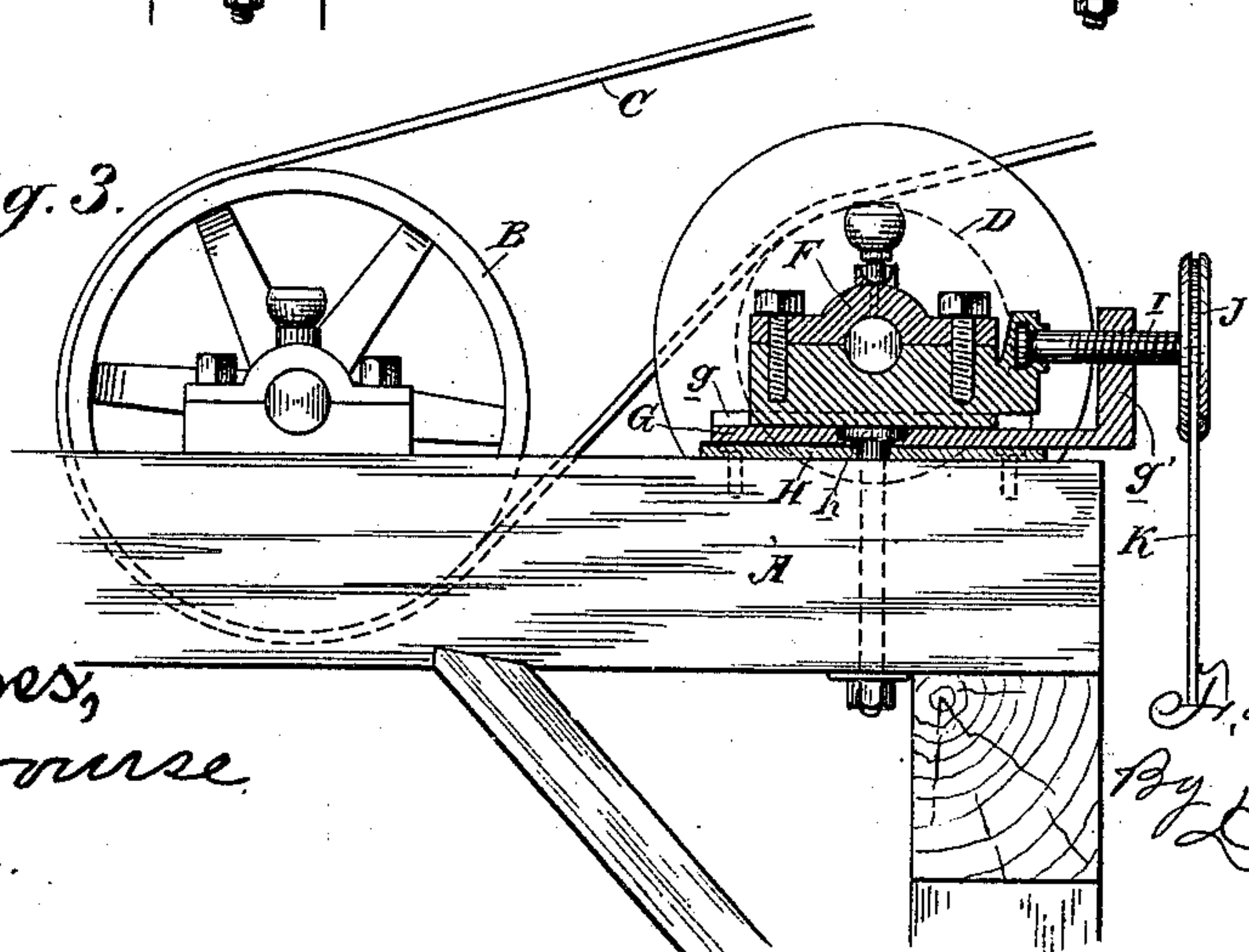


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK L. PALMER, OF BERKELEY, ASSIGNOR OF ONE-HALF TO N. CLARK & SONS, OF SAN FRANCISCO, CALIFORNIA.

BELT SHIFTER AND TRAINER.

SPECIFICATION forming part of Letters Patent No. 376,339, dated January 10, 1888.

Application filed September 6, 1887. Serial No. 248,972. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. PALMER, of Berkeley, Alameda county, State of California, have invented an Improvement in Belt Shifters and Trainers; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of apparatus or devices for shifting and training belts; and my invention consists in a roller or drum bearing against the belt and so mounted as to be turned from a position at right angles to the direction of the travel of the belt to a position inclined thereto and back again, whereby the belt may be shifted and trained.

My invention also consists in details of construction and arrangement, all of which I shall hereinafter fully describe.

The object of my invention is to provide a simple and effective belt shifter and trainer which is adapted to be readily and conveniently operated.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a plan of my belt shifter and trainer. Fig. 2 is a vertical cross-section through the boxes of the roller or drum D. Fig. 3 is a longitudinal section of box F and its connections, the remainder being shown in end elevation.

A is a frame, on which are mounted the fast and loose pulleys B B'.

C is the belt, here shown as upon the fast pulley.

D is a roller or drum having flanged ends. One end of its axis is mounted in a box which is centrally pivoted, and the other end is mounted in a box, which can slide back and forth. The former box is designated by E, and is pivoted by a bolt, *e*, upon a bed-plate, *e'*, which is itself bolted down to the sill of the main frame. The other box, F, is mounted in side guides, *g*, of a bed-plate, G, so that it may move back and forth thereon, said bed-plate being pivoted centrally by a bolt, *h*, to a protecting-plate, H, which is bolted to the sill of frame A. It will thus be seen that the box F may move back and forth on plate G without cramping, as said plate can turn on the under plate to follow the movement of the roller about the central bolt of the other box, E. The end *g'* of the bed-plate G is upturned and has an

internally threaded socket made in it, through which is fitted a screw, I, having a hand-wheel, J, on its outer end, while its inner end is swiveled in a lug on the box F.

The operation of my belt shifter and trainer is as follows: The roller D has a length a little greater than twice the width of the belt, or about the combined width of the fast and loose pulleys, and it is here shown as located under the belt and bearing up against it. When the belt is to be trained straight, the axis of the roller and the axis of the pulleys lie in parallel planes, the roller being at right angles to the direction of travel of the belt. Now, if it be desired to shift the belt over from the fast to the loose pulley the hand-wheel J is turned to the right, so that, through the screw I, the box F is moved back, in order to throw that end of the roller back, so that said roller assumes a position at an angle or inclined to the travel of the belt. The belt thereupon moves over to the right, shifting from the fast to the loose pulley, and when the operator sees that the extent of its side travel is sufficient he turns the screw back to stop its movement, and then trains it straight by bringing the roller back until its axis is parallel to that of the pulleys. To shift the belt back again, the reverse movement is had. The flanges of the roller prevent the belt from moving off. The adjustment of the roller can be nicely and accurately made and the belt shifted and trained with precision and ease.

K is a small dependent or hanging belt working on the hand-wheel J for the purpose of turning it when out of direct reach, as is generally the case.

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

1. A belt shifter and trainer consisting of a roller or drum bearing on the belt and mounted so as to be turned from a position at right angles to the travel of the belt to a position inclined thereto and back again, for the purpose described, in combination with a screw for effecting the movement of the roller or drum, substantially as herein described.

2. The belt shifting and training roller bearing on the belt, in combination with the pivoted box in which one end of the roller-axis

is mounted, the sliding box in which the other end of said axis is mounted, and the screw and hand-wheel for moving the sliding box, whereby the roller may be turned from a position at right angles to the direction of travel of the belt to a position inclined thereto, substantially as herein described.

3. The belt shifting and training roller bearing on the belt, in combination with the pivoted box in which one end of the roller-axis is mounted, the pivoted and sliding box in which the other end of said axis is mounted, the guide bed-plate in which the sliding box moves, having a threaded end, the screw swiveled in the box and threaded in the end of the

bed-plate, and the hand-wheel on the screw, substantially as herein described.

4. The main pulleys and the belt traveling over them, in combination with the roller bearing under the belt, the pivoted box at one end of the roller and the sliding box at the other end, and the screw and hand-wheel for moving the sliding box, substantially as and for the purpose herein described.

In witness whereof I have hereunto set my hand.

FRANK L. PALMER.

Witnesses:

WM. F. BOOTH,

THOS. Y. TALLMAN.