

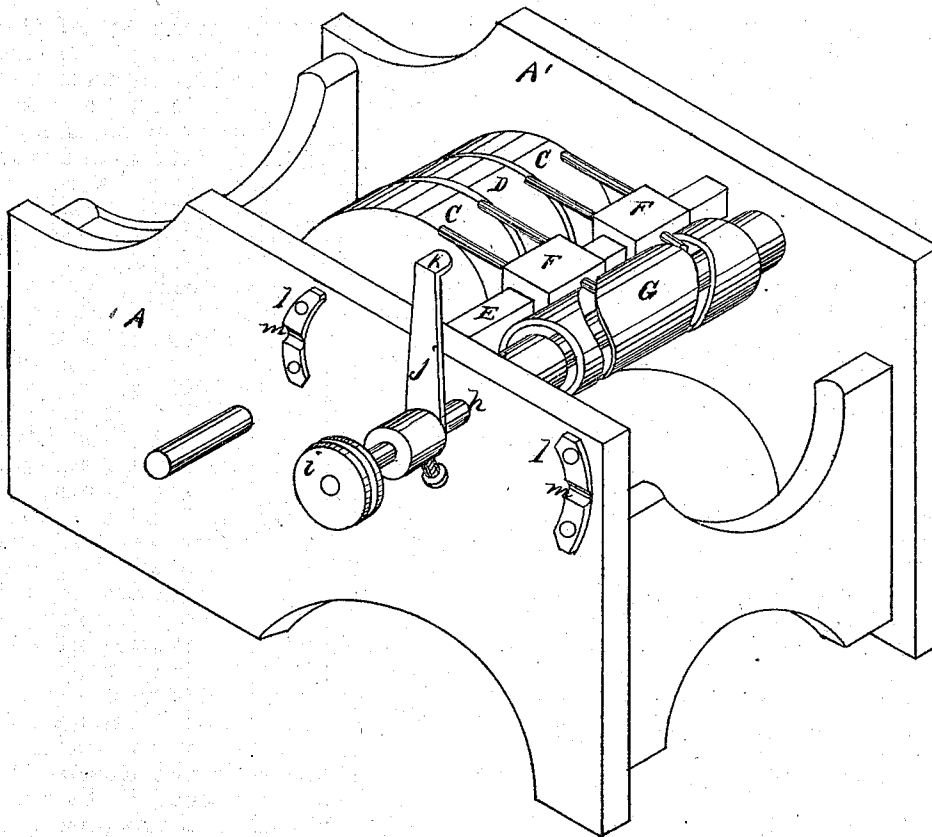
S. FORSYTHE.

Improvement in Belt-Shifters.

No. 129,806.

Patented July 23, 1872.

Fig. 1.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL FORSYTHE, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN BELT-SHIFTERS.

Specification forming part of Letters Patent No. 129,806, dated July 23, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, SAMUEL FORSYTHE, of the city and county of San Francisco, State of California, have invented Improvements in Belt-Shifters; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to improvements in that class of belt-shifting devices in which a cylinder provided with cam or spiral grooves is employed for shifting the blocks which carry the belt. My improvement consists in providing a spring-guard which will limit the rotation of the shaft at certain points, and thus indicate when the belt has been properly placed, without requiring further attention from the workman.

In order to explain my invention so that others will be able to understand its construction and operation, reference is had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a perspective view of my machine.

A A' represent the sides of a frame, through which the driving-shaft B passes. One or more loose pulleys, C, and a fixed pulley, D, are secured upon this shaft between the sides A A'. E is a fixed bar, upon which one or more carrying-blocks, F, are arranged to slide and carry the belt which passes around the pulley from one pulley to the other, according to the direction in which the blocks are moved. These slides are moved back and forth by cam-grooves in the cylinder G, with which a pin from each engages in the usual way, so that by partly revolving the cylinder the blocks will be shifted back and forth along the bar E, according to the direction in which the cylinder is turned. The shaft *h*, which supports the cylinder G, extends at one end outside of the side A of the frame, and has secured at its extremity a pulley, *i*. The usual way of operating this shaft is by means of an endless rope, which passes around the pulley *i* and also around another pulley at some suitable point, so that the work-

man can operate the blocks to shift the belts from any point along its length. In order to indicate the points of revolution of the shaft *h* at which the belts will be entirely upon one of the pulleys, I employ a spring-arm, *j*, which has one end secured to the shaft *h* outside of the side A, so that it will stand at right angles to the shaft and parallel with the side A. The extremity of this arm is bent at right angles, as shown at *k*. Directly in the line of the circle described by this bent extremity *k*, and upon opposite sides of the shaft, I secure to the side A a plate, *l*, in which is made a depression or channel, *m*, in line with the shaft *h*. The ends of this plate are rounded, so as to present an incline to lift the turned-down end of the arm *j* as it passes and allow it to drop into the depression, thus forming a stop. The position of these depressions is such that when the arm is stopped in one of them it is an indication that the belt is squarely upon one of the pulleys, so that by revolving the shaft half round, so as to change the arm from one depression to the other, a complete shift is made. This stop also prevents the workman from turning the cylinder far enough to strike the pin against the end of the slot and endangering its being broken. Besides this, the pressure required to force the arm out of the groove will prevent many accidents which frequently occur on account of the accidental shifting of the belt at a time when it is not expected.

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

1. In combination with the shaft *h*, cam-cylinder G, and sliding blocks F, I claim the arm *j* and stop-plates *l*, substantially as and for the purpose above described.

2. The arm *j*, with its bent extremity *k*, in combination with the plates *l* with their grooves *m*, substantially as and for the purpose above described.

In witness whereof I hereunto set my hand and seal.

SAMUEL FORSYTHE. [L. S.]

Witnesses:

J. L. BOONE,

C. M. RICHARDSON.