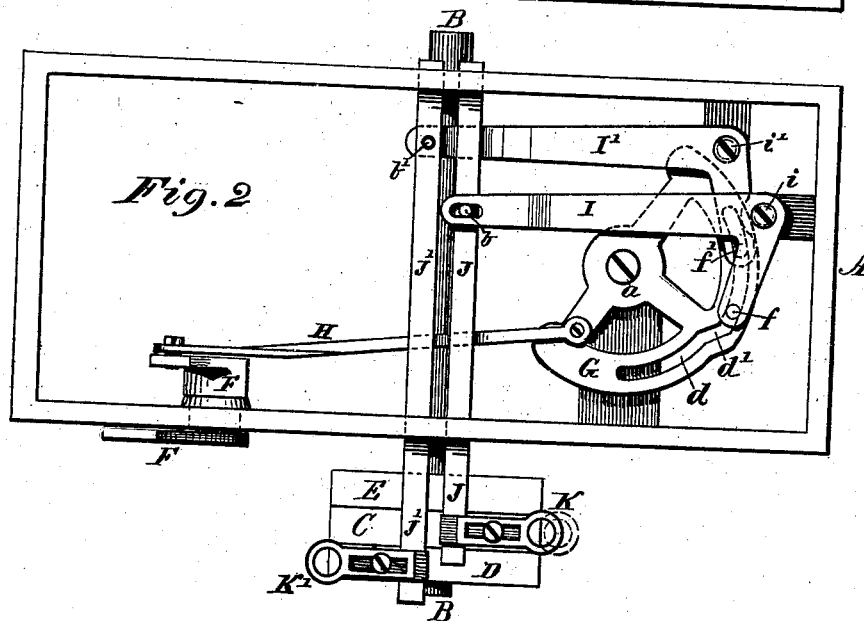
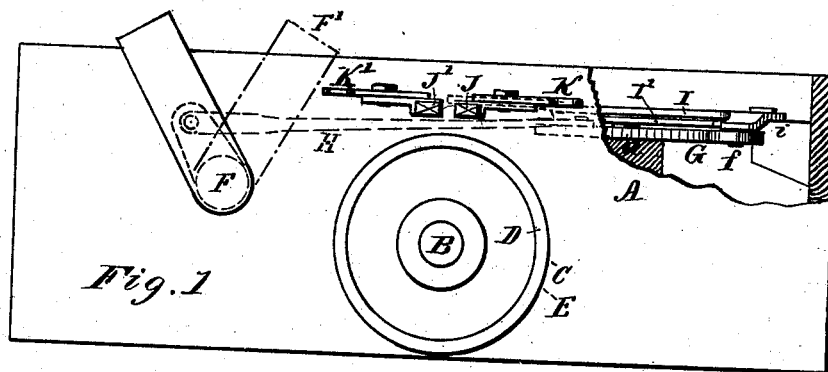


K. RASMUSSEN.  
Belt-Shifting Mechanism.

No. 214,842.

Patented April 29, 1879.



Witnesses,

Geo. M. Rice 2<sup>d</sup>  
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# UNITED STATES PATENT OFFICE.

KNUD RASMUSSEN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO DAVID W. POND, OF SAME PLACE.

## IMPROVEMENT IN BELT-SHIFTING MECHANISMS.

Specification forming part of Letters Patent No. **214,842**, dated April 29, 1879; application filed February 13, 1879.

*To all whom it may concern:*

Be it known that I, KNUD RASMUSSEN, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Belt-Shifting Mechanism for Metal-Planing Machines; and I do hereby declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a side view of such parts of a planer and belt-shifting mechanism as are necessary to show the nature of my invention, and Fig. 2 represents a plan view of the same.

This invention relates to mechanism for automatically shifting the belts on metal-planing machines, as when the direction of motion of the carriage or table is changed after the work has passed the tool.

My invention consists in the improved shipper mechanism, constructed and arranged for operation in the peculiar manner hereinafter described.

In the drawings, A denotes the planer-frame; B, the main operating-shaft; C, the tight pulley; D and E, the loose pulleys; and F, the rocker-finger, which engages the stop-dogs on the side of the movable work-supporting table.

It will be understood that these several parts, as well as such parts as are not herein illustrated and described, may be constructed and arranged to operate substantially in the usual manner, and that three, four, or five pulleys may be employed on the shaft B, as desired.

G indicates an oscillating segment or wheel, centered or pivoted to an arm of the frame A or other suitable support, as at *a*; and connected for operation with the rocker F by the rod H in such manner that when said rocker F is actuated by the stop-dogs on the moving table, which supports and carries the work beneath the planing-tool, said segment G will be caused to oscillate or swing on its central pivot, *a*. A cam-groove or segmental guideway, *d*, having an incline or offset, *d'*, is formed in or on the rim of the oscillating piece G, and in connection with said guide or cam *d d'* are

two levers, I I', of bell-crank form, fulcrumed at *i i'* on arms of the frame A, and having their longer arms pivoted at *b b'* to the sliding shipper-bars J J', respectively, while their shorter arms are fitted with studs or suitable bearing-points *f f'*, that embrace or follow the cam or groove *d d'*.

Two shipper-bars, J J', or one for each belt, are employed. Said bars are arranged parallel to each other above the shaft B, with their outer ends extending over the pulleys C D E, where eyes or belt-guides K K' are provided for embracing and guiding the belts as they run onto the pulley-faces. In the present instance said belt-guides are made adjustable, so that the eye or opening for the belt can be varied in position farther from or nearer to their shipper-bars, that they may correspond with different inclinations of the belts, in case it is not convenient to place the driving counter-shaft directly over the pulleys C D E. (See dotted lines, Fig. 2.)

In the operation of this mechanism, when the rocker F is swung to the left by the stop-dogs the parts are moved to the positions shown, (see Fig. 2,) the belt in the guide K' running on the loose pulley, D, while the belt in the guide K is on the tight pulley, C, operating the planer. The action of moving the rocker F to the position indicated by dotted lines F', Fig. 1, causes the oscillation of the segment G, and the incline *d'* of the groove *d*, acting first on the lever I, draws back the bar J, and shifts the belt in its guide K off from the pulley C and onto the loose pulley E, and then, acting on lever I', draws back the bar J' and shifts the belt in guide K' onto said pulley C. Thus each belt is shifted independently of the other, and the one is free from the face of the driving-pulley C before the other is run onto the same. On reversing the position of the rocker, the bar J' and guide K' are first operated, and then the bar J and guide K, thus giving a similar result in both directions of movement.

This mechanism is simple, durable, and easy of operation. The bars J J', being supported in the frame to move parallel with the pulley-faces, shift the belts with a straight and uniform action, while the swinging segment or cam-piece G, with its inclined guideway *d d'*,

imparts an easy, though powerful, movement to the levers I I' and bars J J', and acts without shock or severe strain on the connecting parts.

I am aware that belt-shifting mechanism has heretofore been constructed wherein motion is imparted to the belt-carrying devices by means of a slot or groove in two parts, and having an abrupt communication, whereby one belt is shifted in advance of the other, and I do not therefore herein make claim, broadly, to the employment of such feature.

What I claim as of my invention, and desire to secure by Letters Patent, is—

The combination, in a belt-shifting mechanism, of the parallel bars J J', the adjustable belt guides or eyes K K', the swinging levers I I', and actuating-segment G, constructed and operating as set forth.

Witness my hand this 6th day of February, A. D. 1879.

KNUD RASMUSSEN.

Witnesses:

CHAS. H. BURLEIGH,  
S. R. BARTON.