

No. 688,076.

Patented Dec. 3, 1901.

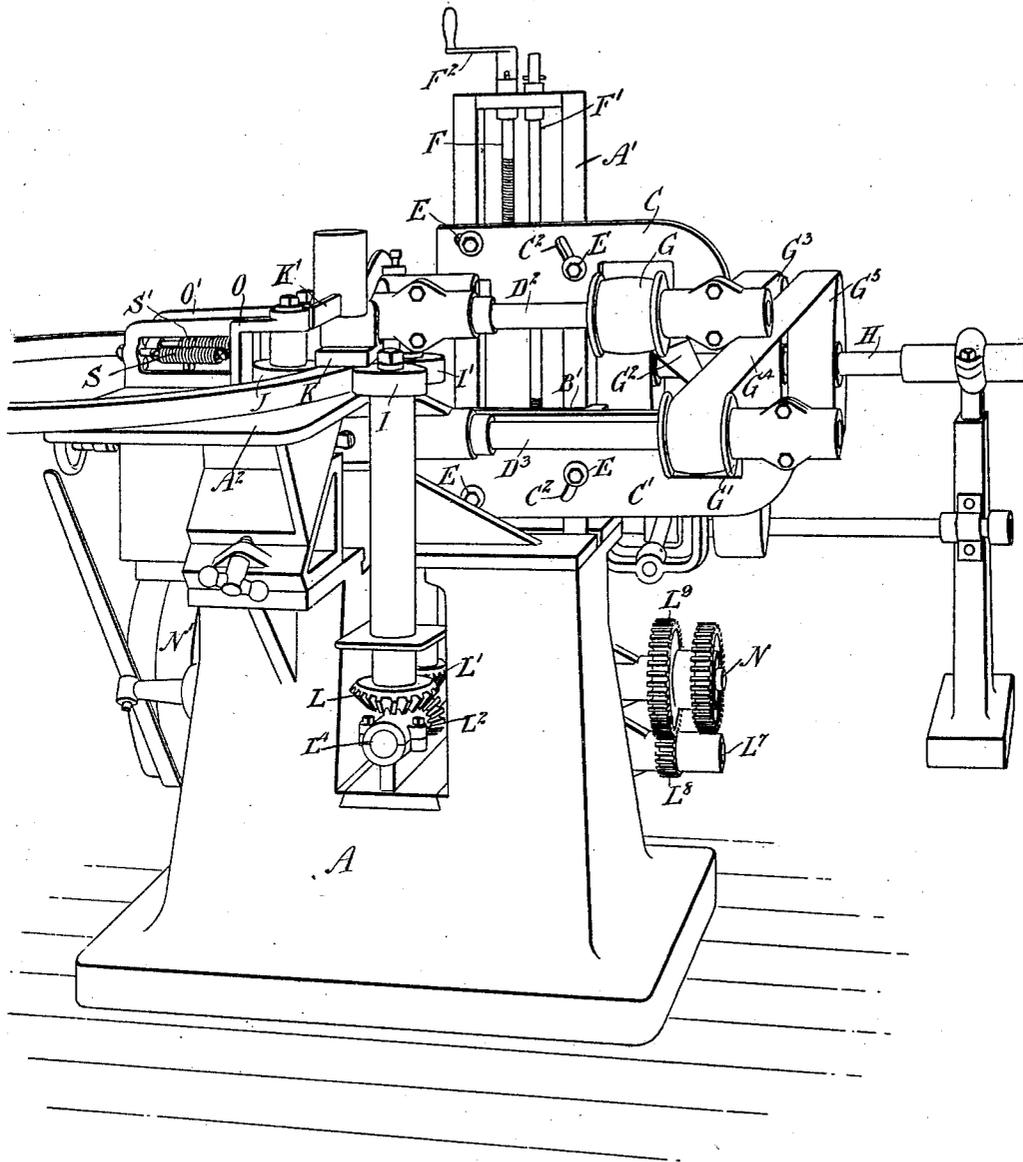
G. A. ENSIGN.  
FELLY PLANING MACHINE.

(Application filed Apr. 23, 1901.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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3 Sheets—Sheet 3.

Fig. 3.

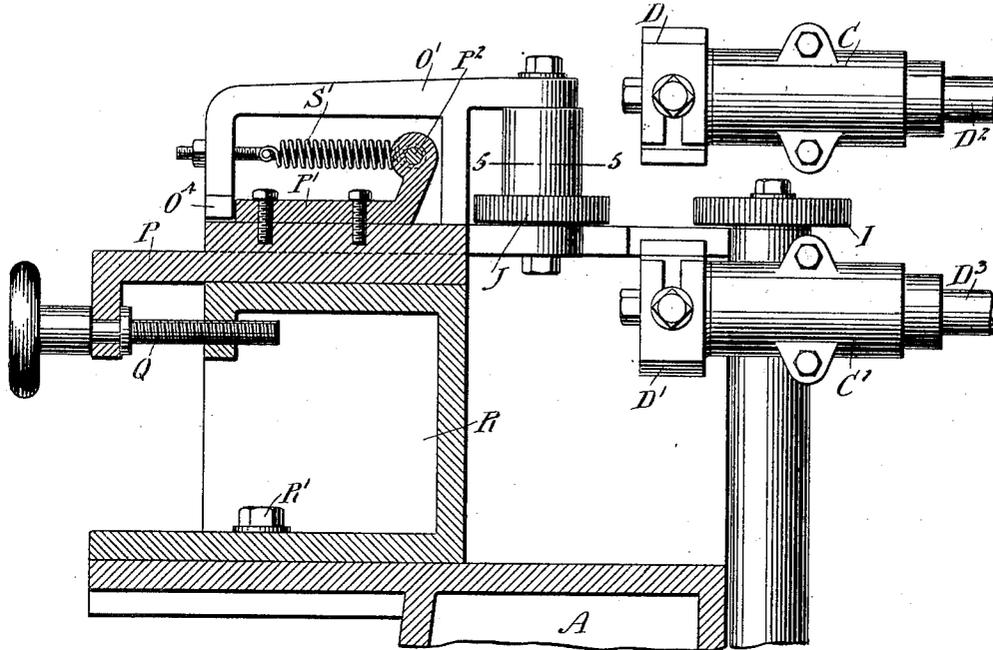


Fig. 4.

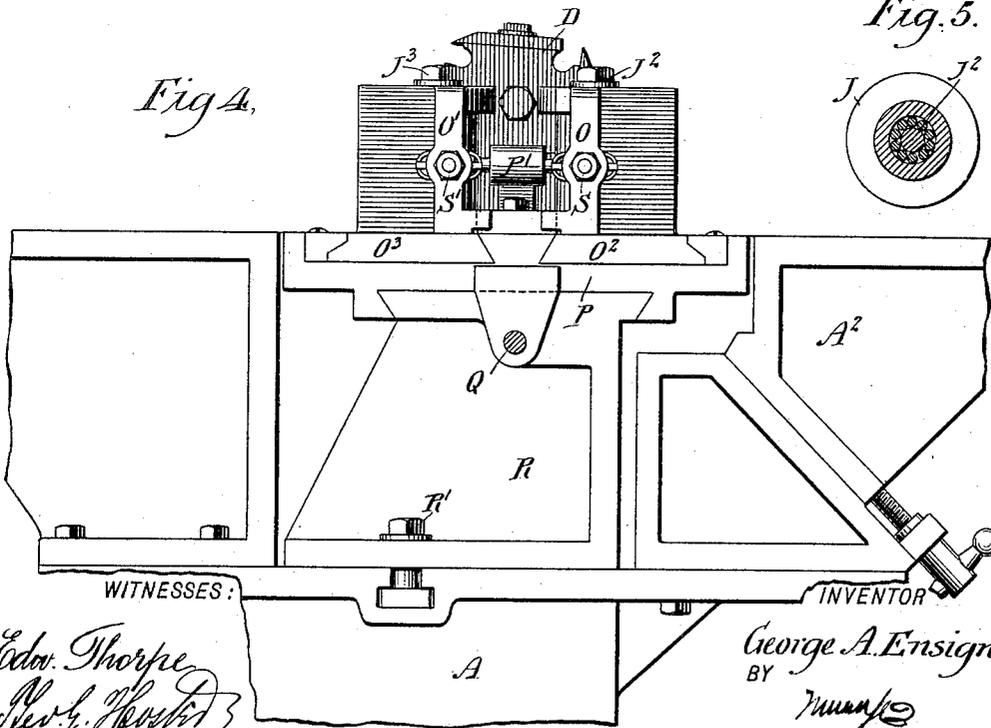


Fig. 5.

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# UNITED STATES PATENT OFFICE.

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## FELLY-PLANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 688,076, dated December 3, 1901.

Application filed April 23, 1901. Serial No. 57,109. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. ENSIGN, a citizen of the United States, and a resident of Defiance, in the county of Defiance and State of Ohio, have invented a new and Improved Felly-Planing Machine, of which the following is a full, clear, and exact description.

The invention relates to woodworking machinery; and its object is to provide a new and improved planing-machine more especially designed for simultaneously dressing both sides of fellies for vehicle-wheels to reduce the fellies to the desired width and without the aid of skilled labor, the machine being arranged to automatically feed the felly to and between two adjustable cutter-heads to insure true and uniform planing of both sides either parallel or to bevels and to give convenient access to the cutter-heads whenever it is desired to inspect, adjust, or repair the same.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement. Fig. 2 is an enlarged plan view of the same. Fig. 3 is a sectional side elevation of the same on the line 3 3 in Fig. 2. Fig. 4 is a cross-section of the same on the line 4 4 in Fig. 2, and Fig. 5 is a sectional plan view of one of the presser-rolls on the line 5 5 in Fig. 3.

The improved felly-planing machine is mounted on a suitably-constructed bed A, on which is secured an upright A' for saddles or slides B B' to move in vertically, said slides carrying bearings C C' for the cutter-head spindles D<sup>2</sup> D<sup>3</sup>, carrying at their forward ends the cutter-heads D D' of usual construction. The bearings C C' are adjustably held on saddles B B' by bolts E, extending through angular slots C<sup>2</sup> in said bearings and engaging the saddles B B'. Thus when the bolts E are loosened the bearing C may be adjusted so as to bring the cutter-head spindles D<sup>2</sup> D<sup>3</sup>

either into parallel or into angular positions relatively to one another for planing the side of the felly either parallel or to bevels, as the case may be. The saddles B B' are vertically adjustable by means of screw-rods F F', mounted to turn in suitable bearings on the top of the upright A', said screw-rods screwing in suitable nuts secured to or formed on the saddles B B'. A crank-arm F<sup>2</sup> can be engaged with the upper polygonal end of either screw-rod F or F', so as to turn the same to the right or the left and move the corresponding saddle B or B', and with it the bearings C C', spindles D<sup>2</sup> D<sup>3</sup>, and cutter-heads D D', up or down, according to the direction in which the screw-rod F or F' is turned. Thus the cutter-heads can be brought nearer together or farther apart, according to the width of the felly to be planed. On the cutter-head spindles D<sup>2</sup> D<sup>3</sup> are secured pulleys G G', of which the pulley G is connected by a crossed belt G<sup>2</sup> with a pulley G<sup>3</sup> on a counter-shaft H, and the pulley G' is connected by a straight belt G<sup>4</sup> with a pulley G<sup>5</sup>, likewise secured on the counter-shaft H, so that when the latter is rotated rotary motion is given to the cutter-head spindles D<sup>2</sup> D<sup>3</sup> and their cutter-heads D D' to simultaneously plane the sides of the felly to the desired width.

The felly to be planed is held on a table A<sup>2</sup> and is pressed with its peripheral face against driven horizontally-disposed spaced feed-rolls I I' by revoluble similarly-arranged presser-rolls J J' engaging the inner face of the felly, the latter being held down to the table by a presser-foot K, secured to a weighted lever K', fulcrumed at K<sup>2</sup> on the bed A. The vertical shafts I<sup>2</sup> I<sup>3</sup> of the feed-rolls I I' are journaled in suitable bearings carried on the bed A, and on the lower ends of said shafts are secured bevel gear-wheels L L', in mesh with bevel gear-wheels L<sup>2</sup> L<sup>3</sup>, secured on a transversely-extending shaft L<sup>4</sup>, journaled in suitable bearings attached to the bed A. The rear end of the shaft L<sup>4</sup> (see Fig. 2) is connected by a bevel gear-wheel L<sup>5</sup> with a bevel gear-wheel L<sup>6</sup>, secured on a shaft L<sup>7</sup>, geared by a pinion L<sup>8</sup> with a gear-wheel L<sup>9</sup> on a longitudinally-extending driving-shaft N, journaled with the shaft L<sup>7</sup> in suitable bearings carried on the bed A. The driving-shaft N is provided

with fast and loose pulleys N', connected by belt and pulley (not shown) with the counter-shaft H, so that when the latter is rotated a simultaneous rotary motion is given to the cutter-heads D D' by the means previously described and a corresponding rotary motion is given to the feed-rolls I I' by the mechanism above set forth. The presser-rolls J J' are mounted by ball-bearings (see Fig. 5) on vertically-disposed spindles J<sup>2</sup> J<sup>3</sup>, held transversely adjustable in slotted slides O O', having their bases O<sup>2</sup> O<sup>3</sup> mounted to slide longitudinally on guideways carried by a plate P, held adjustably in the direction of the movement of the bases O<sup>2</sup> O<sup>3</sup> by a screw-rod Q on a support R, removably secured to the bed A by a bolt R', as is plainly indicated in Figs. 3 and 4. The slides O O' are pressed on by springs S S', attached to a cross-pin P<sup>2</sup>, carried by an arm P', secured to the top plate P, (see Figs. 2 and 3,) so that the presser-rolls J J' are held by the tension of the springs S S' in frictional contact with the inner face of the felly to press the same firmly in engagement with the feed-rolls I I'. As the latter are positively driven it is evident that the felly is fed along, and at the same time the cutter-heads D D' act on the sides of the felly, so as to plane the same to the required width. The inner sliding movement of the slides O O' is limited by stops O<sup>4</sup> on the slides engaging the outer end of the arm P', so that the presser-rolls J J' are not liable to move into the path of the cutter-heads D when no felly is under treatment in the machine.

When the machine is in use and the operator places a felly on the table A and pushes the same between the revoluble feed-rolls I and the opposite presser-roll J, then the felly is fed along to and between the cutter-heads D D', so that the latter plane the sides of the felly to the required width and shape. As the felly proceeds it passes with the planed end between the rear feed-roll I' and the presser-roll J', so that when the rear end of the felly has left the feed-roll I and the presser-roll J it is still fed transversely to allow the cutter-heads D D' to finish the rear end of the felly, the latter being moved to the rear by the feed-roll I' and the presser-roll J'. At this time a new unfinished felly is placed on the table A<sup>2</sup> and passed by the operator between the rolls I and J and the above-described operation is repeated, it being understood that the operator can feed one felly immediately behind the other through the machine, so that a very large number of fellies can be finished in a comparatively short time.

In case it is desirable to inspect, adjust, or repair the cutter-heads D D' the operator releases the bolt R' and moves the support R, with all parts attached thereto, from the machine, so that convenient access is had to the cutter-heads for the purpose mentioned. As soon as the necessary repairs are made the support R is placed back in position on the bed A and secured thereto by the bolt R',

with all the parts immediately in proper position to again start up the machine.

From the foregoing it is evident that the machine is very simple and durable in construction, is not liable to easily get out of order, and the adjustments are very few and simple, so that the several parts can be set to the proper position by an ordinary attendant without the employment of skilled labor.

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

1. A felly-planing machine having cutter-heads, driven feed-rolls for engaging the periphery of a felly, presser-rolls for holding the felly to the feed-rolls, and a removable support carrying said presser-rolls and in which the presser-rolls are adjustable toward and from each other and toward and from the feed-rolls, as set forth.

2. A felly-planing machine having a bed, cutter-heads, driven feed-rolls for engaging the peripheral face of a felly, a support removably secured to said bed, slides carried by said support, and presser-rolls carried by said slides and adjustable transversely of the slides, the said presser-rolls being arranged to hold the felly to said feed-rolls, as set forth.

3. In a felly-planing machine, feed-rolls, a pair of presser-rolls for engaging the inner face of a felly and pressing the latter against the feed-rolls, slotted slides in which the spindles of said presser-rolls are transversely adjustable, and springs pressing the slides and holding the presser-rolls in firm contact with the felly, as set forth.

4. In a felly-planing machine, a pair of presser-rolls for engaging the inner face of a felly and pressing the latter against the feed-rolls, slides provided with slots in which the spindles of the rolls are transversely adjustable, springs pressing the slides and holding the presser-rolls in firm contact with the felly, and guideways in which said slides are independently mounted to move, as set forth.

5. In a felly-planing machine, a pair of presser-rolls for engaging the inner face of a felly and pressing the latter against the feed-rolls, slides on which the rolls are journaled, guideways on which the bases of said slides are mounted to slide longitudinally, a plate carrying said guideways and held adjustable in the direction of the movement of said bases, an arm on the said plate and carrying a cross-pin, and springs attached to said cross-pin and to the said slides, as set forth.

6. In a felly-planing machine, driven feed-rolls, a pair of presser-rolls for engaging the inner face of a felly and pressing the latter against the feed-rolls, slotted slides on which the presser-rolls are held, the spindles of the said rolls being transversely adjustable in the said slots, guideways in which said slides are mounted to move independently of one another, an adjustable plate carrying said guideways, an arm on the said plate and carrying a cross-pin, springs attached to said cross-pin

and connected with the slides, a support for the plate, and means for adjusting the latter on said support, as set forth.

5 7. In a felly-planing machine, a bed, cutter-heads, driven feed-rolls for engaging the periphery of a felly, a support removably secured to the bed, a plate carrying guide-ways and adjustable on the said support, means for adjusting said plate, slotted slides  
10 having their bases mounted to slide longitudinally on said guideways, presser-rolls having vertically-disposed spindles held transversely adjustable in said slotted slides, springs pressing the slides and holding the  
15 presser-rolls in contact with the felly, and stops for limiting the inner sliding movement of the slides, as set forth.

8. In a felly-planing machine, adjustable cutter-heads located one above the other, means for bringing the cutter-head spindles 20 into parallel or into angular positions relatively to one another, driven feed-rolls for engaging the periphery of the felly, presser-rolls for holding the felly to the feed-rolls, slides carrying the presser-rolls and in which 25 the latter are adjustable transversely, and a support for said slides, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE A. ENSIGN.

Witnesses:

GEO. W. DEATRICK,  
JOSEPH BAUER.