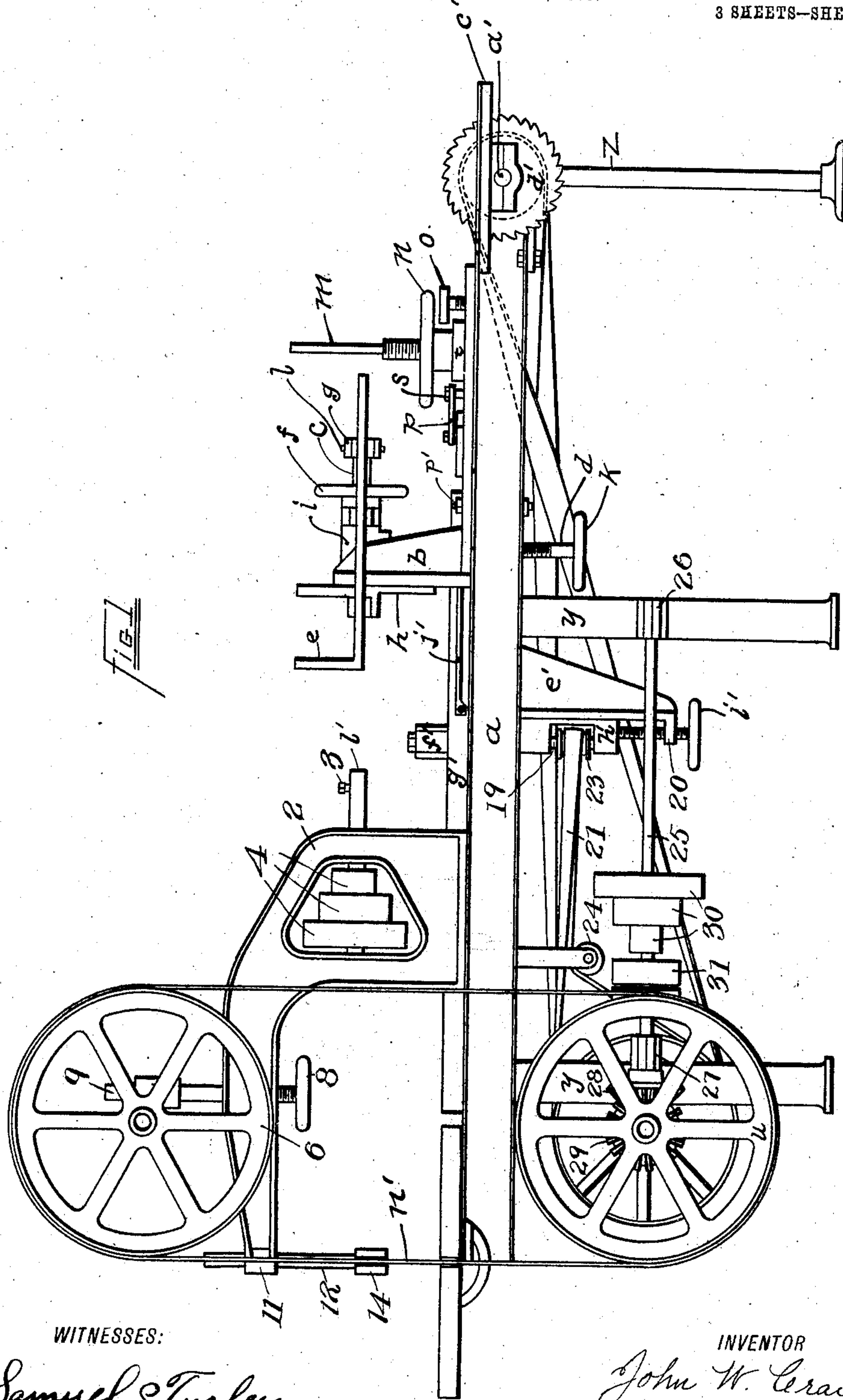


No. 845,697.

PATENTED FEB. 26, 1907.

J. W. CRAIN.  
CARRIAGE MACHINE.  
APPLICATION FILED MAR. 28, 1906.

3 SHEETS—SHEET 1.



WITNESSES:

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*W. Mar. Small*

INVENTOR

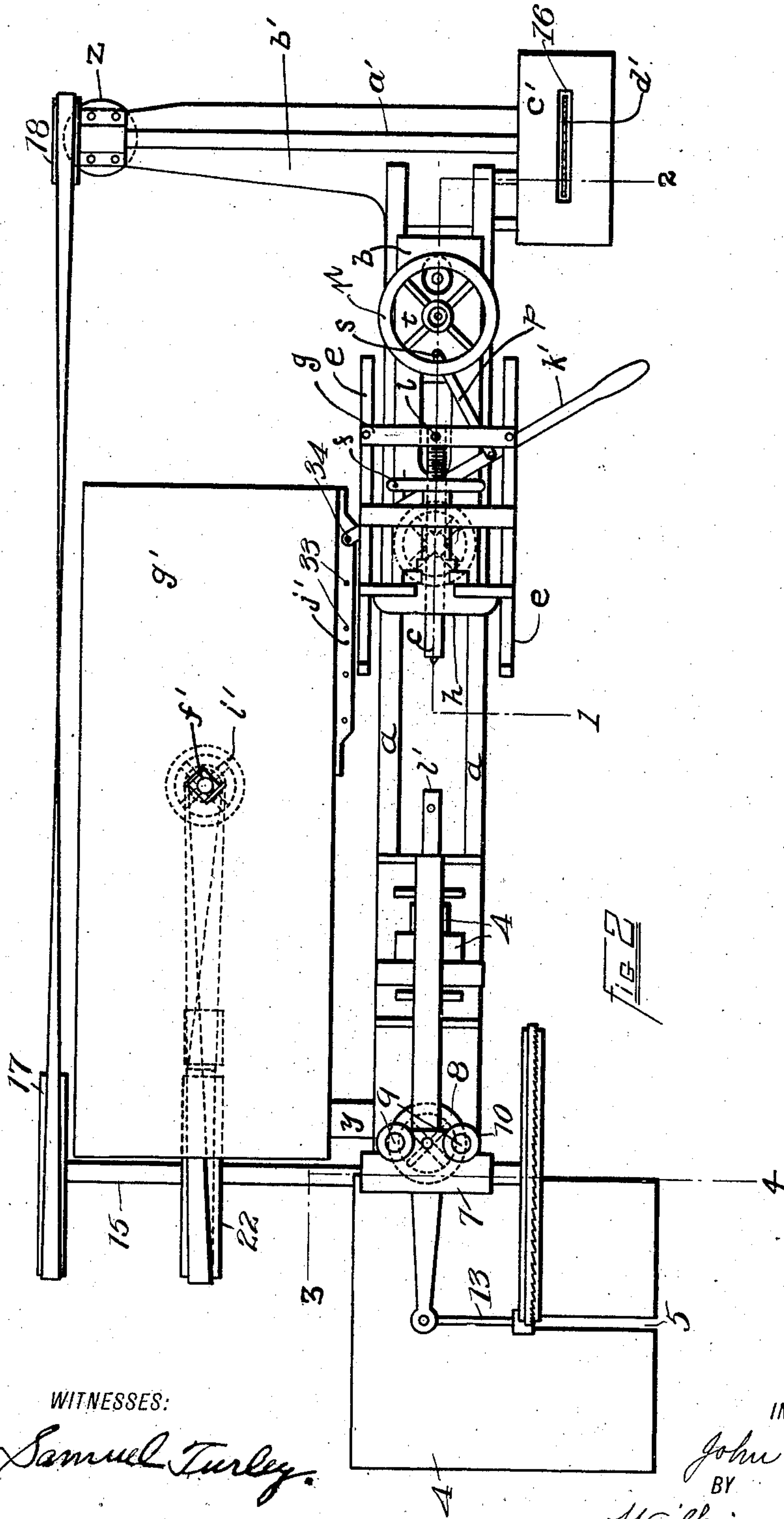
*John W. Crain*  
BY  
*Wilkinson & Fisher*  
ATTORNEYS

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3 SHEETS—SHEET 2.



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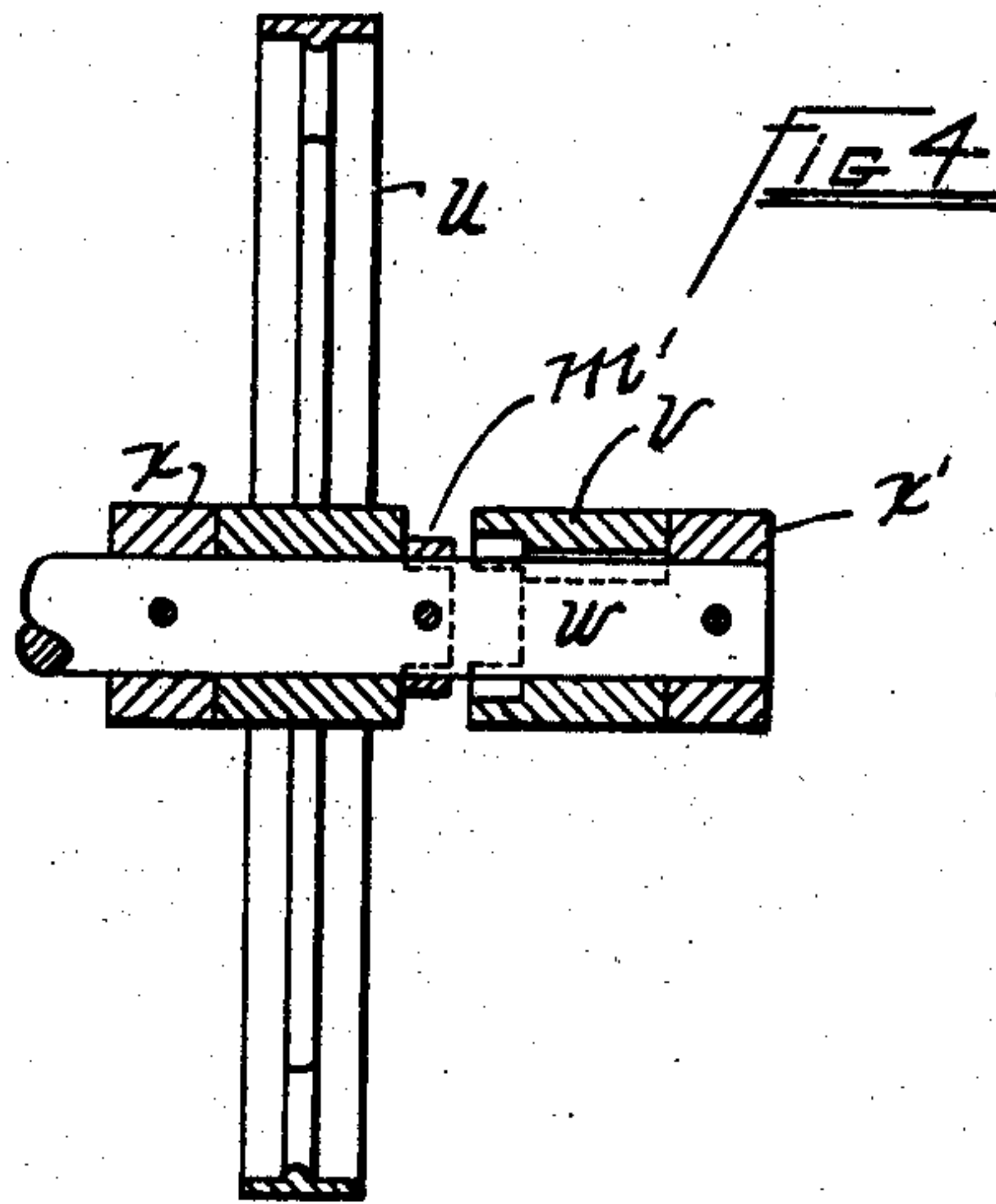
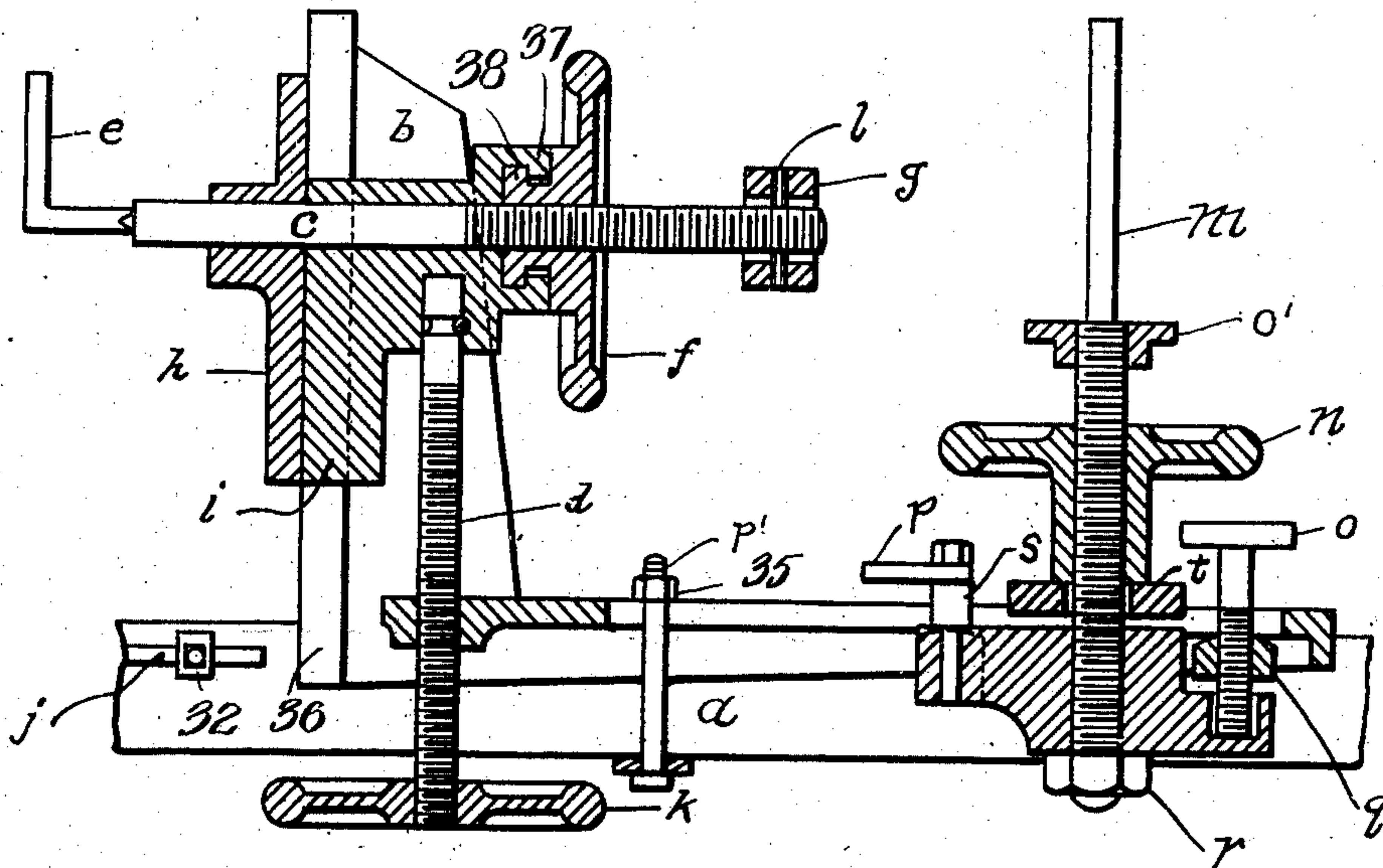
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3 SHEETS—SHEET 3.

FIG 3



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN W. CRAIN, OF WINCHESTER, KENTUCKY.

## CARRIAGE-MACHINE.

No. 845,697.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed March 28, 1906. Serial No. 308,598.

*To all whom it may concern:*

Be it known that I, JOHN W. CRAIN, a citizen of the United States, residing at Winchester, in the county of Clark and State of Kentucky, have invented certain new and useful Improvements in Carriage-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in carriage-machines; and the object of my invention is to produce a simple and compact machine which saves manual labor and may be used for spoke-turning, wood-boring, planing, and lathe-work, and, in fact, for carriage-making, blacksmithing, and manufacturing generally.

With this object in view my invention consists in the construction and combinations of parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improved machine. Fig. 2 is a top plan view thereof. Fig. 3 is a section on the line 1 2 of Fig. 2, and Fig. 4 is a section on the line 3 4 of the same figure.

*a* represents the bed of the machine, the main part of which is preferably formed of parallel I-beams supported on legs *y*. At the rear the machine-frame is extended at right angles, as shown at *b'*, an additional support *z* being provided at the outer end of said extension. To one end of the bed *a* is bolted or otherwise secured an upwardly-extending bracket 2, in which is mounted a spindle *l'*, in which is adapted to be inserted a lathe-chuck, (not shown,) which is secured therein by the screw 3. On the spindle *l'* are mounted a series of pulleys 4 of different sizes, so that the spindle *l'* may be driven at different speeds.

To one end of the frame *a* is fastened a table 4, provided with a slot 5, through which the band-saw *n'* is adapted to run. This band-saw passes over pulleys or wheels *u* and 6, the latter wheel being mounted in an adjustable bearing 7, which is adjustably supported on the bracket 2 by means of the wheel 8. 9 represents guide-pins, with which ears 10 on said bearing engage.

The bracket 2 is provided with a bearing 11 at one end for the reception of the rod 12, which carries an arm 13, provided with an

ordinary band-saw guide 14. The band-saw is driven by the rotation of the wheel *u*, which is loosely mounted on the main or driving shaft 15, to which power is supplied by any suitable means. (Not shown.)

The wheel *u* is held in position on the shaft 15 by collars *m'* and *x*, secured to said shaft, and *v* represents a clutch slidingly connected by a feather *w* to the shaft 15, the collar *x'* limiting the movement of the clutch *v* in one direction. This clutch may be operated by hand or any suitable means.

Mounted on bearings carried by the extension *b'* of the frame is a shaft *a'*, which carries a circular rip-saw *d'*, which works through a slot 16 in a table *c'*. The shaft *a'* is driven by means of a crossed belt from the shaft 15, said belt running over the pulleys 17 and 18.

*g'* represents the planer-board, which is located back of the lathe-frame. Through this board the planer *f'* projects upwardly. This planer is mounted upon a shaft 19, which rests in a step *h'*, said step being slidably supported in a bracket *e'* and adjustable by means of the hand-wheel *i'*, which carries a screw passing through a projection 20 on the bracket *e'*. The shaft 19 is driven by a belt 21, which passes over a pulley 22 on the shaft 15 and also over a pulley 23 on the shaft 19, said belt being crossed and passing over an idler 24.

25 represents the shaft for driving the lathe, which is mounted in bearings 26 and 27 on two of the supports *y*. Said shaft is provided with a beveled gear-wheel 28, which meshes with a similar gear-wheel 29 on the shaft 15. On the shaft 25 are mounted a series of stepped pulleys 30, similar in shape to the pulleys 4 on the spindle *l'*, but oppositely arranged, as is common in lathe-work.

31 represents an idle pulley loosely mounted on the shaft 25, on which the lathe-driving belt is adapted to be placed when it is not desired to use the lathe.

*b* represents the tail-stock or carriage of the machine, which is slidably mounted on the bed *a* and which may be moved back and forth as desired, its forward movement toward the lathe-head, however, being limited by the adjustable stop *j*, which is slidably mounted in a slot 32 in one of the I-beams forming the bed of the machine and which by means of a nut may be fastened in any desired position in said slot. This tail-stock



can be moved back and forth by means of a hand-lever  $k'$ , to which is attached a link  $p$ , which is also attached to the tail-stock by the pin  $s$ . The lever  $k'$  is pivotally mounted in an iron extension  $j'$ , fastened to the planer-table  $g'$ , and this extension  $j'$  is provided with a series of holes, such as 33, and the lever  $k'$  carries a pin 34, adapted to engage with any one of the holes 33.

The tail-stock is clamped in any desired position by means of the bolt  $p'$  and the nut 35 thereon must of course be loosened before the tail-stock is moved. The tail-stock or carriage  $b$  is provided with a block  $i$ , slidably mounted on guides 36 thereon, which can be adjusted up and down by means of the hand-wheel  $k$  and screw-threaded rod  $d$ . This block  $j$  carries the centering-spindle  $c$  for lathe-work, which spindle can be adjusted back and forth in the block  $i$  by means of the hand-wheel  $f$ , one end of said spindle  $c$  being screw-threaded for engagement with a screw-threaded perforation in the inside of the hand-wheel  $f$ . The block  $i$  is provided with a rearwardly-projecting portion 37, and the hand-wheel  $f$  is provided with a projection 38, so that when once placed in position the two parts will firmly engage with each other, while at the same time permitting the hand-wheel  $f$  to be rotated. The tail-block  $b$  is also provided with a series of clamps  $e$  and  $h$ , the clamps  $h$  being located just in front of the block  $i$  and the clamps  $e$  being adjustable toward and away from the clamps  $h$ . This adjustment is effected by means of the hand-wheel  $f$ , the spindle  $c$  running backward and engaging with a pin  $l$ , held in a cross-frame  $g$ , which is pivotally connected to the clamps  $e$ . As the part  $h$  is pivotally connected to the spindle  $c$ , the clamps can be moved in a zigzag direction, so as to adjust themselves to any required angle.

The tail-stock  $b$  carries at its outer end a vertical spindle  $m$ , which acts as a wheel-rest on which vehicle-wheels may be mounted for the purpose of cutting tenons on spokes, &c. The thumb-screw  $o$ , provided with a nut  $q$ , provides an adjustment for cut-

ting tenons at various angles to the center of the spoke.

$n$  represents an adjusting hand-wheel, screw-threaded on the lower screw-threaded end of the spindle  $m$ . By means of this hand-wheel, which rests upon a perforated cross-piece  $t$ , the spindle  $m$  can be raised or lowered as needed, and a nut  $r$  on the lower end of the screw-threaded portion of the spindle  $m$  is used to secure the spindle in any desired position.

$o'$  represents the work-plate, located at the top of the screw-threaded portion of the spindle  $m$ , and by the construction described this work-plate may be raised or lowered, as desired.

It is obvious from the foregoing description that all of the ordinary operation of carriage-building, including sawing, ripping, planing, drilling, and lathe-work, may all be carried on in this simple machine with a great saving of manual labor and a large economy of space, as the machine is only about eight feet long and a little over three feet wide.

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

1. In a carriage-machine, the combination of a bed, a lathe carried thereby provided with a tail-stock, a centering-spindle in said tail-stock, means for adjusting said tail-stock, and clamping members carried by said tail-stock and operated by the movement of said spindle, substantially as described.

2. In a carriage-machine, the combination of a tail-stock, a centering-spindle carried thereby, an operating-wheel for said spindle, clamping members carried by said tail-stock, some of said members being pivotally connected to said spindle, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. CRAIN.

Witnesses:

J. A. BOONE,  
S. W. POWELL.