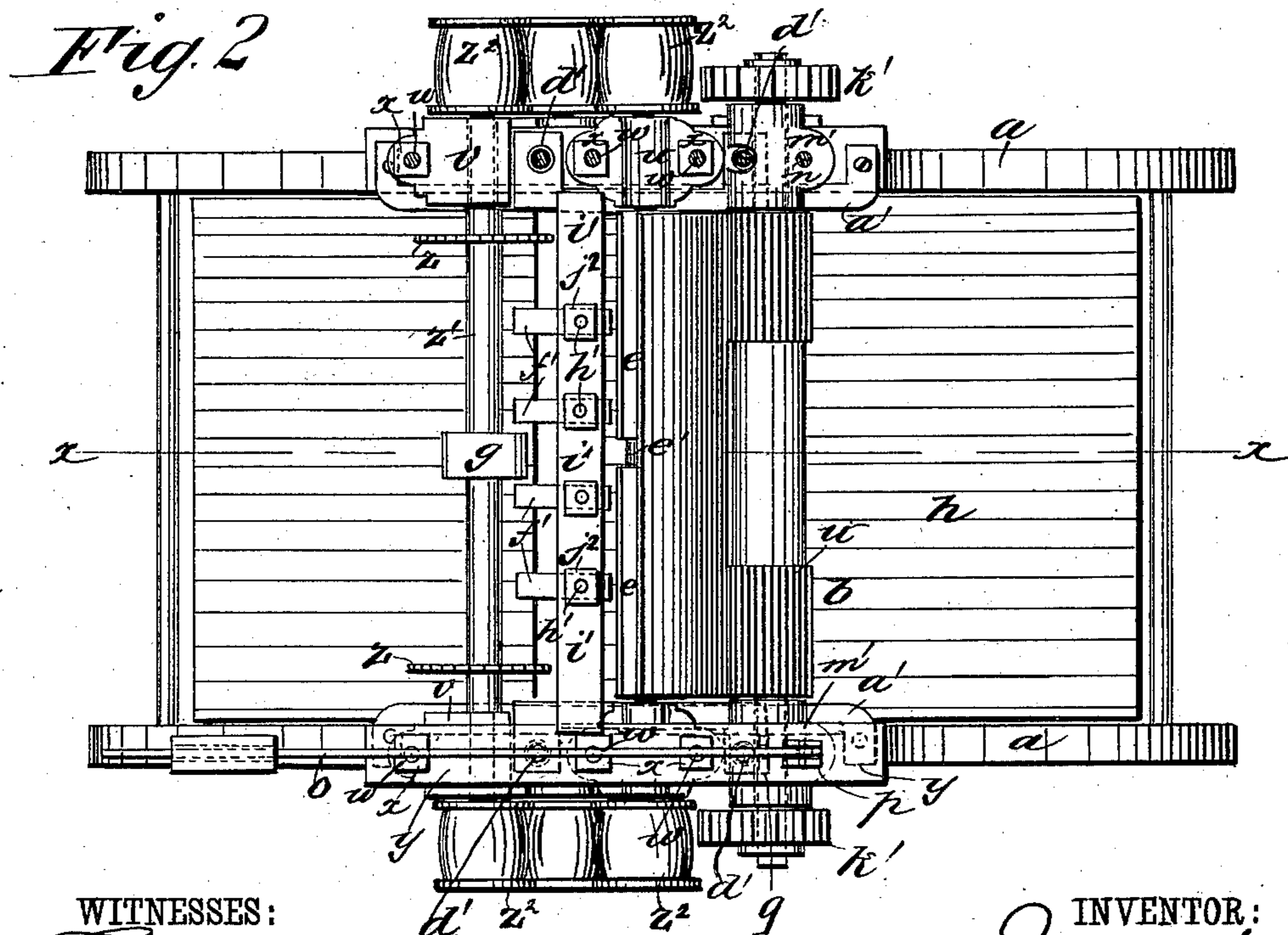
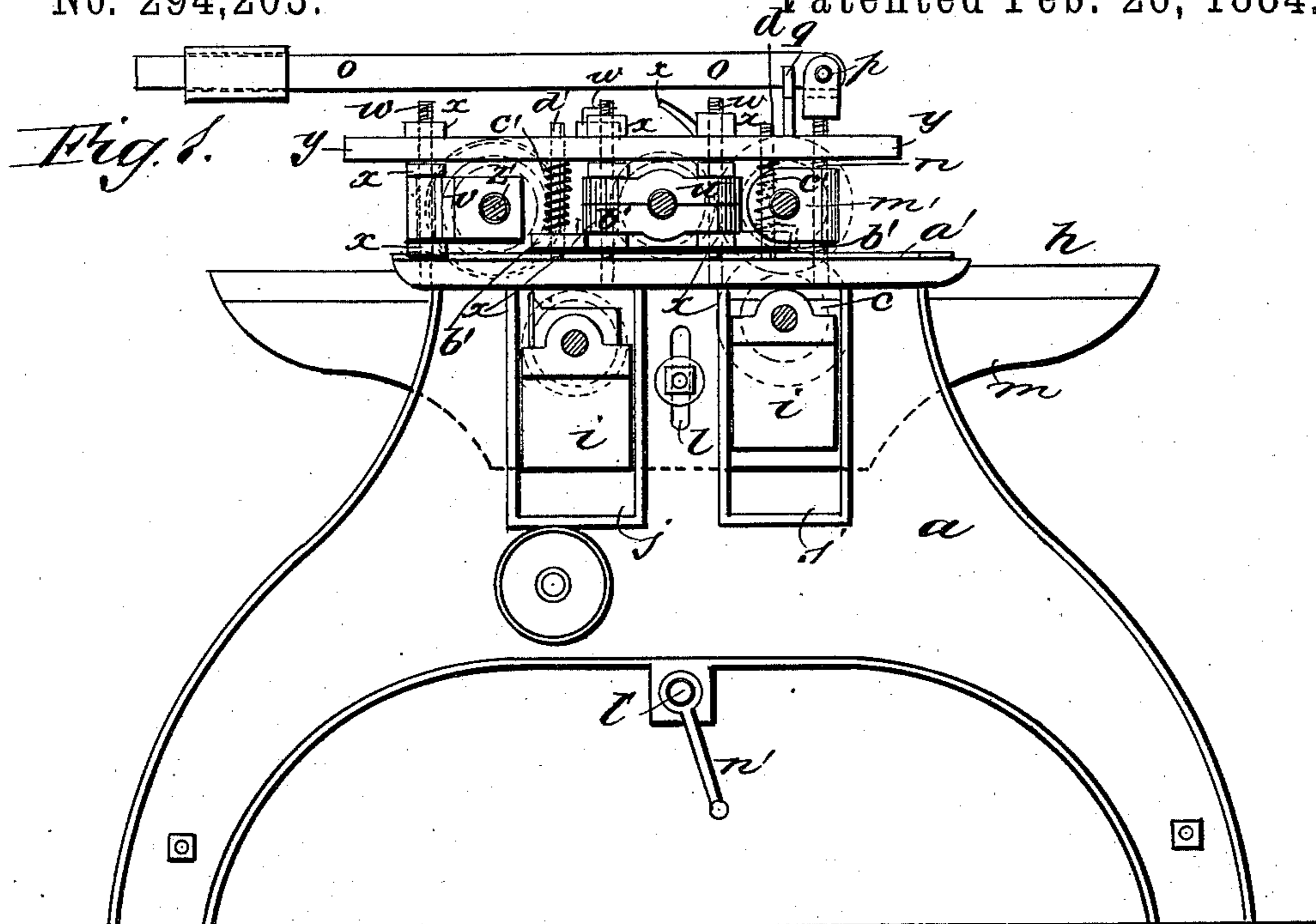


W. F. COWLES & J. WOOLWORTH.

WOODEN STIRRUP MACHINE.

No. 294,203.

Patented Feb. 26, 1884.



WITNESSES:

*Francis McArdle*  
*L. Sedgwick*

INVENTOR:

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BY *Munn*  
ATTORNEYS.

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Fig. 3.

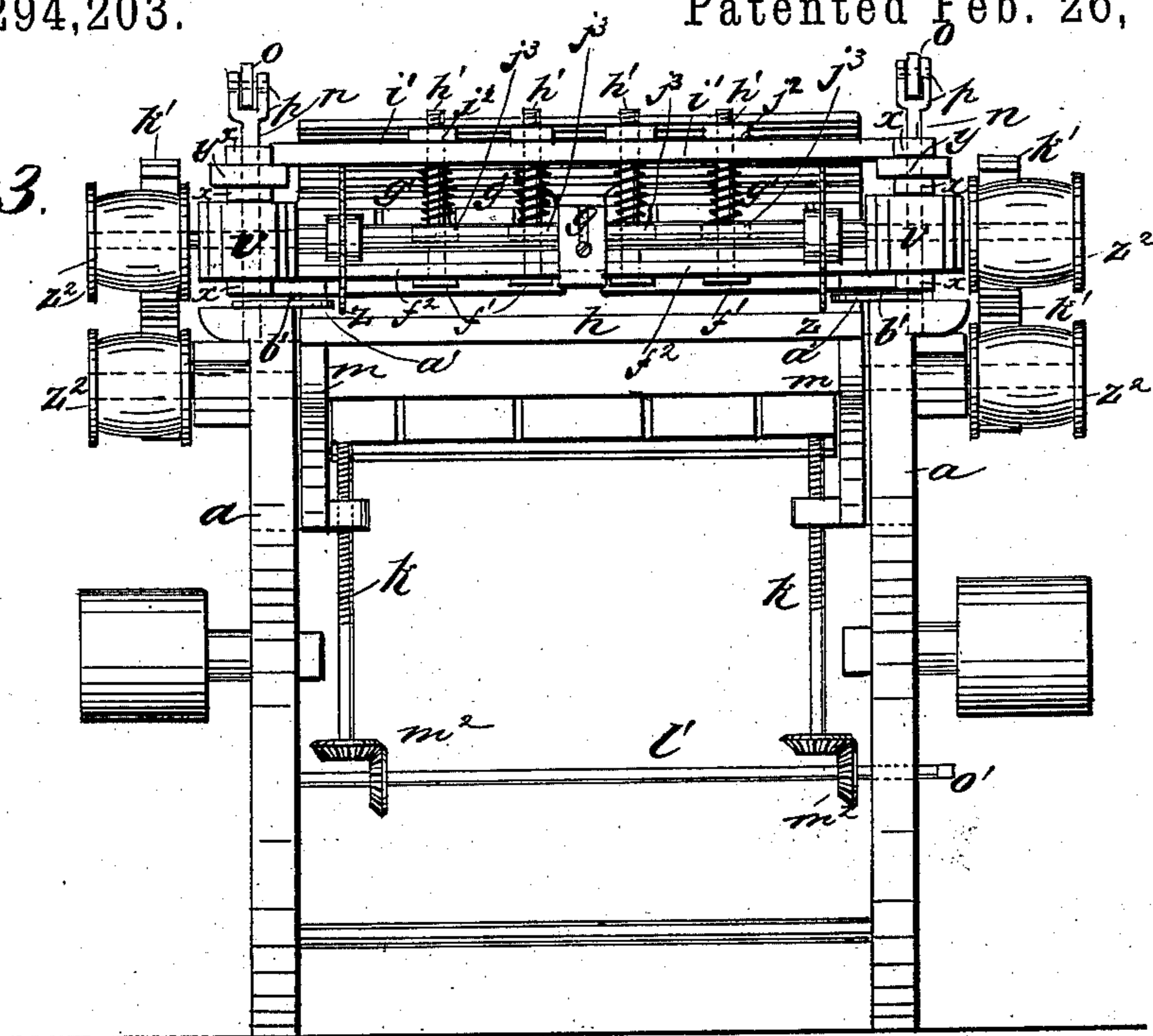
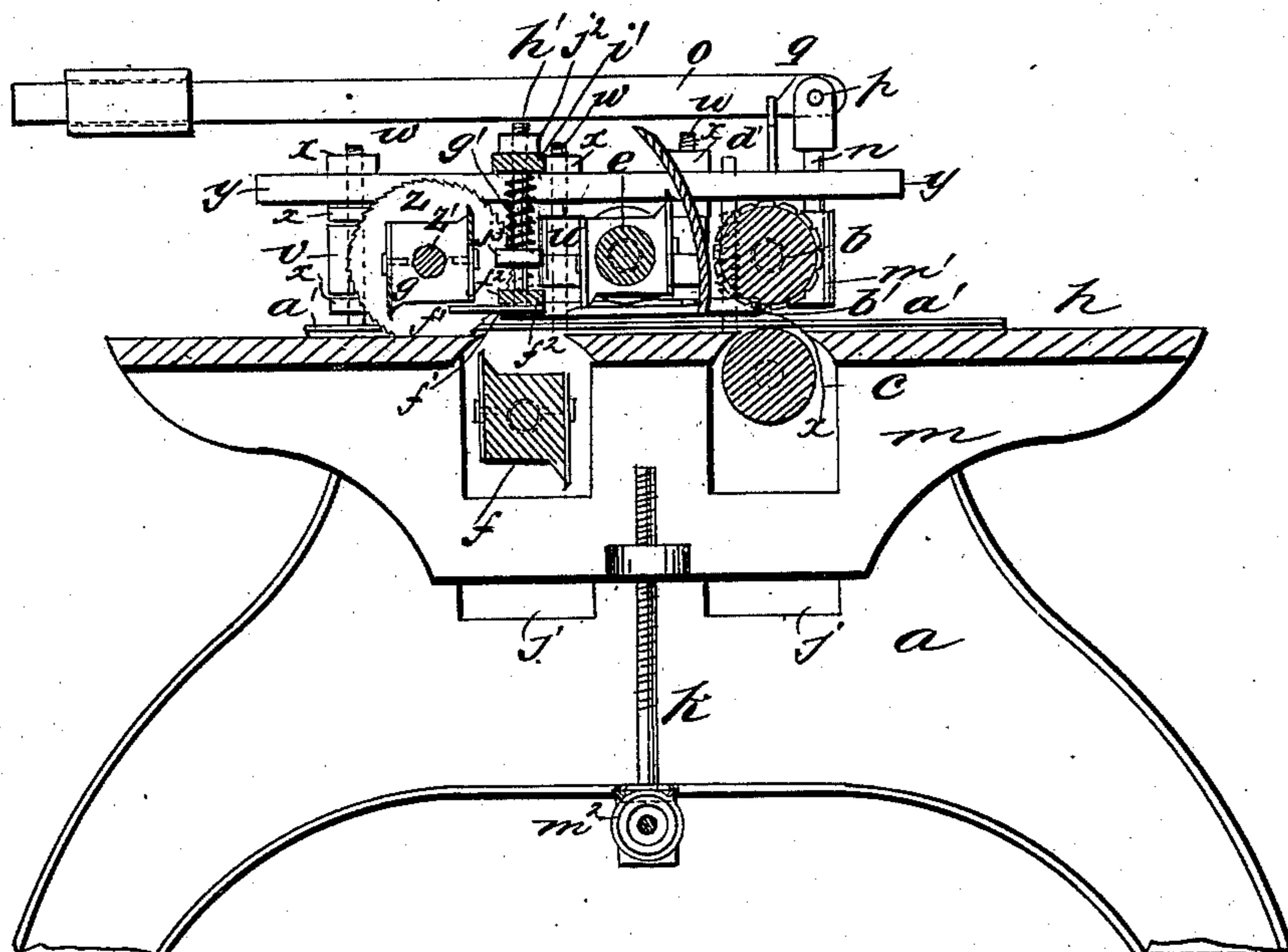


Fig. 4



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WILBER F. COWLES, OF ST. MARY'S, AND JAMES WOOLWORTH, OF  
SANDUSKY, OHIO.

## WOODEN-STIRRUP MACHINE.

SPECIFICATION forming part of Letters Patent No. 294,203, dated February 26, 1884.

Application filed December 27, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, WILBER F. COWLES, of St. Mary's, in the county of Auglaize and State of Ohio, and JAMES WOOLWORTH, of Sandusky, Erie county, and State of Ohio, have invented a new and Improved Machine for Planing and Shaping Stirrup-Slats, of which the following is a full, clear, and exact description.

10 Our invention consists of a rotary planing-machine contrived with planers and trimming-saws and with feeding and controlling apparatus, whereby the slats to be made into stirrups may be received from the sawing-machine in which they are made, surfaced on the outside, shaped on the inside, and trimmed at the ends suitably for being finally bent into the form in which they are finished, all as hereinafter fully described.

20 Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the machine with the shafts of the feed-rolls and planers cut off outside of the bearings. Fig. 2 is a plan view with some parts in section. Fig. 3 is a rear end elevation, and Fig. 4 is a longitudinal sectional elevation on the line *x x* of Fig. 2.

30 Between the side frames or housings, *a*, in which the bearings for the feed-rolls *b* and the planers *e* and *g* are mounted, we arrange the vertically-adjusting table *h* by guide-lugs *i* in the vertical slots *j* of the housings, adjusting-screws *k*, and the binding-screws *l*, the lugs *i* being attached to the side pieces, *m*, of said table, which fit loosely between the side frames or housings, *a*. On the side pieces, *m*, and the guide-lugs *i* of this table we mount the lower feed-roll, *c*, under roll *b*, and the lower planer, *f*, between planers *e* and *g*, in suitable bearings, so that said feed-roll and lower planer may be shifted up and down with the table, according as the stirrup-slats are to be made thicker or thinner. The boxes *m'* of the upper feed-roll are fitted to shift up and down on the rods *n*, firmly screwed into the top of the housings *a*, and having the weighted levers *o* pivoted to their upper ends at *p*, which levers bear the feed-roll down by the rods *q*, to cause them to

grip the stirrup-slats with sufficient power to feed them to the planers. The slats are pushed along one by the other after they pass from between the feed-rolls. The boxes *u* and *v* of the upper planers are supported on the rods *w*, between the bars *y* and the top of the housings *a*, by nuts *x*, which also hold bars *y*, enabling said planers *e* and *g* to be shifted up or down to set them relatively to the table *h*, according as they are required to dress the slats on the upper or inner surfaces. Along each side of the table, and at the ends of the feed-rolls and planers, guide-strips *a'*, of thin metal, are provided, with pressers *b'*, of thicker and stronger material, over them, and having presser-springs *c'*, fitting on guide-rods *d'*, to press down the ends of the slats and hold them on the table. From the feed-rolls the wood slats are delivered first to the upper planer, *e*, the blades of which are notched or divided at *e'*, Fig. 2, to skip that part of the wood slat that forms the inside foot-piece or platform of the stirrup, and plane the parts each side of said middle portion, which are to be bent up and form the sides of the stirrup. From the first planer, *e*, the slats pass over the lower planer, *f*, the blades of which act alike throughout the whole length of the slat and dress the lower or outer surface true. While passing over the planer *f* the slat is prevented from springing up from the pressure of the planer by the pressers *f'* on rods *h'*, fitted in guide-bars *f<sup>2</sup>* and *i'*, with springs *g'* to press them down, and with adjusting-nuts *j<sup>2</sup>* to limit the descent of the pressers, and nuts *j<sup>3</sup>* to regulate the pressure. The guide-bar *f<sup>2</sup>* is attached to bars *b'* for its support, and bar *i'* is fixed at the ends on the bars *y*, and secured in any suitable way to them. From over the lower planer the slats pass on under the short upper planer, *g*, and between the two end-trimming saws *z*, by which the platform or foot-piece and the ends are dressed to size and shape. The upper planers, *e* and *g*, will be suitably shaped on their cutting-edges to produce the required forms of the parts of the slats they are to dress, while the lower planer, *f*, will have straight edges throughout its length for surfacing the slats on the outside. The saws *z* and planer *g* are mounted on one shaft, *z'*. The planers are to be fitted with

driving-belts at both ends, which have the usual belt-pulleys,  $z^2$ , therefor, to enable them to run truer and better than if belted on one end only, and the feed-rolls are geared together at both ends by the toothed wheels  $k'$ . The power may be applied to the feed-rolls by any approved means. The adjusting-screws  $k$  are geared with a shaft,  $l'$ , by bevel-wheels  $m^2$ , to which shaft a crank,  $n'$ , is to be applied at  $o'$ , for turning it when required.

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

1. The combination, in a stirrup-slat-planing machine, of the forward upper planer,  $e$ , fitted with notched or spaced knives adapted to plane the inside portions of the stirrup-slat, except the platform, narrow upper rear planer,  $g$ , adapted to plane the platform portion of the slat, and the lower middle planer,  $f$ , having cutters adapted to surface the outside portion of the stirrup-slat, said machine having suitable feed-rolls, substantially as described.

2. The combination, in a stirrup-slat-planing machine, of the upper forward planer,  $e$ , fitted with notched or spaced knives adapted to plane the inside portions of the stirrup-slat, except the platform, narrow upper rear planer,  $g$ , adapted to plane the platform portion of the slat, saws  $z$  on the shaft  $z'$ , on both sides of the planer  $g$ , for trimming the ends of the slat, and the lower middle planer,  $f$ , adapted to surface the outside portion of the stirrup-slat, said machine being provided with suitable feed-rolls, substantially as described.

3. The combination, in a stirrup-slat-planing machine, of the upper forward planer,  $e$ ,

fitted with notched or spaced knives adapted to plane the inside portions of the stirrup-slat, except the platform, narrow upper rear planer,  $g$ , adapted to plane the platform portion of the slat, lower planer,  $f$ , adapted to surface the outside portion of the stirrup-slat, and the pressers  $f'$ , mounted on vertical guide-rods above the table and on both sides of it, to hold the stirrup-slats against the pressure of the planer  $f$ , substantially as described.

4. The combination, in a stirrup-slat-planing machine, of the upper table-planers,  $e g$ , and upper feed-roll,  $b$ , mounted in suitable boxes sliding on vertical bars on the side frames or housings,  $a$ , and the lower planer,  $f$ , and lower feed-roll,  $c$ , journaled below the table  $h$ , said table being provided at its sides with blocks  $i$  and binding-screws  $l$ , working in slots in the sides of said housings  $a$ , and provided with means for adjusting the said planer  $f$  and feed-roll  $c$  to and from the upper planer and feed-roll, mounted on said housings, substantially as described.

5. The guides  $a'$ , presser-bars  $b'$ , presser-springs  $c'$ , and rods  $d'$ , mounted on each of the housings above and on each side of the table  $h$ , combined with the feed-rolls  $b c$ , planers  $e f g$ , and the table  $h$ , substantially as described.

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JAMES WOOLWORTH.

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Witnesses to the signature of James Woolworth:

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