No. 812,461. PATENTED FEB. 13, 1906.

H. L. STALEY.

MACHINE FOR SHAPING CHAIR LEGS FOR ROCKERS.

APPLICATION FILED JULY 31, 1905.

4 SHEETS—SHEET 1.

Fig. 1.

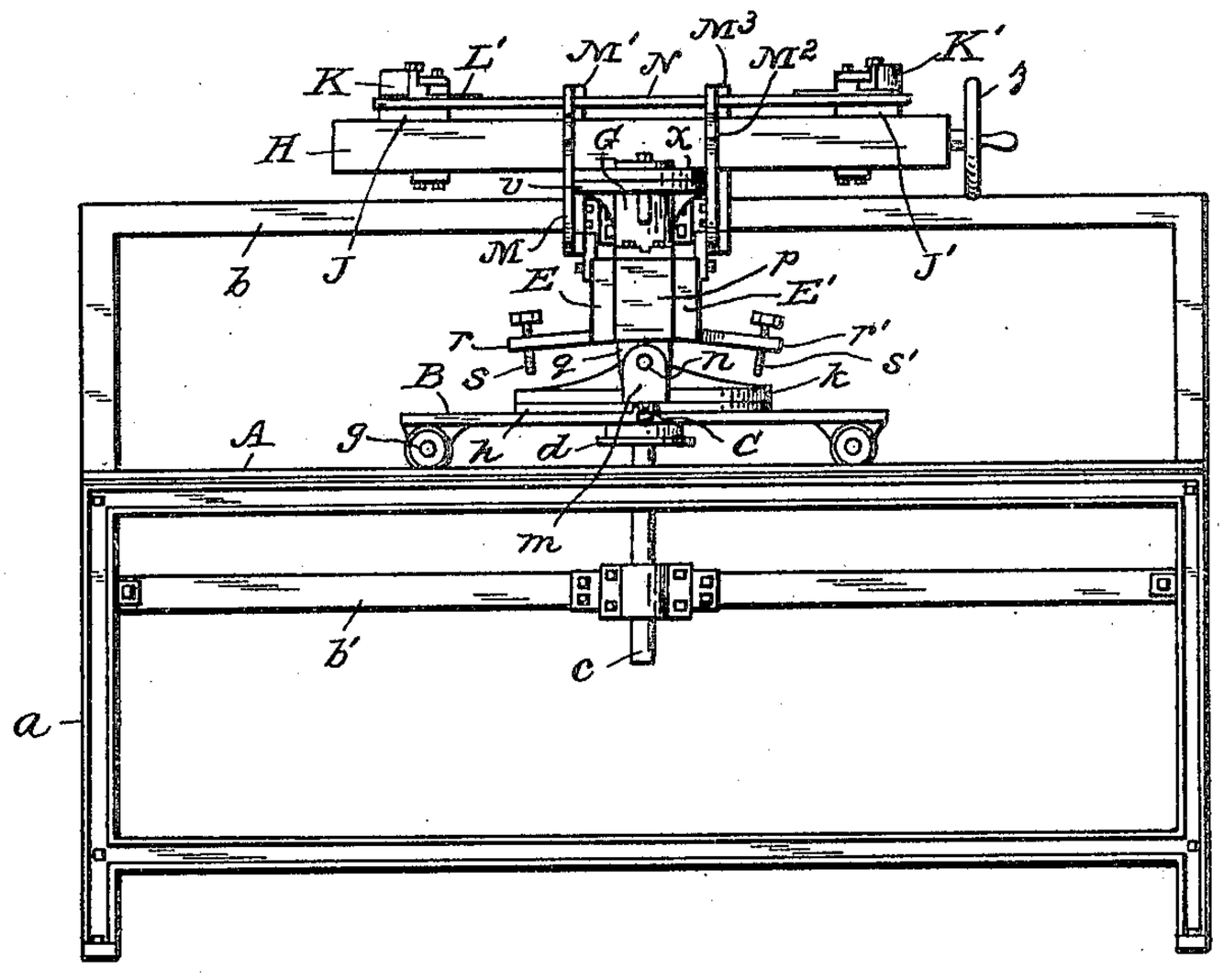
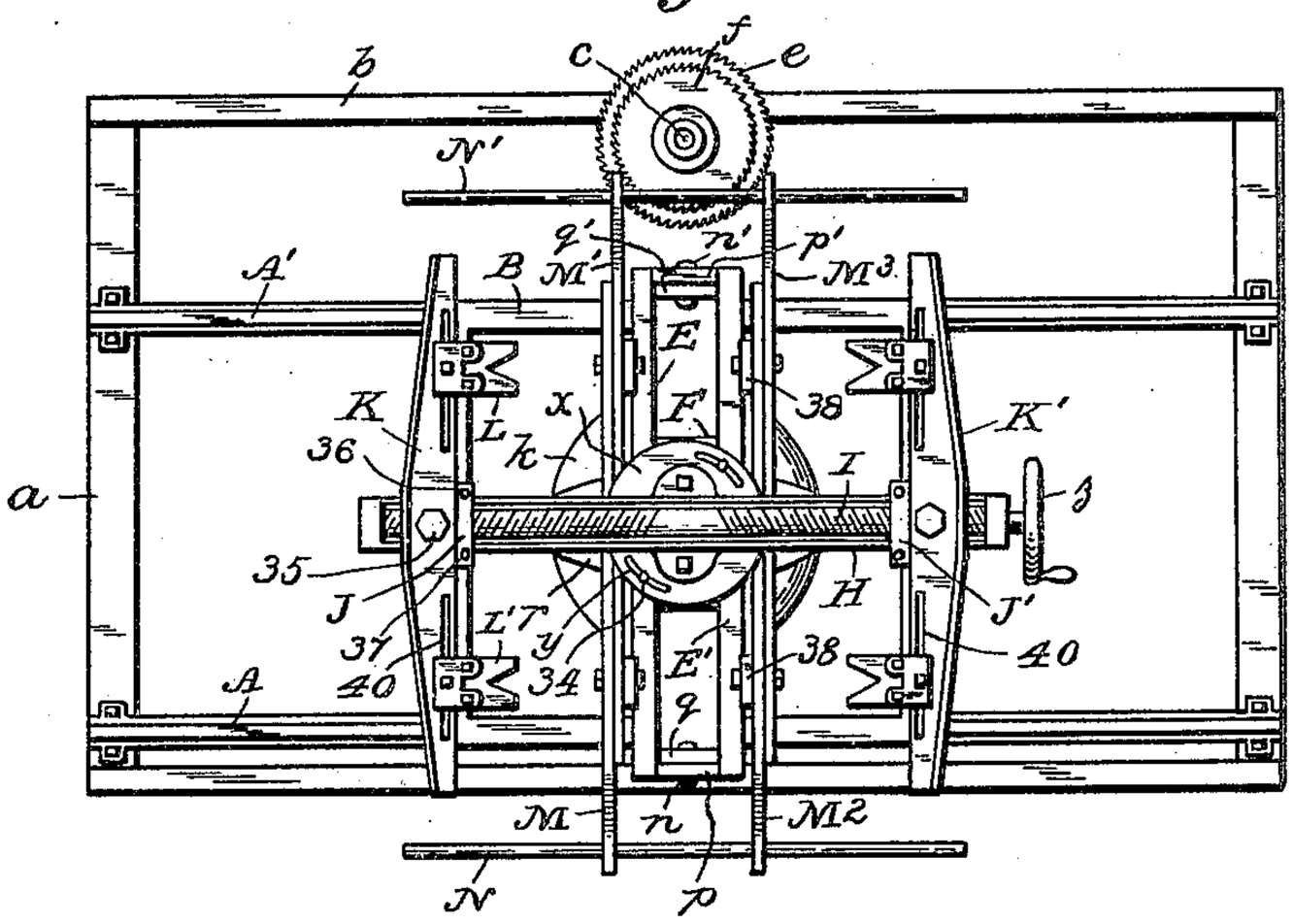


Fig. 2.



Witnesses:

Wm. H. Payne.

Stella Snider.

Inventor:

Harrison L. Staley.

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Attorney.

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4 SHEETS—SHEET 2.

Fig. 3.

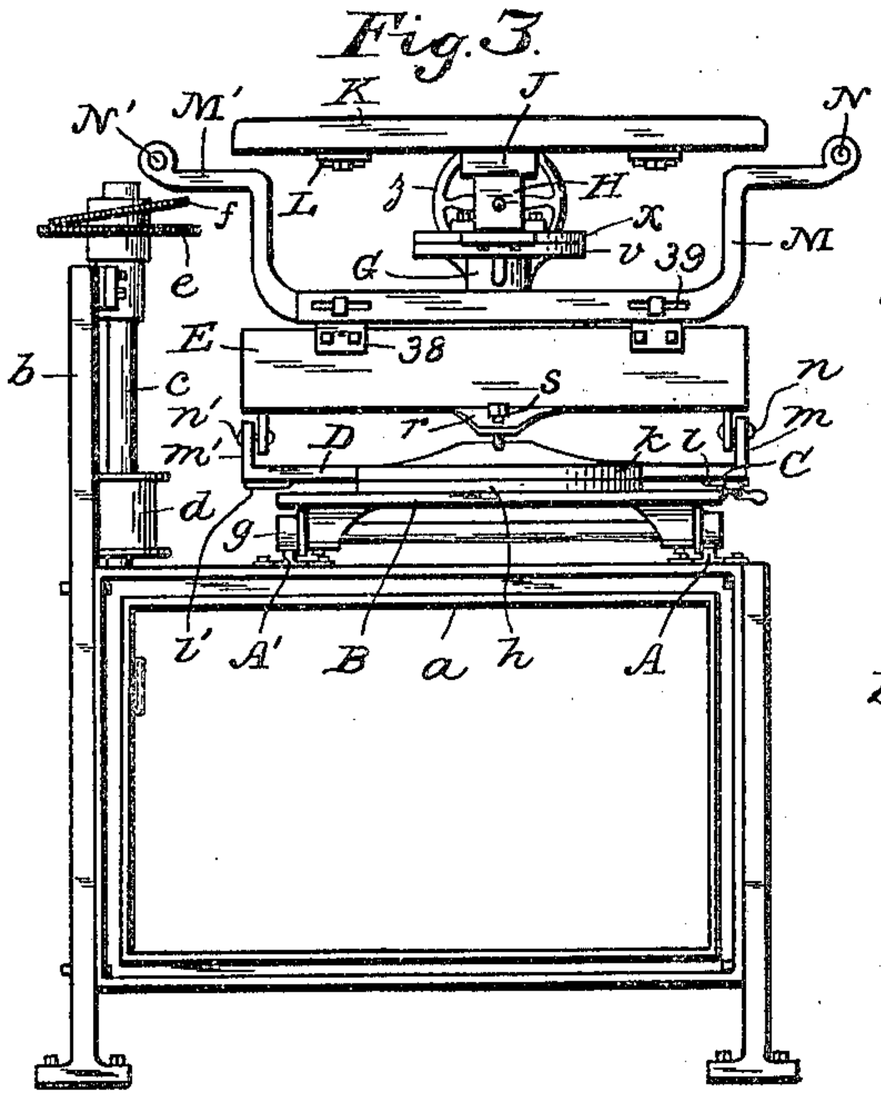


Fig. 4.

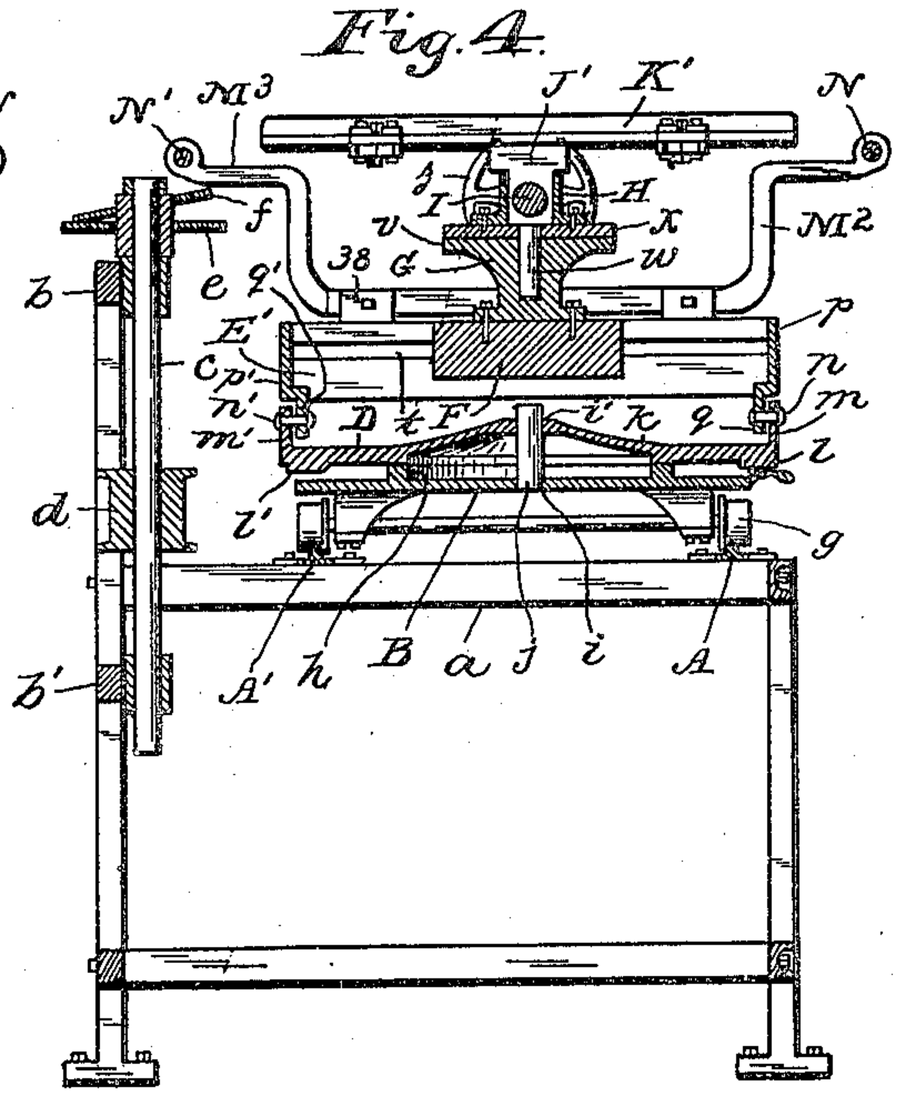


Fig. 5.

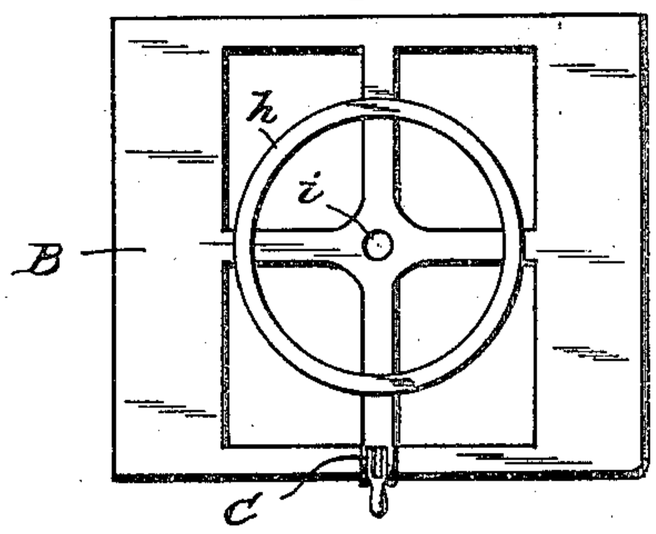


Fig. 6.

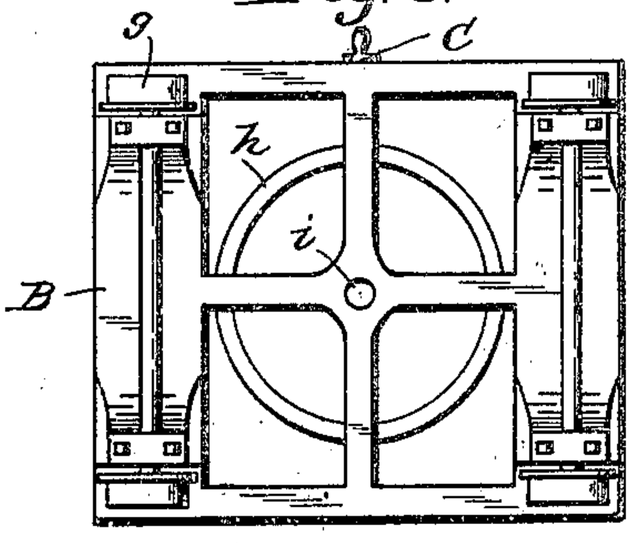


Fig. 7.

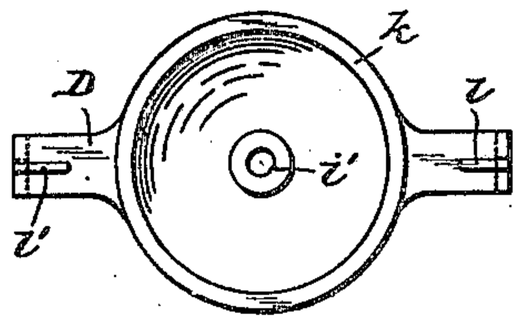


Fig. 8.

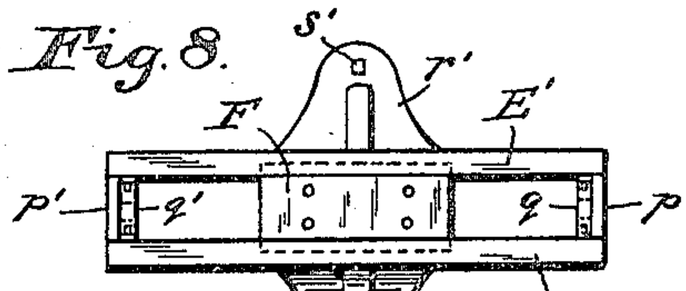
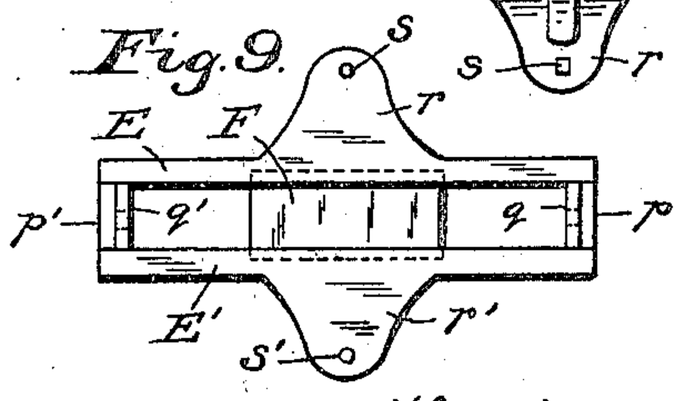


Fig. 9.



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4 SHEETS—SHEET 3.

Fig. 10.

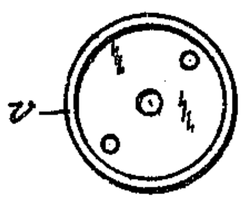


Fig. 12.

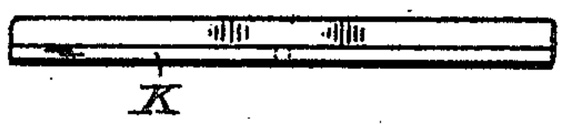


Fig. 14.

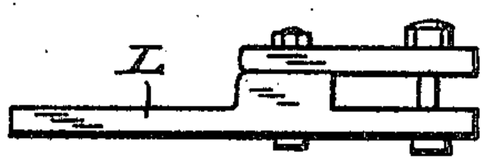


Fig. 11.

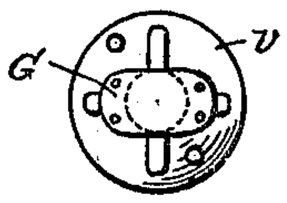


Fig. 13.

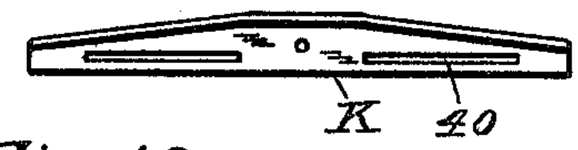


Fig. 15.

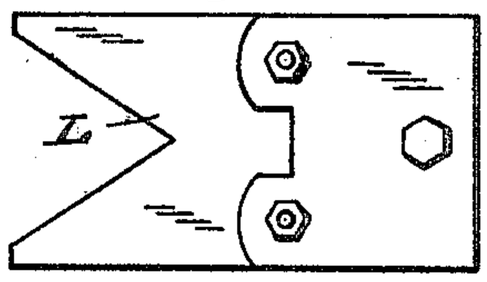


Fig. 16.

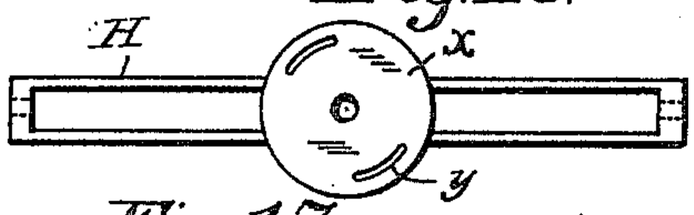


Fig. 17.

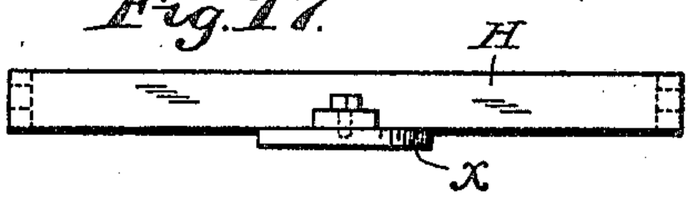


Fig. 18.

Fig. 19.

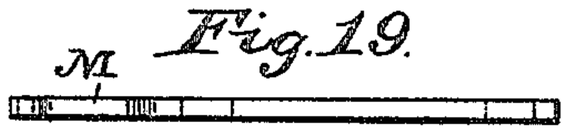


Fig. 20.

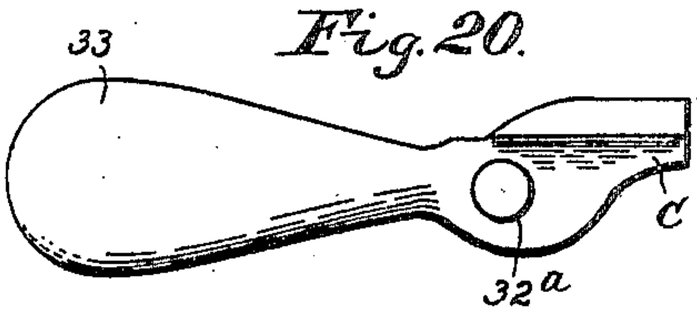


Fig. 21.

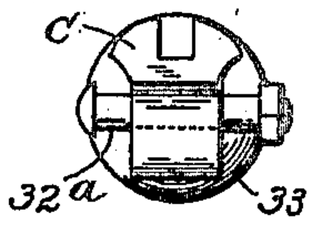


Fig. 22.

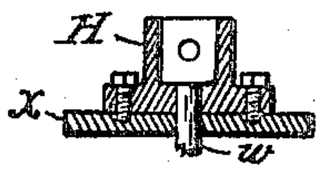


Fig. 23.

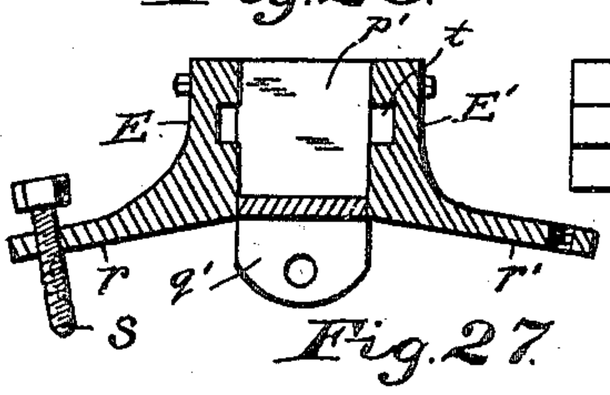


Fig. 24.

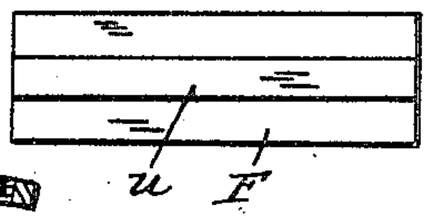


Fig. 25.

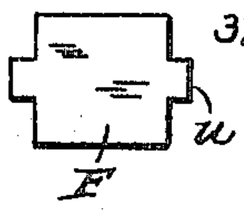


Fig. 26.

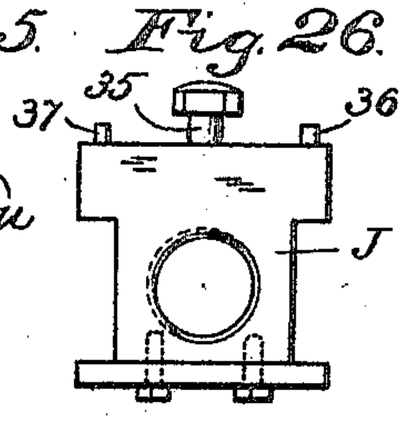


Fig. 27.

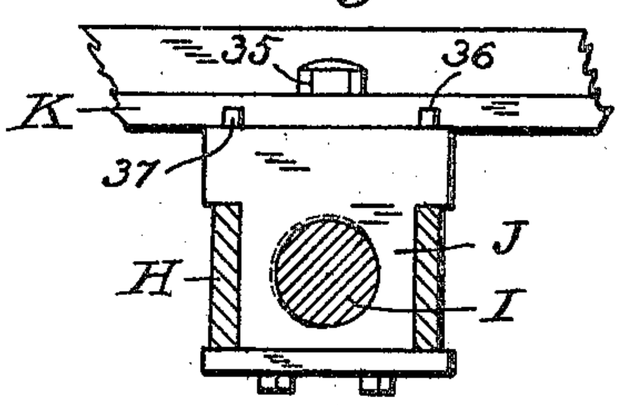


Fig. 28.

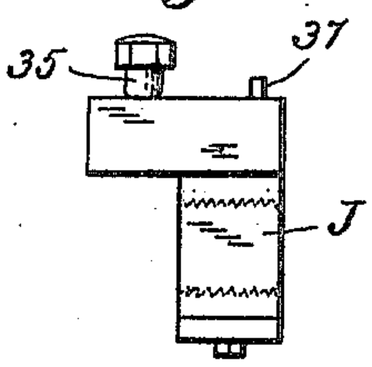
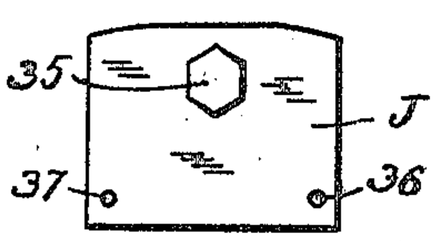


Fig. 29.



Witnesses:

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APPLICATION FILED JULY 31, 1905.

4 SHEETS—SHEET 4.

Fig. 30.

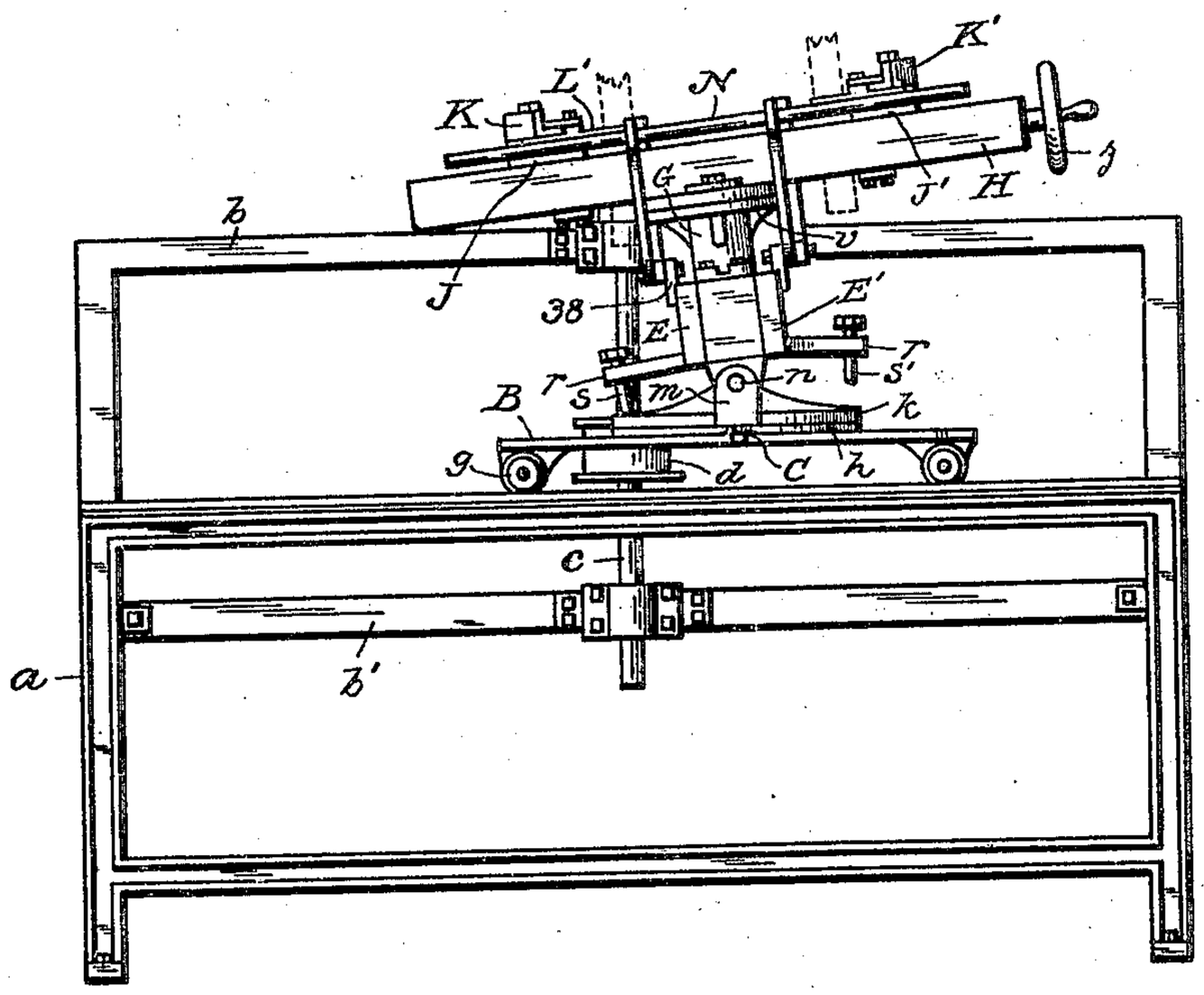


Fig. 31.

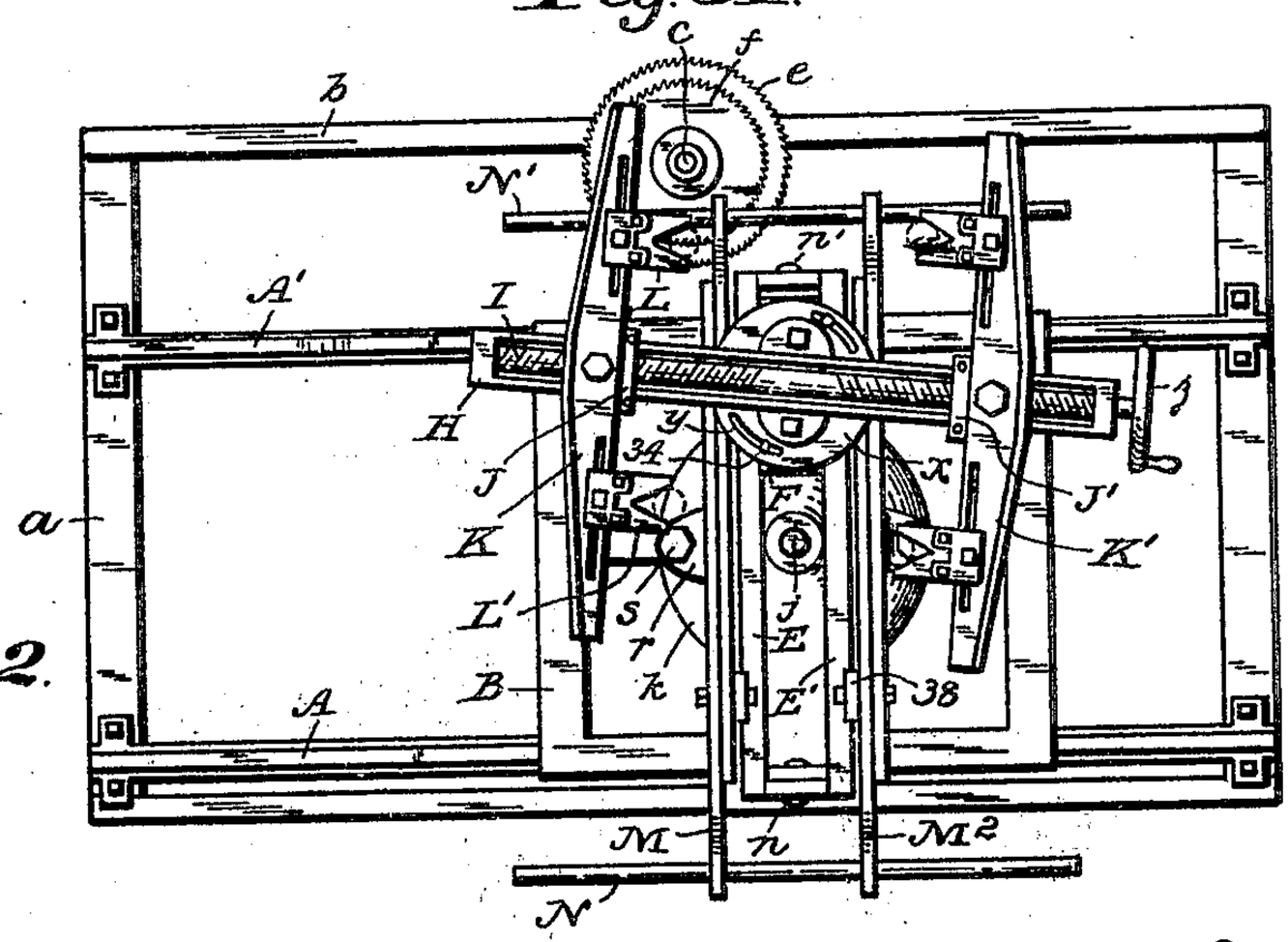
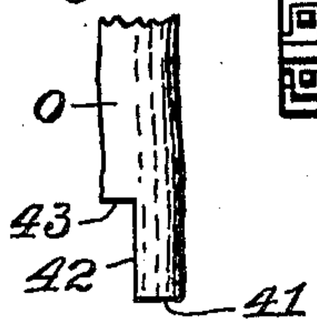


Fig. 32.



Witnesses:

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UNITED STATES PATENT OFFICE.

HARRISON L. STALEY, OF MARTINSVILLE, INDIANA, ASSIGNOR TO THE OLD HICKORY CHAIR COMPANY, OF MARTINSVILLE, INDIANA, A CORPORATION OF INDIANA.

MACHINE FOR SHAPING CHAIR-LEGS FOR ROCKERS.

No. 812,461. Specification of Letters Patent. Patented Feb. 13, 1906.

Application filed July 31, 1905. Serial No. 272,116.

To all whom it may concern:

Be it known that I, HARRISON L. STALEY, a citizen of the United States, residing at Martinsville, in the county of Morgan and State of Indiana, have invented new and useful Improvements in Machines for Shaping Chair-Legs for Rockers; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to machines that are designed to accurately shape the ends of chair-legs to receive rockers in the manufacture of rocking-chairs, the invention having particular reference to machines that are designed to cut off the surplusage stock from the ends of the chair-legs and at the same time cut seats for the rockers, having special reference to chairs that are made from wood in the bark.

Objects of the invention are to provide a machine in which a chair may be set and have all of its legs shaped accurately and adapted to receive rockers without requiring resetting of the chair, to the end that the operations may be expedited, and consequently cheapened, as a result of avoiding repeated handling of the chair.

A further object is to provide machines whereby the factory product may be increased and by the use of which antiquated machinery may be dispensed with and floor-space enhanced in value.

The invention consists of a machine comprising a rotative tool-head carrying cutters, a movable truck, a tilting top turnable on the truck supporting a carriage on which a chuck is pivoted for holding a chair in contact with the cutters, the turn-table also supporting gages for the chair-legs; and the invention consists, further, in the novel parts and the combinations and arrangements of parts, as hereinafter particularly described and claimed.

Referring to the drawings, Figure 1 is a front elevation of the machine in which the invention is embodied; Fig. 2, a top plan thereof; Fig. 3, an end elevation thereof; Fig. 4, a transverse vertical central sectional view thereof; Fig. 5, a top plan, and Fig. 6 a bottom plan, of the truck; Fig. 7, an inverted plan of the lower part of the turn-table; Fig. 8, a top plan, and Fig. 9 a bottom plan, of the upper or tilting part of the turn-table; Fig. 10, a top plan, and Fig. 11 a bottom plan, of the upper part of the carriage; Fig. 12, a front elevation, and Fig. 13 a top plan, of one of the chuck-arms; Fig. 14, a side elevation, and Fig. 15 a top plan, of one of the jaws of the chuck; Fig. 16, a bottom plan, and Fig. 17 a side elevation, of the chuck-body; Fig. 18, a side elevation, and Fig. 19 a top plan, of one of the gage-arms; Fig. 20, a side elevation, and Fig. 21 an end elevation, of the turn-table latch; Fig. 22, a transverse sectional view at the center of the chuck-body; Fig. 23, a transverse sectional view of the tilting part of the turn-table; Fig. 24, a side elevation, and Fig. 25 an end elevation, of the lower part of the carriage; Fig. 26, an end elevation of one of the nuts of the chuck; Fig. 27, a transverse sectional view of the chuck-body having the chuck screw and nut and a chuck-arm connected together therewith; Fig. 28, a side elevation, and Fig. 29 a top plan, of a chuck-nut; Fig. 30, a front elevation of the machine, showing the chuck thereof tilted for shaping a rear leg of a chair; Fig. 31, a top plan of the machine, showing the chuck as swung on its pivot for shaping two legs one after the other, and Fig. 32 a fragmentary elevation of a chair-leg that has been shaped by the machine to receive the rocker.

In the drawings, the diagrams in broken lines in Figs. 30 and 31 indicate the positions of the chair-legs.

Similar reference characters in the several figures of the drawings designate corresponding elements or features.

In a practical embodiment of the invention a suitable frame is provided comprising a main part *a*, on which a pair of horizontal track-rails A and A′ are mounted, and a rear part *b*, extending upwardly from the main part, the frame comprising also a support *b*′ for the lower end of a rotative shaft *c*, which is mounted thereon and on the part *b* of the frame, the shaft having a drive-pulley *d*. A tool-head and cutters of any desirable construction may be mounted on the top of the shaft *c*, suitable simple cutting devices being a cut-off saw *e* and also a wabble-saw *f* of less

diameter than the saw *e* and arranged on the top thereof.

A truck B, having four wheels *g*, is mounted thereby on the track-rails A and A′, and it has an annular bearing *h* on its top and also a central pivotal point *i*, at which is a pivotal center pin *j*. The front of the truck is provided with a turn-table latch C, hung on a pivot 32ª, and it has a gravity-handle 33.

A turn-table lower part or base D has an annular bearing *k* and a central pivotal point *i′* at the center pin *j*, about which the turn-table may move on the truck, the ends of the turn-table having projections *l* and *l′*, either one of which may be carried thereby into engagement with the latch C to latch the turn-table to the truck, the latch having a recess to receive the projection. The turn-table part D has upwardly-projecting ears *m* and *m′* at its ends, provided with pivots *n* and *n′*. The turn-table comprises also an upper tilting part consisting of a pair of guide-bars E and E′, having connecting ends *p* and *p′*, to which are attached ears *q* and *q′*, that are mounted on the pivots *n* and *n′*. The tilting part has lateral arms *r* and *r′*, to which are connected adjusting-screws *s* and *s′*, that are designed to engage the base part of the turn-table, either one of the adjusting-screws at a time when the tilting of the upper part takes place. The guide-bars have each a guide-groove *t* extending longitudinally in its inner face. A carriage is mounted on the turn-table and comprises a base part F, having guide-tongues *u* slidingly mounted in the grooves *t* of the guide-bars, and a pivotal part G, secured on the top of the base part F, the part G having an annular bearing *v* at its top and also a center pin *w*, on which to pivot the chuck.

The chuck comprises a body H, having an annular bearing *x*, that is mounted on the bearing *v* of the carriage, so as to swing about the axis of the center pin *w*, there being slots *y* in the bearing *x*, through which retaining-screws 34 extend, which are attached to the bearing *v*. The body H is channeled, and in the channel a screw I is mounted rotatively, the screw having right and left hand threads and provided with a hand-wheel *z*. A pair of nuts J and J′ are mounted slidingly on the body H and serve as cross-heads, the screw I extending through both nuts for their operation. The chuck comprises also a pair of arms K and K′, which are mounted on the nuts by means of pivots 35, the pivotal movements of the arms being limited by stops 36 and 37, that are attached to the nuts. Each arm of the chuck is provided with a pair of V-shape centering-jaws L and L′, that are secured adjustably thereto, the jaws being movable along the arm and the jaws of either arm opposing the jaws of the other arm. The arms preferably have guide-slots 40 for the jaws. The tilting part of the turn-table is provided with ears 38, to which are adjustably secured a pair of arms M and M², supporting a gage-bar N, and arms M′ and M³, supporting a gage-bar N′, the arms having slots 39, through which suitable binding-bolts extend for holding the arms rigidly when adjusted. By reason of the slots in the arms the gage-bars may be moved adjustably toward or away from the axis of the tool-head, so that more or less wood may be cut away from the sides of the chair-legs, which are to be placed in contact with the gage-bars and gaged thereby with respect to the cutters.

In Fig. 32 a chair-leg has its end 41 trimmed to proper length, a side bearing 42, shaped to fit a side of a rocker, and a shoulder 43, shaped to fit the top of the rocker.

Minor parts not particularly mentioned herein may obviously be provided of suitable construction as a matter of mechanical expediency, and various parts mentioned may be somewhat modified as may be desired within the scope of the invention.

Various suitable gages may be provided whereby to set the chairs in the chuck so that the legs of all chairs may be cut off to uniform lengths, if desired. In the absence of gages some chairs may have their legs shortened more than those of others, which may in some cases be desirable.

In practical use a chair may be placed uprightly above the machine with the lower portions of its legs in the jaws of the chuck, and thereby secured by manipulating the hand-wheel *z* of the chuck-screw. The adjusting-screws *s* and *s′* are to be set so as to provide for proper degrees of inclination of the chair-legs, so that the shoulders 43 may be formed to suit the shapes of the tops of the rockers, the shoulders, however, being straight when formed, while the rockers may be slightly curved. The truck may be moved toward either end of its track, and the carriage may be moved toward either end of the turn-table, so that two of the chair-legs may be moved into contact with either one of the gage-bars N or N′, a front leg and a rear leg being in contact at a time with a gage-bar, the gage-bars having been set so that the bearings 42 may be properly shaped by the wabble-saw while the ends of the legs are properly trimmed. After one leg is shaped the turn-table is to be tilted, and then the truck is to be moved so as to carry the other leg to the cutters. Then the chuck is to be turned about by means of the turn-table, so that the legs at the other side of the chair may be shaped.

Having thus described the invention, what is claimed as new is—

1. A shaping-machine including a chuck comprising a body, a pair of cross-heads mounted slidingly on the body, arms pivoted on the cross-heads and having each a pair of jaws mounted thereon for holding a chair by

its legs, means for controlling the cross-heads, and cutters for shaping the ends of the chair-legs.

2. A shaping-machine including a frame supporting rotative cutters, a truck mounted movably on the frame, a turn-table mounted on the truck, a carriage mounted movably on the turn-table, a chuck pivoted on the carriage and having means for holding a chair, and a gage arranged relatively to the cutters to be engaged by legs of the chair.

3. A shaping-machine including a frame supporting rotative cutters, a truck mounted movably on the frame, a turn-table mounted on the truck and having a tilting upper part, a carriage mounted movably on the tilting upper part of the turn-table, a chuck pivoted on the carriage for holding a chair, and a gage arranged with respect to the cutters to be engaged by legs of the chair.

4. A shaping-machine including a frame having a pair of track-rails mounted thereon, a truck having wheels mounted on the track-rails, a turn-table pivoted on the truck, a movable latch for holding the turn-table against rotation on the truck, a carriage mounted slidingly on the turn-table, a pair of gage-bars mounted adjustably on the turn-table, a chuck pivoted on the carriage for carrying a chair by its legs to the gage-bars, and rotative cutters for shaping the ends of the chair-legs to receive rockers.

5. A shaping-machine including a frame, a pair of track-rails mounted on the frame, a truck having wheels mounted on the track-rails, a turn-table part pivoted to the truck, a latch for the turn-table part, a pair of guide-bars connected together and pivoted on the turn-table part and comprising a tilting part of a turn-table, adjusting devices for limiting the movements of the tilting part of the turn-table, a pair of gage-bars mounted in arms that are adjustably supported by the tilting part of the turn-table, a carriage supported slidingly by the pair of guide-bars that comprise the tilting part of the turn-table, a chuck pivoted on the carriage for supporting a chair with a pair of its legs against one of the gage-bars, and rotative cutters for shaping the ends of the chair-legs.

6. A shaping-machine including a frame comprising a main part supporting a pair of track-rails and also a rear upright part extending upwardly from the main part, a rotative shaft carrying cutters and mounted on the upright part of the frame, a truck mounted upon the track-rails, a turn-table pivoted upon the truck, a latch for the turn-table, a carriage mounted movably on the turn-table, a chuck pivoted on the carriage and comprising a body part having a pair of arms mounted movably thereon and each provided with a pair of jaws supported adjustably thereby, means for operating the arms, means for equalizing the pressure between all of the jaws of the arms collectively against chair-legs to be held thereby, and a gage-bar arranged with respect to the cutters to be engaged by chair-legs to be held by the jaws.

7. A shaping-machine including a frame provided with a pair of track-rails, a rotative shaft mounted on the frame and carrying a cut-off saw and a wabble-saw, a wheeled truck mounted on the track-rails, a turn-table pivoted upon the truck, a latch for the turn-table, a carriage mounted movably on the turn-table, a chuck pivoted on the carriage and comprising a body part having a screw mounted rotatively thereon, a pair of nuts mounted on the body part and engaged by the screw, and arms pivoted on the nuts and provided each with a pair of jaws having V-shaped engagement-fronts; a pair of gage-bars for gaging the movements of the chuck with respect to the saws, and means for tilting the chuck relatively to the saws.

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

HARRISON L. STALEY.

Witnesses:

HENRY S. LEWIS,

W. R. MCCRACKEN.