

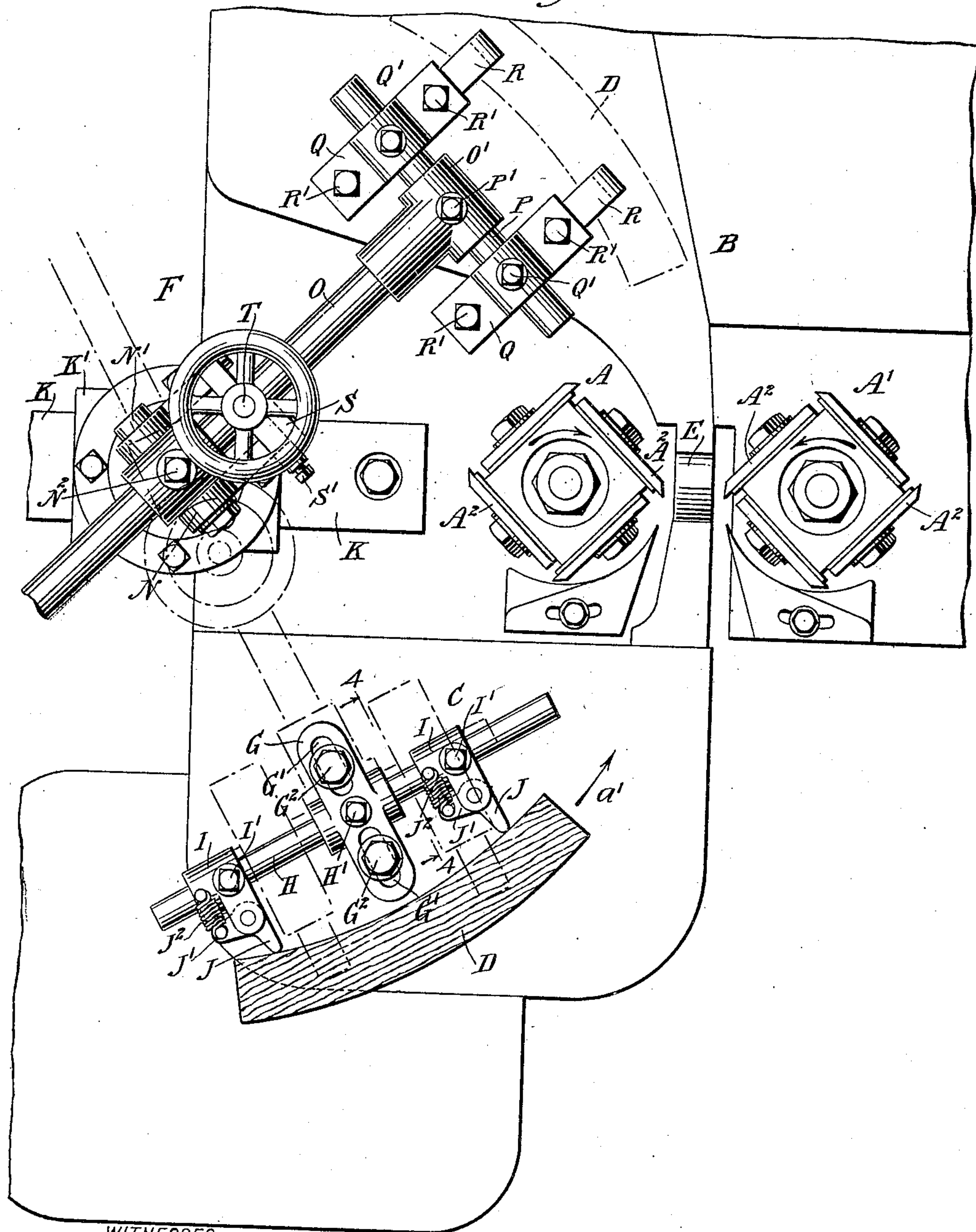
No. 819,528.

PATENTED MAY 1, 1906.

G. A. ENSIGN.
PLANING MACHINE.
APPLICATION FILED OCT. 18, 1905.

2 SHEETS—SHEET 1.

Fig. 1,



WITNESSES:

Edward Thorpe.
Reed. Koster.

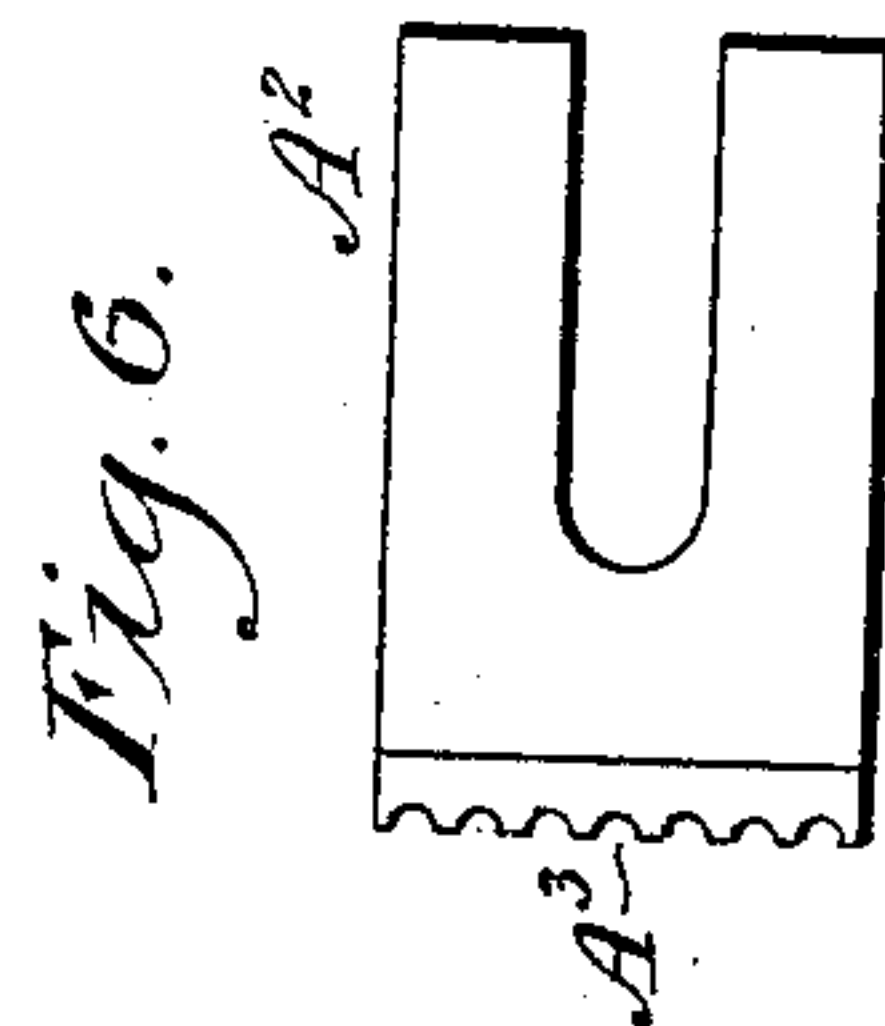
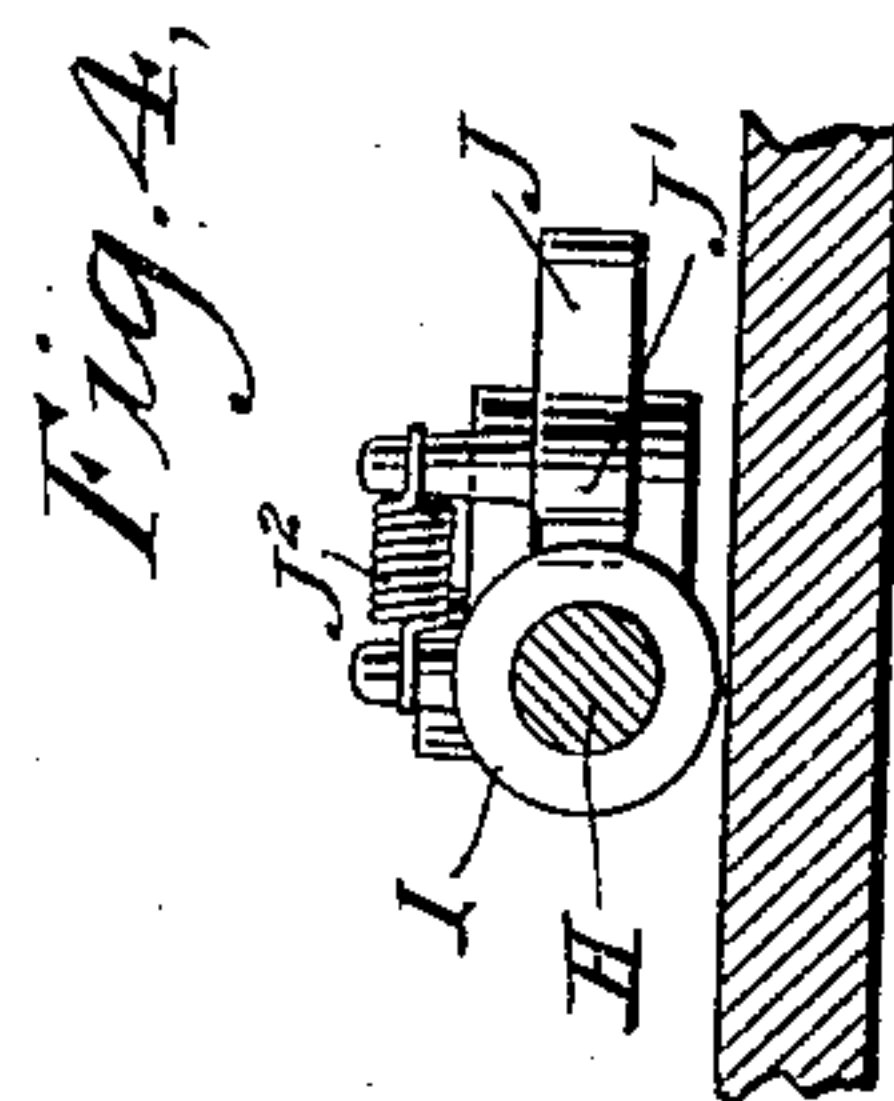
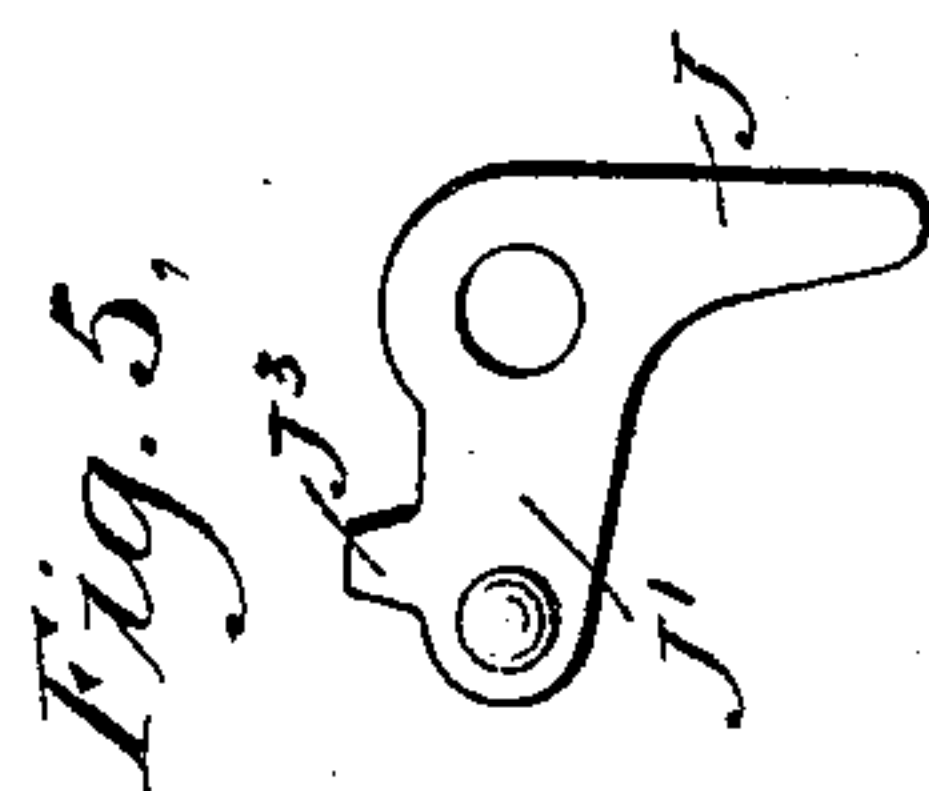
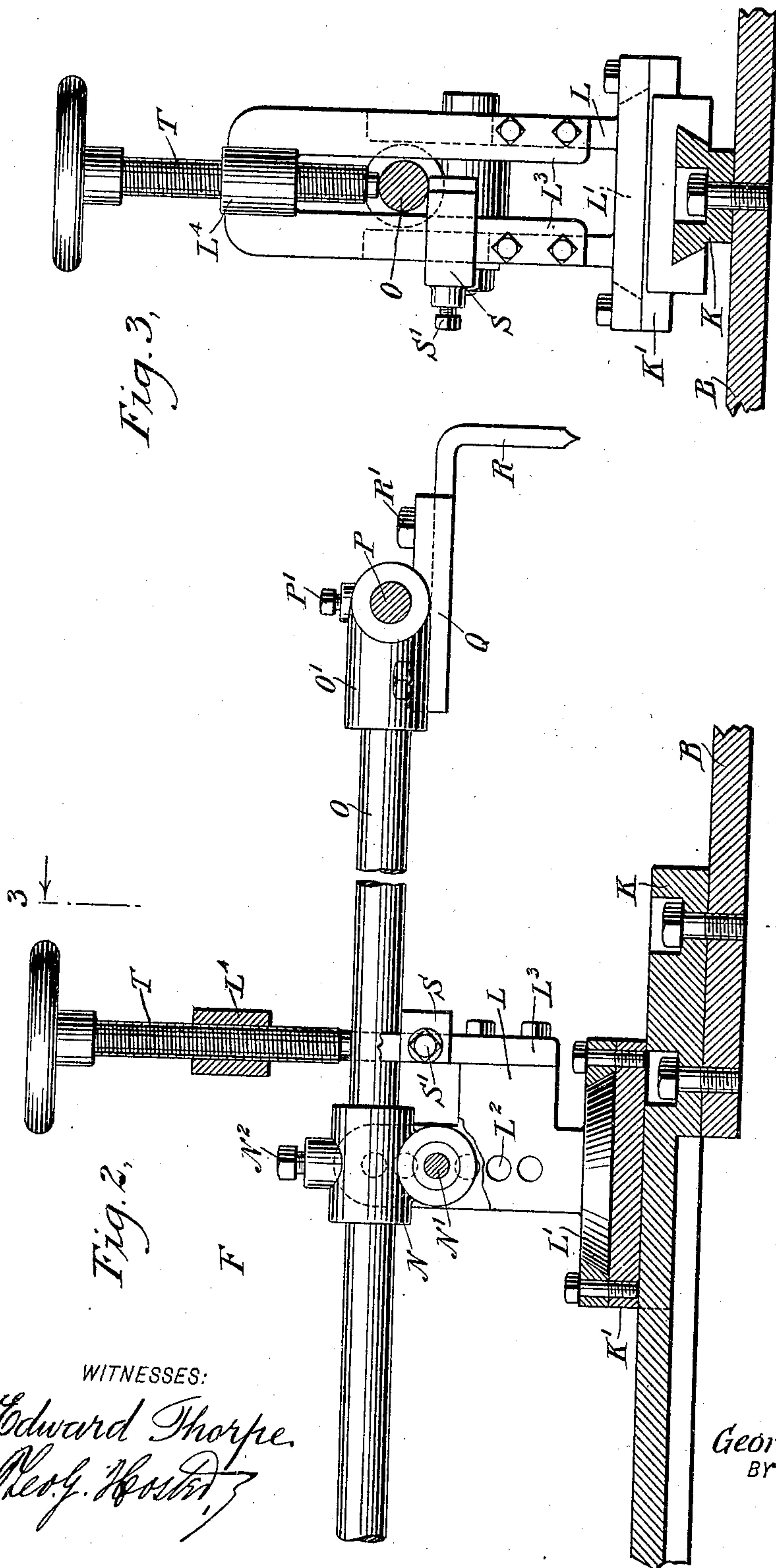
INVENTOR
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APPLICATION FILED OCT. 18, 1905.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GEORGE A. ENSIGN, OF DEFIANCE, OHIO, ASSIGNOR TO THE DEFIANCE MACHINE WORKS, OF DEFIANCE, OHIO.

PLANING-MACHINE.

No. 819,528.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed October 18, 1905. Serial No. 283,257.

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 Planing-Machine, of which the following is a full, clear, and exact description.

The invention relates to woodworking machinery, and more particularly to planing apparatus such as shown and described in the Letters Patent of the United States No. 557,327, granted to me March 31, 1896.

The object of the invention is to provide a new and improved planing-machine for planing fellies cut from the solid wood and without danger of splitting or roughening the inner and outer peripheral surfaces.

The invention consists of novel features and parts and combinations of the same, which will be more 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 plan view of the improvement. Fig. 2 is an enlarged sectional side elevation of the felly-feeding device, parts being broken out. Fig. 3 is a transverse section of the same on the line 3-3 of Fig. 2. Fig. 4 is a cross-section of the centering device, the section being on the line 4-4 of Fig. 1. Fig. 5 is a plan view of one of the centering-fingers, and Fig. 6 is a face view of one of the cutters of the cutter-head.

The spaced cutter-heads A and A' of the planing-machine are mounted to turn in the usual manner above a feed-table B, on which is mounted a centering device C for centering a felly D previous to its passage between the cutter-heads A and A' for the latter to plane the inner and outer segmental faces thereof. The felly D is moved from the centering device C over the table A and between the cutter-heads A and A' while in a centered position, so that the cutter-heads properly plane the inner and outer segmental surfaces of the said felly, the latter during its passage between the cutter-heads A and A' also traveling over the usual feed-roller E, located between the cutter-heads A and A' and having its top approximately flush with the top of the table B. In order to move the felly D in

the manner described, a manually-controlled feed device F is provided, adapted to take hold of the felly D at the centering device C and carry it in the centered position between the cutter-heads for the latter to plane the same.

The centering device C is arranged as follows: On the table B is fastened a bracket G, having elongated grooves G', through which extend bolts G², screwing in the feed-table for securing the bracket G in position thereon and for allowing transverse adjustment of the said bracket. In the bracket G is secured an arm H by the use of a set-screw H', and on the said arm, on opposite sides of the bracket G, are fastened collars I by set-screws I', and on each collar is pivoted a finger J, adapted to be engaged by the inner face of the felly D, as plainly indicated in Fig. 1. Each of the fingers J is provided with an offset J', connected with one end of a spring J², attached at its other end to the collar I, so as to allow the finger J to yield in one direction to compensate for any unevenness or roughness on the inner face of the felly D. A lug J³ on the offset J' and adapted to abut against the collar I serves to limit the swinging motion of the finger J in a reverse direction. By the arrangement described the bracket G may be transversely adjusted, while the collars I, carrying the fingers J, may be each independently adjusted on the arm H, so as to bring the terminals of the fingers J in proper position relative to the arc of the circle of the inner face of the felly D relative to the cutter-heads A and A'.

The feed device F is arranged as follows: A guideway K is bolted or otherwise secured to the table B, and on the said guideway K is mounted to slide longitudinally a base K', in which is mounted to turn the foot L' of a standard L, provided with a plurality of apertures L², located one above the other, as plainly shown in Fig. 2, and engaged by a pivot N', on which is mounted to swing a head N, in which is held longitudinally adjustable an arm O, adapted to be fastened in position on the said head N by a set-screw N². The forward end O' of the arm O is provided with a transversely-extending holder P, fastened in place by a set-screw P', and on the said holder P are secured carriers Q, fastened in position by set-screws Q', and

each of the said carriers Q is provided with a prong R, extending downwardly to engage the top surface of the felly D. Each of the prongs R is adjustably secured in the corresponding carrier Q by a set-screw R', and as each carrier Q is adjustably secured on the holder P it is evident that the two prongs R can be adjusted any desired distance apart, and the prongs R can be adjusted lengthwise in their carriers to properly engage the top surface of the felly D at or near the middle thereof. By engaging the pivot N' with any one of the apertures L² it is evident that the head N, and consequently the arm O and the parts supported thereby, can be raised or lowered to bring the points of the prongs R in proper contact with the top surface of the felly D, according to the latter's thickness.

In order to limit the swinging motion of the arm O and its head N, a stop S is provided, adjustably secured by a set-screw S' on a bracket L³, bolted or otherwise fastened to the standard L, and the upper end of the latter is provided with a nut L⁴, in which screws a screw-rod T, adapted to engage the top of the holder O, so as to fasten the latter in position between the stop S and the set-screw T to hold the arm O against swinging movement.

Each of the cutter-heads A and A' is provided with cutters A², each of which has its cutting edge A³ (see Fig. 6) notched or serrated, the serrations of the cutting edge of one cutter A² being out of alignment with the serrations of the next adjacent one on the same cutter-head A or A'. As the felly D to be planed at its inner and outer surfaces is cut from a solid piece of wood and not bent, it is evident that when the felly D is passed between the cutter-heads A and A' the serrated cutting edges A³ plane the inner and outer surfaces without danger of chipping the same or otherwise producing roughened surfaces. It is understood that straight cutting edges—that is, such without serrations or notches—are liable to chip the surfaces of the felly D as the cutting edges cut against the grain of the wood.

The operation is as follows: The felly D is placed by the operator on the table B and with its end surface against the fingers J of the centering device C, as plainly illustrated in Fig. 1, and then the operator swings the feeding mechanism F around so that the prongs R engage the top surface of the felly D, as plainly indicated in dotted lines in Fig. 1. The operator now imparts a swinging motion to the feed device F in the direction of the arrow a', (see Fig. 1,) so that the felly D is carried along over the table A and helped by the prongs R into a centered position and while in this position is passed between the cutter-heads A and A', so that the cutters A² plane the inner and outer surfaces of the felly D true without danger of chipping the said

surfaces. In case the inner surface of the felly D is irregular, then the fingers J yield sufficiently to permit proper travel of the felly D without losing its centered position. For fellies D of different widths it is necessary to adjust the bracket G transversely to bring the fingers J in proper relation to the felly D, and in case the thickness of the latter varies it is necessary to adjust the pivot N' of the head N in the standard L to bring the points of the prongs R in proper relation to the upper surface of the felly D. For fellies D having different radii it is necessary to adjust the base K' longitudinally on the guideway K and to adjust the arm O correspondingly in a lengthwise direction in the head N, so that the prongs R engage the felly D at or near the middle of the top of the felly D.

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

1. A felly-planing machine, comprising a table, a rotatable standard mounted thereon, a radially-adjustable feed-arm mounted on the standard, a transverse rod mounted on the end of the feed-arm and adjustable with respect thereto, prongs on the ends of the rod for engaging the top of the felly, a centering device on the table and comprising a bracket adjustable toward and from the standard, a rod mounted transversely of the bracket and adjustable with respect thereto, centering-fingers on the ends of the rod for engaging the inner face of the felly, said fingers being mounted to yield in the direction of travel of the felly, and a pair of spaced revoluble cutter-heads arranged to engage the inner and outer faces of the felly as it is moved thereby by the feed-arm.

2. A felly-planing machine, comprising a table, a rotatable standard mounted thereon, a feed-arm adjustably mounted on the standard, means on the feed-arm for engaging a felly near the opposite ends thereof, a centering device for centering the felly prior to its engagement by the feed-arm, said device comprising a rod having fingers upon each end thereof for engaging the inner face of the felly, means for adjusting said rod toward and from the standard, and a pair of rotatable cutters arranged upon each side of the path of travel of the felly and adapted to engage the inner and outer sides thereof.

3. In a felly-planing machine, a plurality of revoluble cutter-heads spaced apart to permit the passage of a felly, of devices for centering the felly with respect to the cutters comprising an adjustable rod, having centering-fingers for engaging the felly near its ends, said fingers being adjustable on the rod, and means for moving the felly between the cutters, said means engaging the felly near the opposite ends thereof, whereby to retain it in its centered position.

4. A felly-planing machine provided with

a felly-feeding device, comprising an adjustable base, a standard mounted to turn thereon, a head mounted to swing on the said standard, an arm adjustably held in the said head, holders adjustably secured on the said arm, prongs secured on the said holders, and a fastening device on the standard for locking the arm against swinging.

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

GEORGE A. ENSIGN.

Witnesses:

JOS. BAUER,
K. SHARPE.