No. 831,749. PATENTED SEPT. 25, 1906.

F. J. SHANISEY, SR.

LAST TURNING MACHINE.

APPLICATION FILED JAN. 2, 1906.

2 SHEETS—SHEET 1.

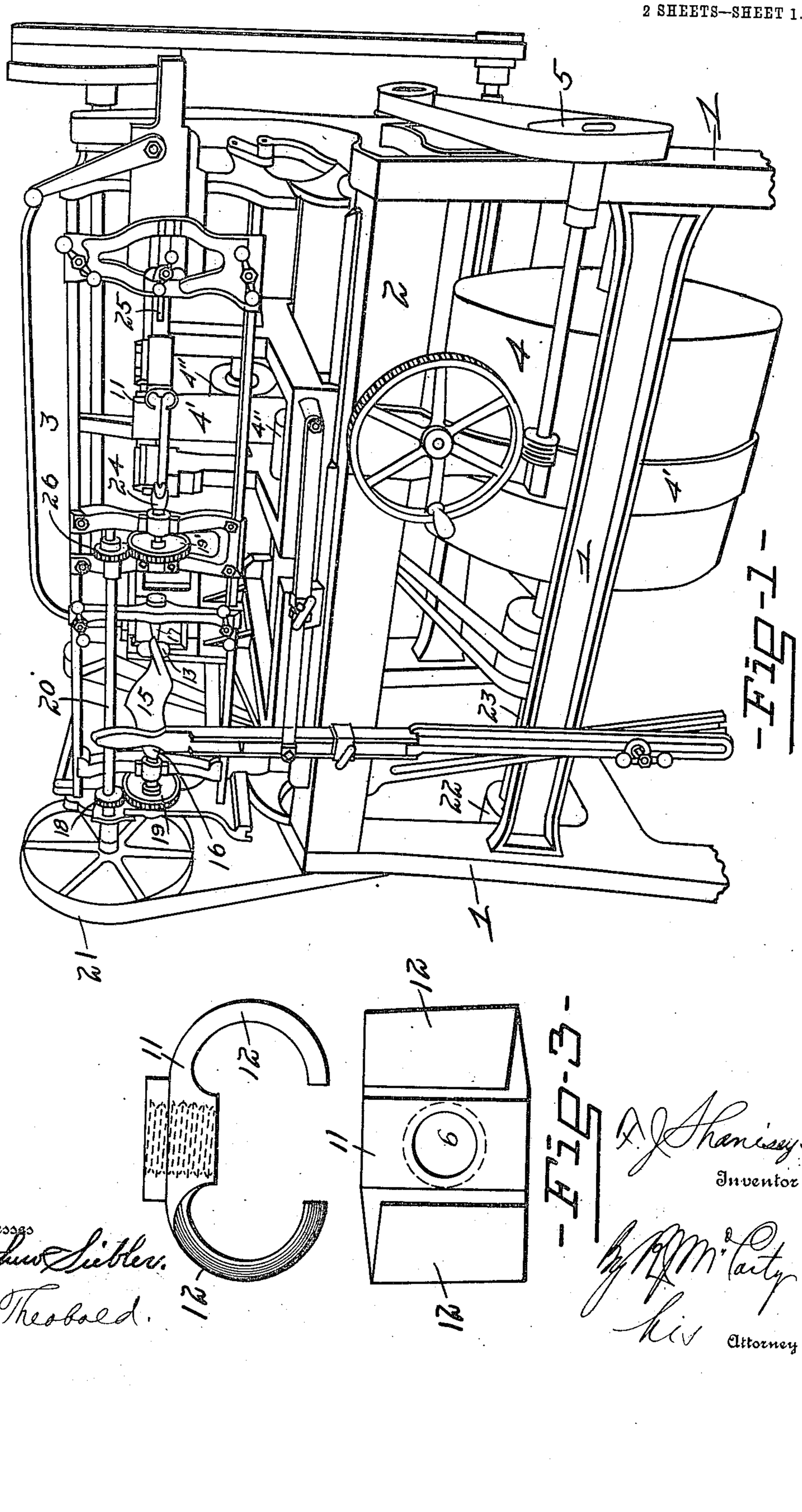

FIG. 1.

FIG. 3.

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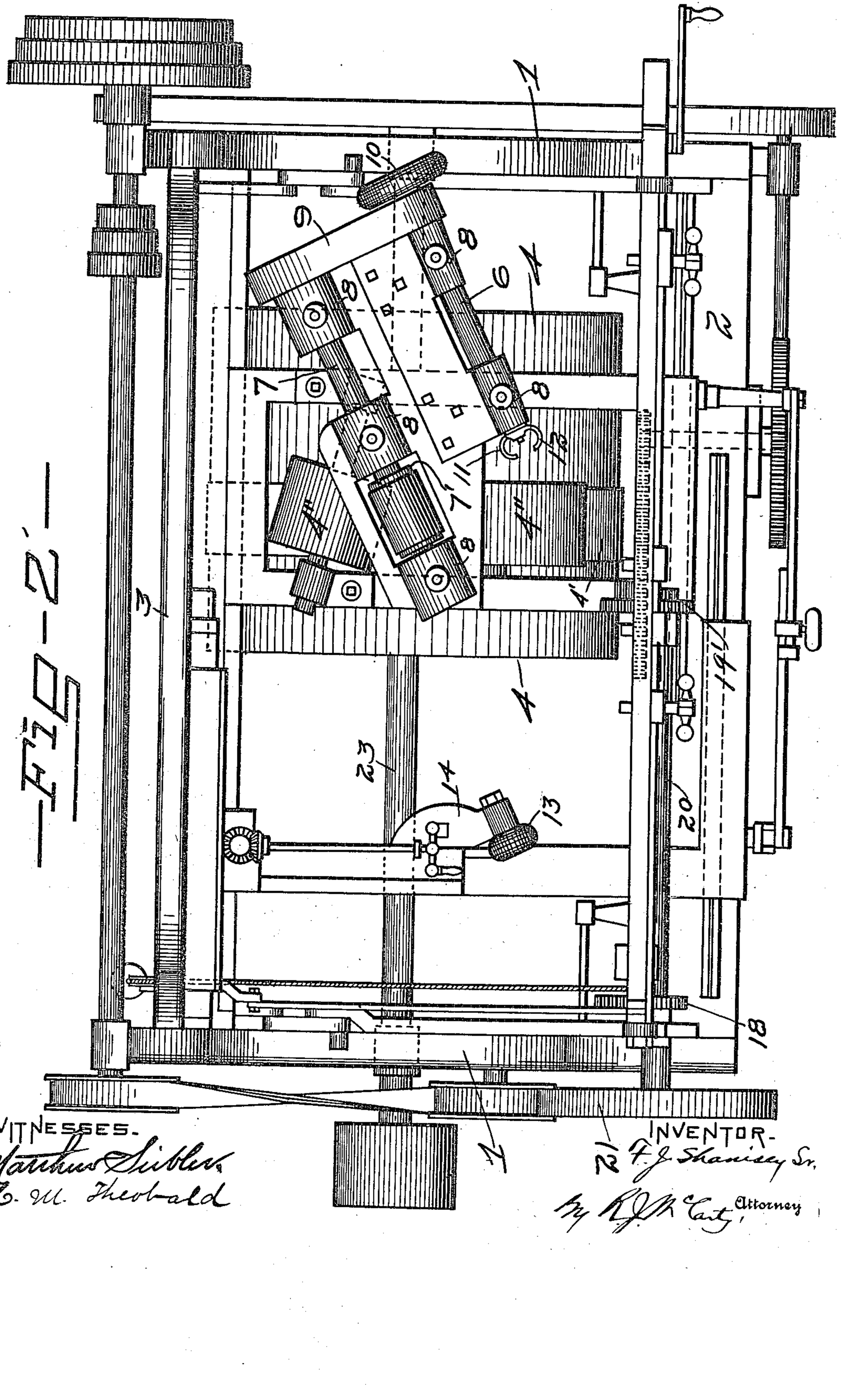

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UNITED STATES PATENT OFFICE.

FREDERICK J. SHANISEY, SR., OF DAYTON, OHIO, ASSIGNOR TO THE CRAWFORD-McGREGOR & CANBY COMPANY, OF DAYTON, OHIO.

LAST-TURNING MACHINE.

No. 831,749. Specification of Letters Patent. Patented Sept. 25, 1906.

Application filed January 2, 1906. Serial No. 294,072.

To all whom it may concern:

Be it known that I, FREDERICK J. SHANISEY, Sr., a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Last-Turning Machines; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in last-turning machines.

The construction of lasts to meet the requirements of the present time is such as to require a two-inch curvature on the side of the last between the ball and the heel. With machines as now constructed it is impossible to turn such last, and the work is required to be done by hand. In constructing the last by hand it is impossible to obtain a perfect uniformity of curvature.

It is therefore the object of the present invention to provide a machine by which such curvature may be turned entirely from the cutter-head with great accuracy, thereby dispensing with the tedious and inaccurate handwork entirely.

Specifically speaking, the invention resides in the shape and construction of the cutter-head and guide-wheel and in the positions of centers of the cutter-head and guide-wheel. The positions of the shafts of the cutter-head and guide-wheel are essentially on an angle with respect to the frame in order that the model may be permitted to turn free from obstructions during the process of turning.

In order to accomplish the purposes and objects of such machine, an auxiliary power-transmitting shaft is arranged behind the cutter-head shaft on the same angle as the latter in order that the power may be probably transmitted to the cutter-head shaft.

Preceding a detail description of my invention reference is made to the accompanying drawings, of which—

Figure 1 is a perspective view of an old and well-known form of last-turning machine to which my improvements are applied. Fig. 2 is a top plan view, various old and well-known portions of the machine being omitted in order to obtain a more perfect view of the mechanism comprised in the invention. Fig. 3 shows detached detail views of the cutter-head.

In a detail description of my invention similar reference characters indicate corresponding parts.

As hereinbefore stated, my invention consists in the construction of the cutter-head and the guide-wheel and in the positions in which they are mounted. The various portions of the framework and the driving spindles and wheels are old and well-known features of last-turning machines. Therefore it will scarcely be necessary to make more than a passing reference to these old and well-known mechanical features. The lower framework 1, the bed 2, and the various superstructures 3, with primary and intermediate drive-pulleys 4 and 5, are supplemented with various other old details, which need not here be referred to. Above the bed is mounted the cutter-head shaft 6 and auxiliary driving-shaft 7 in suitable bearings 8, said bearings being supported on the proper angles to impart to said shafts the positions which are requisite for turning the desired curvature in the last, as shown in Fig. 2. The cutter-head shaft 6 is driven from the shaft 7, through belt 9, at a maximum rate of speed, the driving power being augmented by the addition of a fly-wheel 10 on the cutter-head shaft 6. The cutter-head 11 is securely fixed to the shaft 6 and consists of two uniformly outwardly and inwardly curved blades 12, the opposite edges of which operate upon the material as the cutter-head is rotated at a high rate of speed. The power is transmitted to the auxiliary shaft 7, which, as before stated, is belted to the cutter-head shaft 6 from pulley 4, through belt 4′, said belt being passed around guide-pulleys 4″ and twisted between said guide-pulleys 4″ and the belt-pulley 7′ of the cutter-head shaft 6. It will of course be understood that the power may be transmitted to the cutter-head shaft through the necessary gearing, and thus the belt-and-pulley transmission devices are substituted thereby.

13 designates a guide-wheel mounted in an arm 14, which is rigidly secured to the frame. This guide-wheel is of a diameter that essentially corresponds with the diameter between the blades of the cutter-head 11, and the pe-

riphery of said guide-wheel is curved or rounded to agree with the rounded form of said cutter-blades.

In Fig. 1, 15 designates a model-last held in proximity to the cutter-wheels 13 and comprising a pattern-last for the cutter-head, the latter operating upon raw material in the form of a block reduced to the proper size before being placed in position to be operated upon by the cutter-head. The pattern or model last 15 is held between centers 16 and 17 and is revolved at a suitable speed by means of gears 18 and 19, the former gear being on a shaft 20, upon which there is also a belt-pulley 21, which receives power from a belt-pulley 22 on the main power-shaft 23 at the bottom of the machine. The rotation thus imparted to the pattern or model last 15 is slow compared to the rotation of the cutter-head. The raw material to be operated upon by the cutter-head is held between revolving centers 24 and 25, which receive motion corresponding to the speed of rotation of the centers 16 and 17, owing to the gear 19′ of the revolving center 24 being of the same diameter as the gear 19 of revolving center 16. The gear 19′ is driven from a gear 26 on shaft 20 and is of equal diameter with gear 18 on said shaft. The guide-wheel 13 makes constant contact with the model-last 15 as the latter is moved longitudinally in contact with said guide-wheel. This movement is the same as the movement given the raw material held between the centers 24 and 25, and the contact of the revolving cutter-head 11 with the raw material is the same during the process of turning as the contact with the guide-wheel 13 with the pattern-last 15. The guide-wheel 13 is essentially on the same angle as the cutter-head 11 for obvious reasons.

Having described my invention, I claim—

In a last-turning machine, a cutter-head consisting of two curved blades united at one end by an integral hub and spaced apart at the other end, a shaft upon which said cutter-head is mounted, said shaft being disposed at an angle to the plane of the material upon which the cutter-head operates, an auxiliary driving-shaft for said cutter-head shaft disposed upon an angle coinciding with the angle of the cutter-head shaft, and a guide-wheel having a diameter coinciding with the diameter of the cutter-head, the periphery of said guide-wheel also coinciding in curvature with the curvature of the cutting-blades of the cutter-head, substantially as specified.

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

FREDERICK J. SHANISEY, Sr.

Witnesses:
C. B. Kyser,
Gus. L. Barrett.