

No. 689,463.

Patented Dec. 24, 1901.

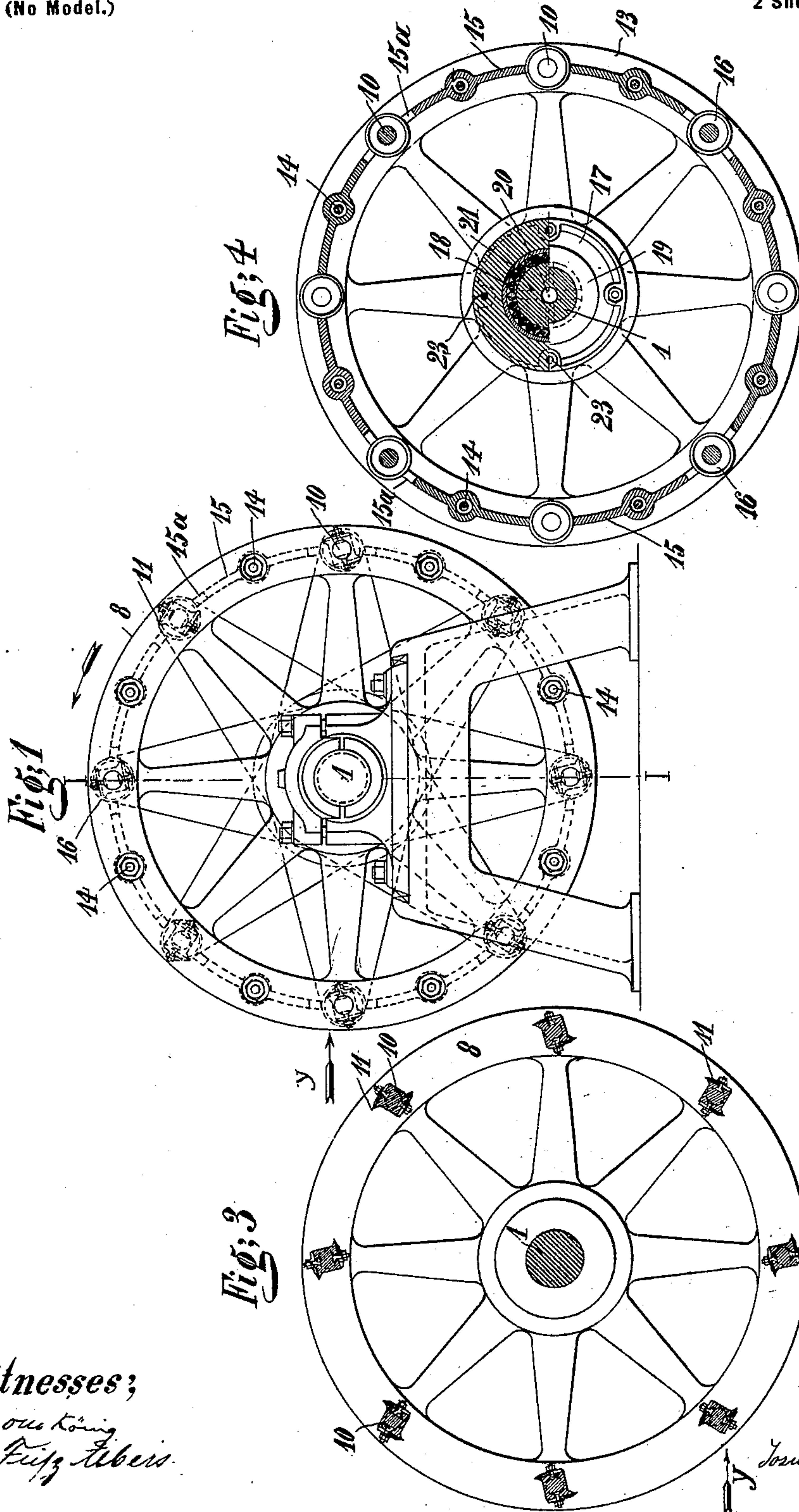
J. W. CORTS.

MACHINE FOR CUTTING WOOD OR LIKE MATERIALS INTO SMALL CHIPS.

(Application filed Aug. 26, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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Fitz Tibers.

Inventor;

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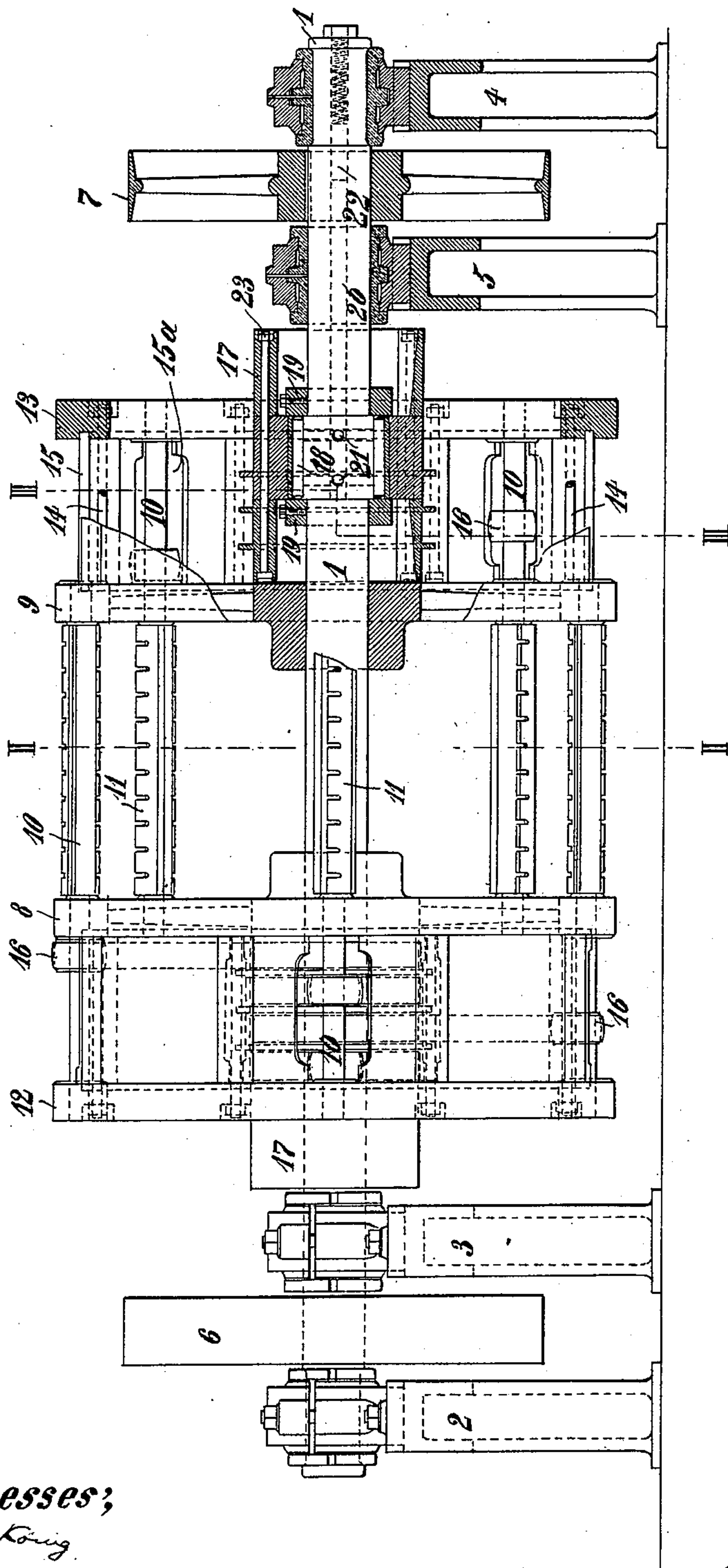
MACHINE FOR CUTTING WOOD OR LIKE MATERIALS INTO SMALL CHIPS.

(Application filed Aug. 28, 1901.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 2



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UNITED STATES PATENT OFFICE.

JOSUA WALTER CORTS, OF REMSCHEID, GERMANY.

MACHINE FOR CUTTING WOOD OR LIKE MATERIALS INTO SMALL CHIPS.

SPECIFICATION forming part of Letters Patent No. 689,463, dated December 24, 1901.

Application filed August 26, 1901. Serial No. 73,282. (No model.)

To all whom it may concern:

Be it known that I, JOSUA WALTER CORTS, a citizen of the German Empire, residing at Remscheid, in the Province of Rhenish Prussia, Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Machines for Cutting Wood or Like Materials into Small Chips; 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.

This invention relates to improvements in machines for chopping or cutting into small pieces or chips wood for tanning and dyeing purposes, so-called "dyeing-wood and bark-rasping" machines. The machines used hitherto for this purpose consist of a drum with cutting-knives arranged on the circumference thereof and made to rotate while the pieces of wood or bundles of bark are pressed against the drum. It is evident that by this mode of working a great amount of power must be spent and wasted to overcome the friction caused by the continuous pressure of the wood against the drum and by the shocks of the cutting-knives against the wood. These drawbacks are overcome and avoided by the machine which I have invented and which I will describe hereinafter and which is shown on the accompanying drawings.

The new machine consists in the main of a rotary drum composed of several disks which serve as carriers or bearings for a series of axles carried by them and made to turn very rapidly around their own axis, while by the carrier-disks they are taken around and made to rotate on the main central axle. The axles carried by said disks are provided with cutting-knives, and the wood to be chipped is carried on a sliding table or carriage and is advanced gradually toward the cutting-drum, so that each cutter-axle cuts off small chips in passing by the wood. It will thus be seen that no friction is caused by the wood being pressed against the circumference of a cutter-drum and that because the cutters themselves rotate on their own axles they are clearing themselves from the chips cut off in a much better manner than is the case in the old machines.

On the accompanying drawings, Figure 1 shows an end view of the new machine. Fig. 2 shows the same, partly in elevation and partly in a vertical central section, along line II of Fig. 1. Fig. 3 is a vertical section along line III of Fig. 2. Fig. 4 is a vertical section along line III III of Fig. 2.

By 1 is indicated the main driving-shaft of the machine, which is carried in the brackets 2, 3, 4, and 5, respectively. By the driving-pulleys 6 and 7 at both ends it is set in motion. In the middle part the main shaft carries the disks 8 and 9, in the rims of which the knife-axles 10 are carried, equally distributed on the circumference of the disks. These axles, of which eight are shown on the drawing, are each provided with cutting-knives 11 in like manner as the cutter-axles of planing and molding machines. The cutter-axles project alternately right and left of the disks 8 or 9 and are supported by the projecting ends by rings 12 and 13 respectively held by the disks 8 and 9. These outside rings 12 and 13 are respectively connected to their adjacent disks 8 and 9 by stay-bolts 14 and walls or plates 15, forming a nearly-closed drum. These plates 15 are secured in circular grooves on the sides of the rims of the disks and rings 8 12 and 9 13, respectively, and they are cut out to leave an open space 15^a at each side of the axles 10, so that these can be reached and that driving-belts can be put upon the small pulleys 16, fixed upon the axles 10.

The drums formed by the disks 8 12 and 9 13 and the respective plates 15 between them might be cast in one piece each; but I prefer the mode of construction shown and described.

By the pulleys 16 the shafts 10 are set in motion from drums 17 and belts put around them. These drums are placed free upon the main shaft 1 outside of the disks 8 and 9, respectively, so that they can rotate around the shaft 1, for which purpose they receive motion from pulleys and a driving-shaft, (not shown on the drawings,) so that they rotate in the same direction as the shaft 1, but at a greater number of revolutions. These drums 17 are composed of three-parts held together by bolts 23, as seen from Figs. 2 and 4. They

run on friction-rollers 18 upon the shaft 1 and are held in place by collars 19, screwed fast upon the shaft 1.

In order to lubricate the rollers 18, the shaft 1 has a central boring 20 and radial borings 21, by means of which lubricating material can be brought to the rollers 18, a piston 22 being provided for this purpose.

The ratio of the revolutions made by the various pulleys is about so that while the shaft 1 makes about eighty to one hundred revolutions per minute the knife-shafts 10 make about three thousand to four thousand in the same time.

The wood to be cut is carried forward to the machine in a similar manner as in the old machines and in the direction indicated by the arrow *y* in Figs. 1 and 3. The cutters of the axles 10 when coming in contact with the wood cut off small chips in a similar manner as the cutters of planing-machines, with that difference, however, that the cutters at the same time also move away from the wood in the direction of their own rotation.

Having thus explained my new machine and the manner of its working, I declare that what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a machine for cutting into small chips wood for dyeing and tanning purposes, in combination with a main shaft carried in bearings

2, 3, 4, 5, driving-pulleys 6, 7 at both ends of said shaft between the bearings 2, 3 and 4, 5 respectively, disks 8 and 9 keyed in the middle part upon said shaft 1, rings 12 and 13 connected to the respective disks 8 and 9, said rings being held together with their respective disks by bolts 14, stay-plates 15 keeping the same in proper distance, knife-shafts 10 carried by said disks 8 and rings 12 and 9 and 13 respectively, cutters 11 fixed upon the knife-shafts 10, the whole as described and illustrated and for the purpose set forth.

2. In a machine for cutting into small chips wood for dyeing and tanning purposes, a shaft 1 carried in brackets 2, 3, 4 and 5, driving-pulleys 6, 7, disks 8, 9 and rings 12, 13 respectively connected thereto, knife-shafts 10 carried by said disks and rings, pulleys 16 upon said knife-shafts in combination with drums 17 rotating freely upon said shaft 1, friction-rollers 18 carrying said drum 17, collars 19 holding said rollers and the drum in place upon shaft 1 axially, the whole as described and illustrated and for the purpose set forth.

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

JOSUA WALTER CORTS.

Witnesses:

OTTO KÖNIG,
FRITZ ALBERS.