(No Model.) 2 Sheets—Sheet 1.

J. H. REED.

WOOD WORKING MACHINE.

No. 467,629. Patented Jan. 26, 1892.

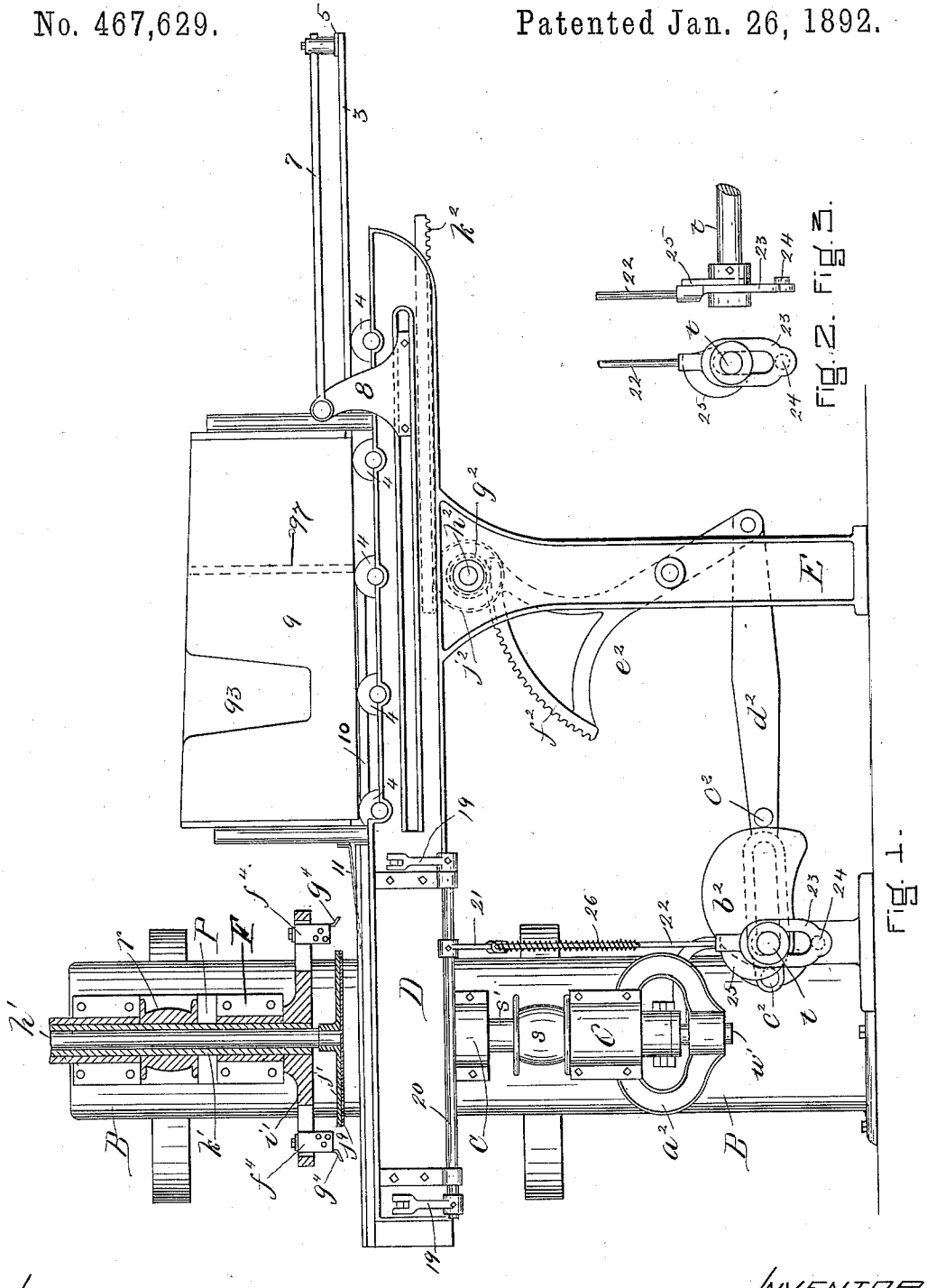

Fig. 1.

Fig. 2. Fig. 3.

WITNESSES.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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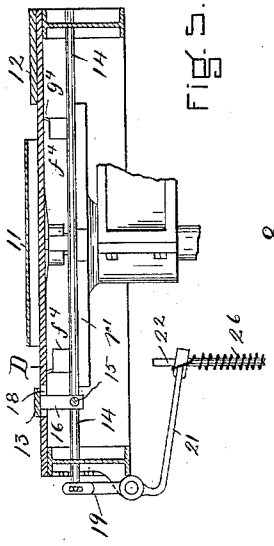

Fig. 5.

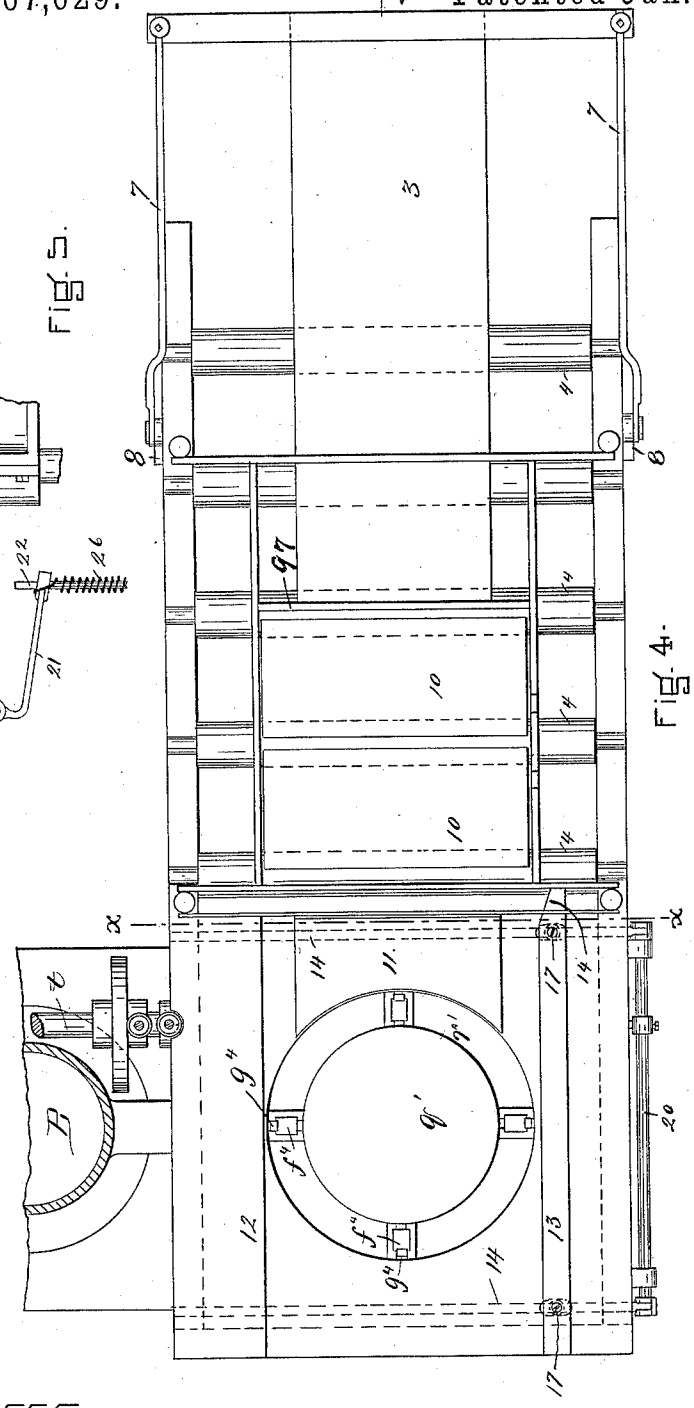

Fig. 4.

WITNESSES.

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UNITED STATES PATENT OFFICE.

JAMES H. REED, OF LYNN, MASSACHUSETTS.

WOOD-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 467,629, dated January 26, 1892.

Application filed July 1, 1891. Serial No. 398,118. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. REED, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Wood-Working Machines, of which the following is a specification.

My invention relates in general to wood-working machines of the class designed for cutting out disks or circular forms, like barrel-heads, tub and pail bottoms, and the like.

In particular my invention relates to the devices for presenting to the cutter-heads employed in such machines the material from which the disks are to be produced. My present invention, mainly, is designed as an improvement upon that shown, described, and claimed by me in an application filed November 28, 1890, Serial No. 372,777. In the said application I have presented a machine for the purpose above stated having two cutter-heads mounted on revolving vertical tubular shafts or sleeves, the said shafts or sleeves being connected with operating devices, whereby they may be moved longitudinally in such manner as to carry the cutters mounted on the cutter-heads into contact with the material to be cut. Rods or shafts extending through the said tubular shafts or sleeves carry clamping-plates, and the upper of the said rods or shafts is connected with operating devices, whereby it may be moved to clamp the material to be cut between the upper clamping-plate and the lower clamping-plate. In addition to the said clamping devices and cutting devices, the machine comprises devices whereby, when the clamping and cutting devices are separated, to intermittingly feed forward the planks or boards from which the disks are to be cut. The machine presented in the application aforesaid is designed for cutting out disks from planks or boards which are fed forward intermittingly to the clamping and cutting devices, as just mentioned.

The design of my present invention is to provide for feeding forward successively to the disk-producing devices of a machine on the order of that just referred to short sections or blanks instead of long boards or planks, and also to provide for presenting such short sections properly to the disk-producing devices.

My invention will be described in connection with the accompanying drawings, and then be particularly pointed out in the claims at the close of this specification.

In the drawings, Figure 1 is a view in side elevation of portion of a wood-working machine of the kind referred to, the same having applied thereto one embodiment of my present invention, sufficient of the machine being shown to illustrate the relations and connections of the invention. Figs. 2 and 3 are views in end and side elevation of parts concerned in operating the movable gage hereinafter described. Fig. 4 is a sectional plan view of the parts shown in Fig. 1, with the upper part of the clamping and cutting devices shown in the said figure removed. Fig. 5 is a view in section on the dotted line $x\,x$ in Fig. 4.

D is the table of the machine. E is one of the legs by which one end of the said table is supported.

B is the cylindrical upright, which forms the main support of the machine, and to which are secured the auxiliary supports C and F.

i' is the upper cutter-head. k' is the rotary sleeve or tubular shaft carrying the same.

j' is the upper clamping-disk. j^9 is the rubber facing on the under side of the said clamping-disk. h' is the rod or shaft carrying the said disk.

r' is the lower cutter-head. s' is the sleeve or tubular shaft carrying the same.

q' is the lower clamping-disk. w' is the rod or shaft carrying the same, and $r\,s$ are the driving-pulleys on the shafts or sleeves k' and s'.

The blocks f^4, movable in radial slots in the cutter-heads, carry the cutters g^4. The horizontal shaft t carries the cam b^2, which engages the pins c^2, mounted upon the rod d^2, one end of which rod is slotted to slide upon shaft t, while the other end thereof is connected with the lower end of lever e^2, the said lever being provided at its upper end with a toothed segment f^2 in engagement with pinion g^2 on the shaft h^2, the said shaft h^2 carrying also a pinion j^2 in engagement with a rack k^2.

So far as referred to, the parts and their mode of operation are essentially the same as the correspondingly-lettered parts in my ap-

plication aforesaid, and in practice the parts lettered h', k', s', w', and t' will be actuated by operative connections such as those presented in the said application.

In the application aforesaid the rack k^2 is shown connected with devices serving to feed forward intermittingly long planks or boards to the clamping and cutting devices, the said devices co-operating with the devices for supporting and guiding the said planks or boards. In my present invention I connect with the rack a pusher by which to push or carry forward successively into the clamping and cutting mechanisms short sections of boards or planks, and adjacent to the said pusher I arrange a trough, chute, or the like receptacle, in which a number of such sections may be placed, the pusher serving to propel or carry them forward one by one to the clamping and cutting devices. Such a pusher is shown at 3, it consisting of a flat board, plate, or strip herein shown as resting and sliding upon transversely-arranged rollers 4 4, mounted on table D, the said pusher being provided at its outer end with a cross-strip 5, which at its ends is connected by rods 7 7 to a slide 8, to which the rack k^2 is secured or connected.

In the drawings I have shown a receptacle or box 9 placed above the rollers 4 4, boards 10 10 being used to bridge and fill the openings between the rollers in the space inclosed by the sides of the receptacle, the said boards and the rollers forming a kind of bottom for the receptacle. In the drawings I have represented the space within the receptacle shortened to suit the size of the section or blank by the insertion of a vertical partition 97. The sections or blanks will be placed into the division of the receptacle which is at the left-hand side of the said vertical partition. If desired, the boards 10 my be set down far enough between the rollers 4 4 to leave portions of the said rollers exposed above the boards 10, although this is not necessary. The rollers are embodied in the machine merely to permit of the latter being used in cutting long boards into barrel-heads, the receptacle and special form of pusher shown being omitted in case of such use. One side of the box is cut away at 93 to expose the interior of the box and its contents. The pusher slides over the rollers and these bridging-boards, and in its forward movement its end carries before it the bottom section of the pile of sections or blanks in the receptacle, pushing the said bottom section between the clamping-disks, which at this time are separated.

11 is a guide-apron at the delivery end of the receptacle 9, serving to hold down the moving section and direct the same properly between the clamping and cutting devices. The sections or blanks may be composed each of one piece of material, or two or more narrow strips may be placed together side by side in the receptacle and fed forward as one by the pusher. For the purpose of guiding the sections properly laterally and also for the purpose of holding pressed together properly the two or more narrow strips, which in some cases will be placed side by side, I employ lateral gages 12 and 13, one of which is placed at the rear of the clamping and cutting devices and the other at the front thereof. To facilitate the entrance of the sections between the gages 12 and 13, I bevel off the inner corner of gage 13, as at 14, at the end of the said gage which is adjacent to the receptacle 9. The entrance of the sections or blanks is further facilitated by the fact that the gage 13 is made yielding and movable toward and from the gage 12. The said gage 13 is secured by screws 17 to blocks 16, passing through slots 18 in the top of the table D, the said blocks being secured by screws 15 in position upon rods 14, sliding laterally through the sides of the table D, the said rods 14 at their ends being provided with pins, which play in slots in arms 19, mounted upon the rock-shaft 20, which rock-shaft is supported in bearings at one side of the table. An inwardly-projecting arm 21 on the said rock-shaft has connected therewith a rod 22, the lower end of which is provided with a yoke 23, the latter being slotted, so that it may slide upon shaft t, and being provided with a stud or roller 24, intended to be struck by a cam 25 on the said shaft t in the revolution of the said shaft. The weight of arm 21 and of the rod and yoke suspended therefrom holds the gage 13 pressed in a yielding manner toward gage 12. By the action of cam 25 upon stud or roller 24 the gage 13 is pressed toward gage 12 just prior to the descent of the upper clamping member, so as to grip the section firmly edgewise and in such manner that if the section or blank is composed of two or more narrow strips, each less in width than an entire section or blank, such strips shall be forced closely together at their edges before they are engaged by the clamping devices. In order to provide for variations in the width of the sections as they are fed forward between the gages 12 and 13, I interpose a yielding connection between the cam and the movable gage 13. I have shown herein the upper end of rod 22 passing freely through a hole in the inner end of arm 21 and a spring 26 connected at its upper end to the arm 21 and at its lower end to the rod 22. Blocks 16 may be adjusted along the rods 14 when it is desired to vary the distance of the gage 13 from the gage 12.

I have herein for convenience shown an arrangement of clamping and cutting mechanism which is the same as that presented in my application aforesaid. Any other mechanism whereby the sections may be properly held in position and the disks may be formed can be employed instead. The devices shown for actuating the pusher may also be replaced by other mechanism capable of imparting the desired movement to the pusher.

The operation of my improved devices will be apparent from the foregoing. A pile of

sections or blanks of the width and length necessary for the production of the desired disk will be placed in the receptacle 9, these sections or blanks being either each of one piece of the full width necessary or of two or more strips together making up the width. Each of the sections or blanks in turn, as it reaches the bottom of the pile in the receptacle, is engaged by the pusher and pushed forward under the apron 11 and between the gages 12 and 13, the gage 13 moving outwardly to permit the entrance of the section between it and the gage 12. The gage 13 is then pressed inwardly against the edge of the section through the action of cam 25, and then the clamping devices close upon it and it is acted upon by the cutting mechanism.

I claim as my invention—

1. The combination, with disk-forming mechanism, of a receptacle for blanks, a pusher for moving said blanks successively forward to the said mechanism, means for operating the said pusher, and gages for the blanks disposed adjacent to the disk-forming mechanism and on opposite sides thereof and of the line of feed, the blanks lying between the said gages while the disks are being produced therefrom, substantially as described.

2. The combination, with disk-forming mechanism, of a receptacle for blanks, a pusher for moving said blanks successively forward to the said mechanism, means for operating the said pusher, and gages for the blanks disposed adjacent to the disk-forming mechanism and on opposite sides thereof and of the line of feed, the blanks lying between the said gages while the disks are being produced therefrom, one of said gages being pressed yieldingly toward the other, substantially as described.

3. The combination, with disk-forming mechanism, of a receptacle for blanks, a pusher for moving said blanks successively forward to the said mechanism, means for operating the said pusher, gages for the blanks disposed adjacent to the disk-forming mechanism and on opposite sides thereof and of the line of feed, the blanks lying between the said gages while the disks are being produced therefrom, and devices acting to move one of the said gages toward the other at intervals to compress the blanks edgewise, substantially as described.

JAMES H. REED.

Witnesses:
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CHAS. F. RANDALL.