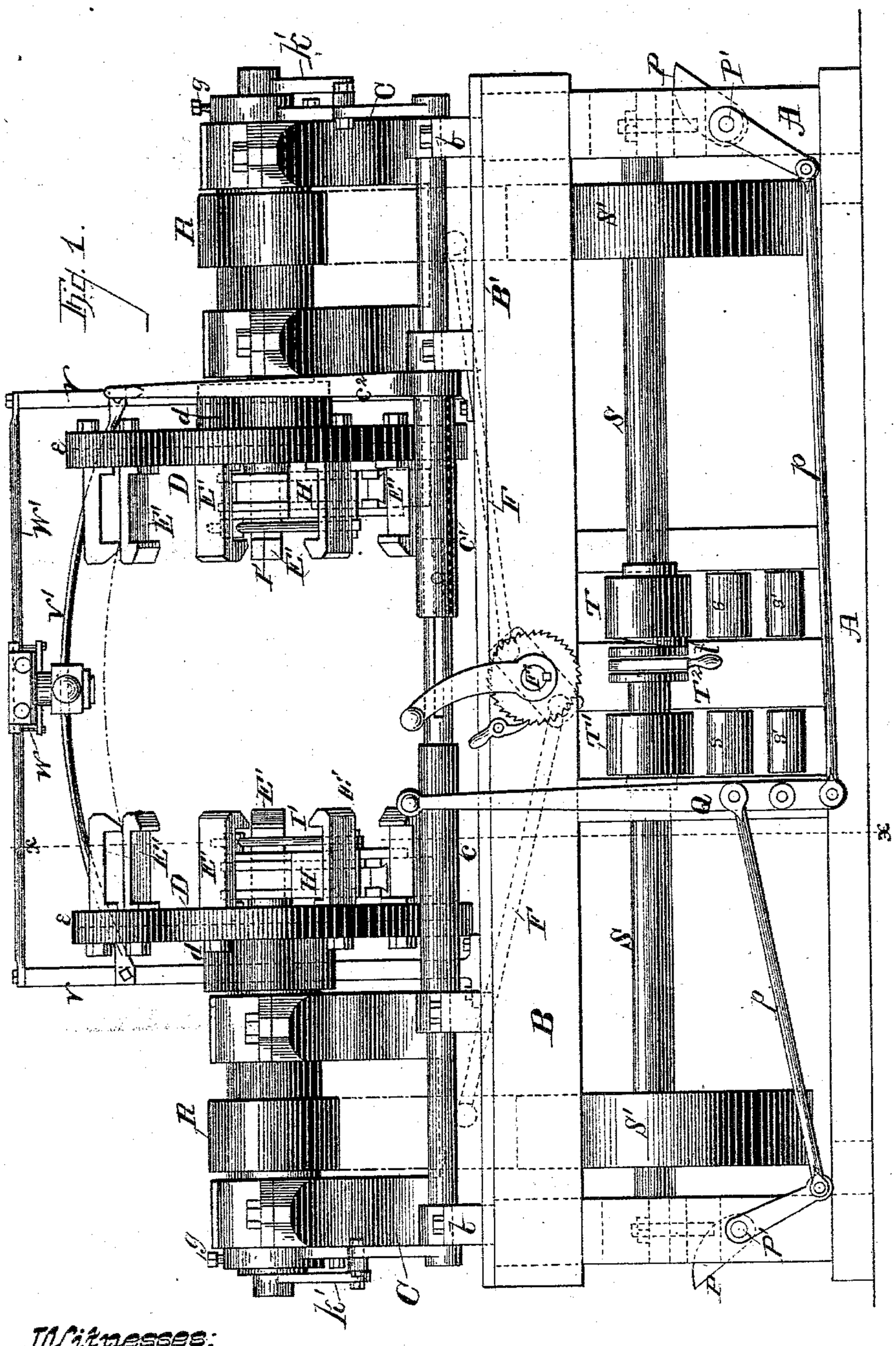
(No Model.) 2 Sheets—Sheet 1.

W. L. FIELD.

MACHINE FOR FINISHING BARRELS.

No. 283,477. Patented Aug. 21, 1883.



Witnesses:
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

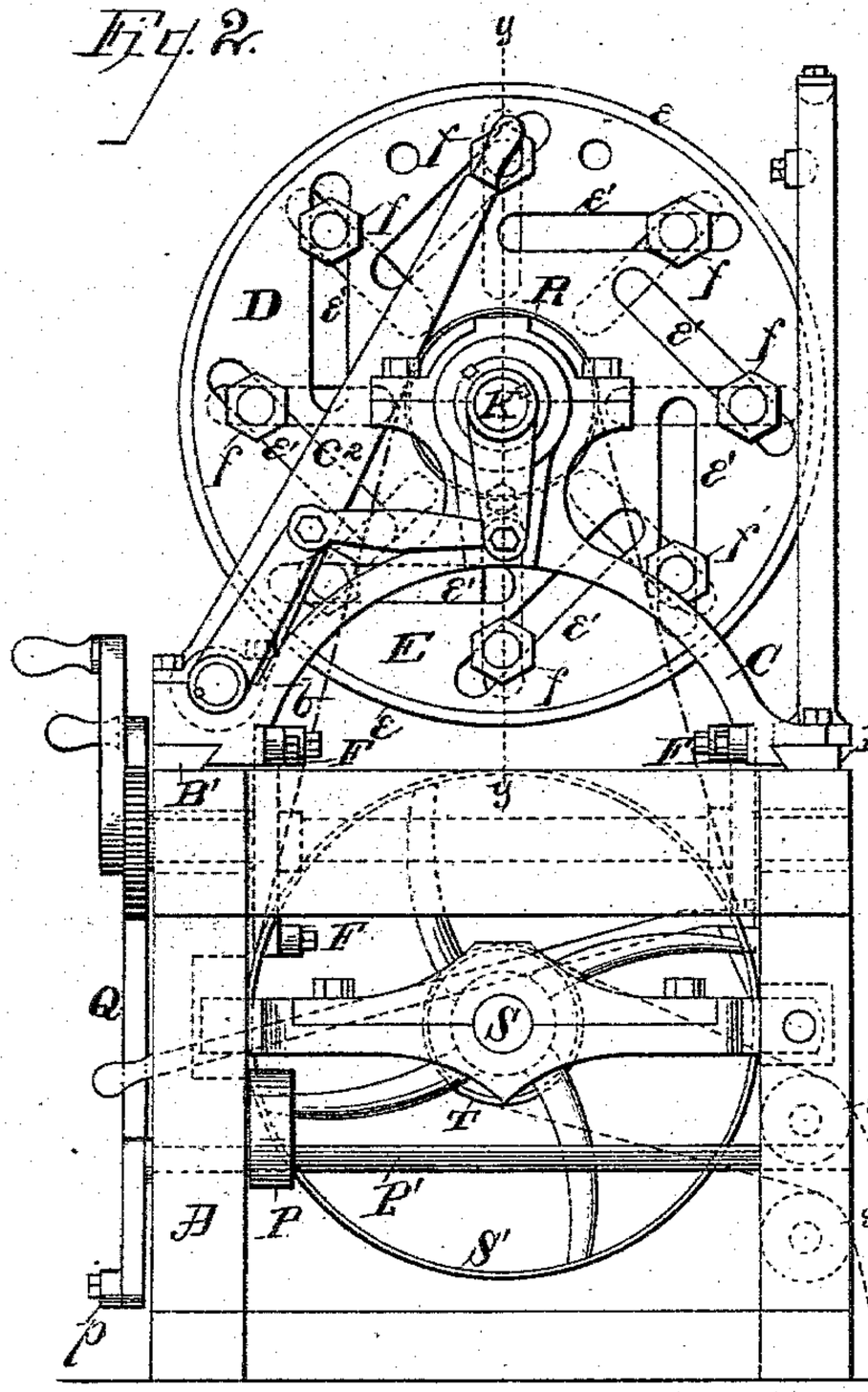

Fig. 3.

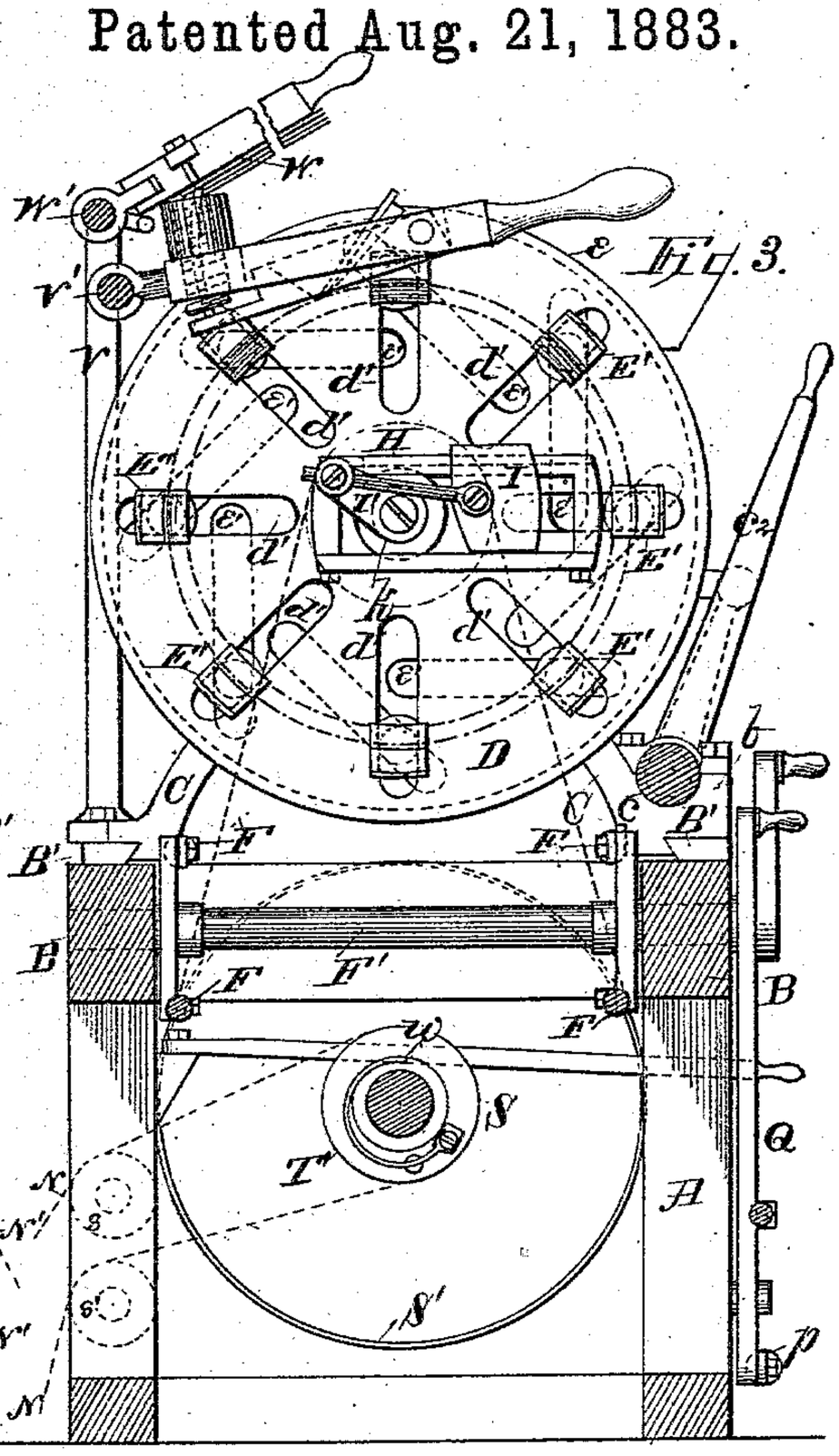

Fig. 5.

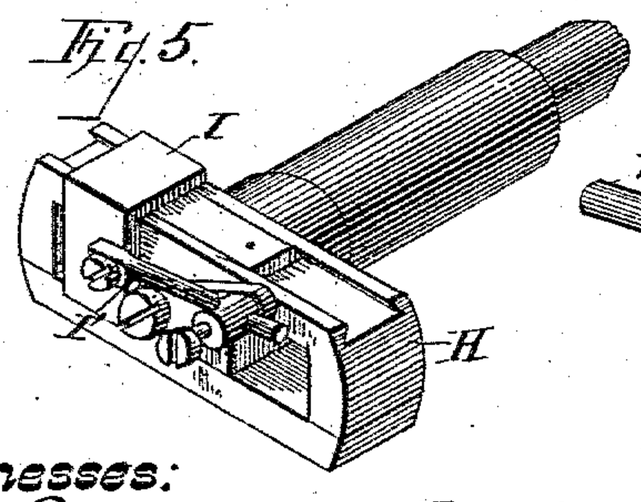

Fig. 6.

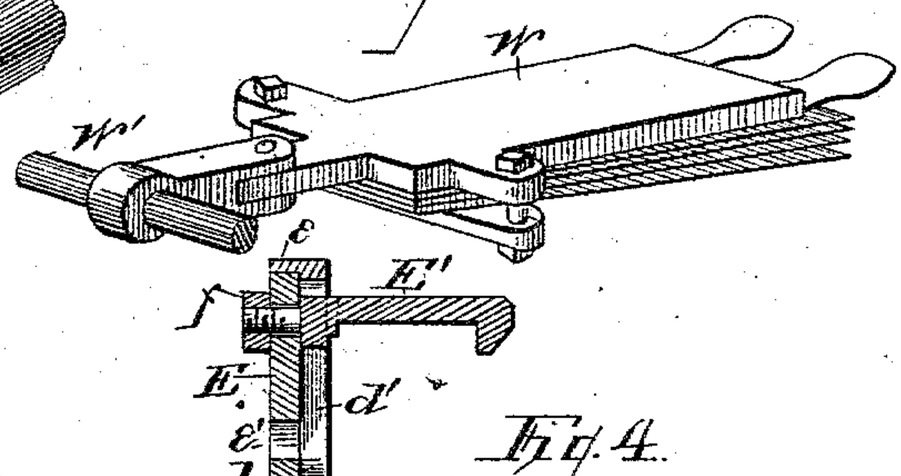

Fig. 4.

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UNITED STATES PATENT OFFICE.

WALLACE L. FIELD, OF WEST DEPERE, WISCONSIN.

MACHINE FOR FINISHING BARRELS.

SPECIFICATION forming part of Letters Patent No. 283,477, dated August 21, 1883.

Application filed March 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, WALLACE L. FIELD, of West Depere, in the county of Brown, and in the State of Wisconsin, have invented certain new and useful Improvements in Machines for Finishing Barrels; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to devices for finishing barrels, and will be fully described hereinafter.

In the drawings, Figure 1 is a side view of my invention. Fig. 2 is an end view. Fig. 3 is a transverse section through the center of the same. Fig. 4 is a section through line *x x*, Fig. 1, and Figs. 5 and 6 are details.

A is the frame of my machine, which should consist of solid timbers securely bolted together, and B B are the bed-pieces, that carry strips B′ B′, preferably of metal. The strips B′ B′ serve as ways for the feet of the pillow-blocks C C to travel upon. These pillow-blocks contain the bearings for the hollow shaft C′, that carry the chuck-disks D, and the feet *b* of each pillow-block have bearings for a rock-shaft composed of sections *c c′*, the end of one section, *c*, of which telescopes into the other section, *c′*. Both of my chuck-disks are alike, and therefore I refer in my description to only one of them.

D is the disk, which I provide with a hub, *d*, that is keyed on shaft C′. The disk has a rim, *e*, that extends back in the direction that the hub does, and between this rim and the hub I place a ring, E, that has tangential slots *e′*, while I provide the disk D with radial slots *d′*, that cross the slots *e′*, and I insert the shank of a finger, E′, through each of the slots *e′* and *d′* and secure it by a nut on its threaded end. On one end of this finger is a shank squared to fit in the slot *d′*, and then the shank terminates in a screw-bolt that, passing through the slot *e′* in the ring E, receives a nut, *f*. Now, as the only play that the finger E′ is capable of is in the direction of the length of the slot *d′*, when the ring E is turned in one direction the slots *e′* will have a tendency to wedge the shanks of these fingers out to the extreme line of the slots *d′*, and when turned back it will have an opposite tendency, and of course all of these fingers will be moved together. The ends of the fingers that are designed to take the end of the barrel have beveled flanges that rest on the outside of the end of the barrel and clasp it in position as the two chucks are drawn together. By "chucks" I mean the device that consists of the disk, ring, and fingers on each of the revolving hollow shafts C′.

To permit the placing and removing of the barrels, I make the pillow-blocks C adjustable with relation to each other and connect them by rods F F to the ends of a cross-bar on a shaft, F′, that passes through the bed-pieces B, and I provide the shaft with a ratchet and pawl for holding it in any position that it may be set in—that is, after the barrel has been placed, the shaft, when turned, will draw the chucks tightly against the ends of the barrel and hold it there while it is being finished.

Inside of the shaft C′, I place a stationary hollow sleeve, G, which I clamp in place by a set-screw, *g*, and I square the inner end of this sleeve and groove it to receive the tongued sides of a block or cross-head, H, the upper side of which is dovetailed to take the slide of a tool-holder, I. The latter is connected by an adjustable arm, I′, with the crank *k* of a solid shaft, K, that, passing through the sleeve G, extends out beyond its end to take another crank-arm, *k′*, that is linked to a section of rock-shaft *c c′*, and as an arm is linked to each section, one movement of the arm C^2 will turn the shaft K in each chuck and advance or withdraw the tool-holder. The shaft of each of the chucks is provided with a pulley, R, and beneath them I hang a shaft, S, having pulleys S′, that are belted to the pulleys R on the chuck-shafts, and in the center of shaft S, I provide pulleys T T′, and between them a clutch, T^2. Belts N N′, leading from pulleys on a counter-shaft, pass over rollers *s* in the frame, up over the pulleys T T′ and back over *s′*, and back down to the pulleys on the counter-shaft again, and thus the power to revolve the shaft S is taken in an almost horizontal direction, which admits of the shaft S being raised and lowered to tighten or loosen the belts when it is desired to start or stop the chucks.

The raising and lowering are done by cams P on rock-shafts P′, that pass through the end pieces of the frame, and the arms of these shafts are connected by rods *p p* with a toggle-lever, Q, by which they are operated. The belt of pulley T, I design driving by a pulley on the same shaft that carries the pulley that drives

pulley T′, but of twice the diameter, so that with pulley T, I can give twice the speed to shaft S that I can with pulley T′. Pulley T turns loosely on shaft S, but has a tooth, *t*, for engagement with a similar tooth on the clutch, so that when the greatest speed is desired the clutch has but to be shifted over onto it. The pulley T′ is adapted to revolve freely on its shaft only in one direction, so that when the shaft is being revolved at its most rapid rate it will not be retarded by the slow revolution of said pulley; but I provide it with a spring-clutch, *w*, that, when the pulley T is out of gear, will take into a hub on the shaft and revolve it only half as fast as the pulley T would.

To provide a support for the smoothing-tool for the outside of the barrel, I secure uprights V to the bed-piece and extend a slightly-curved rod, V′, from one to the other. This rod carries one end of the smoothing-tool, which, after it has done its work, may be carried to one side and swung up out of the way, to give place to a sand-paper pad, W, that is swiveled to a rod, W′, above it.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the disk D, having radial slots *d′*, and provided with hub *d* and rim *e*, each extending back in the same direction, with the ring E, located between said hub and rim, and having tangential slots *e′*, and the fingers E′, having hooked ends and shanks squared to fit within the slots *d′*, and then terminating in screw-bolts to pass through slots *e′*, and secured in position by nuts *f*, all substantially as set forth.

2. The combination of the disk D and rings E, slotted as described, and connected together by fingers E′, with the shafts C′, ways B′, pillow-blocks C, rods F F, connected to the ends of a cross-bar on shaft F′, and ratchet and pawl, all substantially as set forth.

3. The revolving hollow chuck-shaft and a stationary shaft passing through it, and carrying a cross-head on which the tool-holder slides, in combination with a rod passing through the last-mentioned shaft, a crank on said rod, and a pitman connecting to the tool-holder for operating the tool-holder, as set forth.

4. The combination, with the cross-heads, carrying each a sliding tool-holder, of a rod for each chuck, cranked to its tool-holder at one end, and links connecting said rods to a telescoping rock-shaft, whereby the tools may be operated simultaneously.

5. The combination, with the shafts of the chucks or crozing-heads of a barrel-machine, of the vertically-adjustable driving-shaft belted thereto, the rock-shafts P′, passing through the end pieces at each end of the frame, and having cams P, adapted to operate against the ends of the driving-shaft to raise or lower the same, operating-lever Q, and rods *p p*, connecting said lever with the rock-shafts, all substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 28th day of February, 1882.

WALLACE L. FIELD.

Witnesses:
STANLEY S. STOUT,
HAROLD G. UNDERWOOD.