

W. Brown.

Mach. for Making Barrels.

N^o 93,855.

Patented Aug. 17, 1869.

Fig:1.

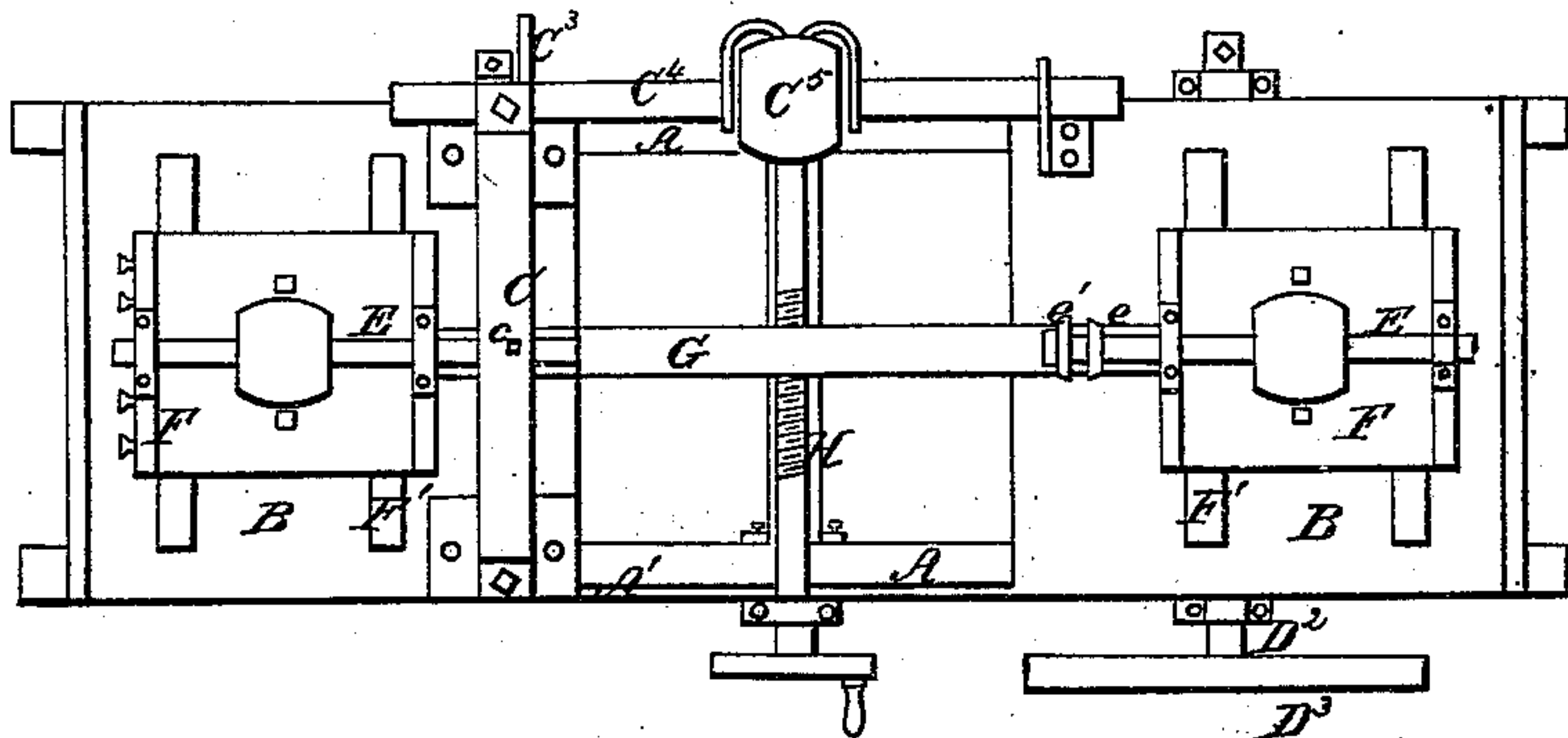


Fig: 2.

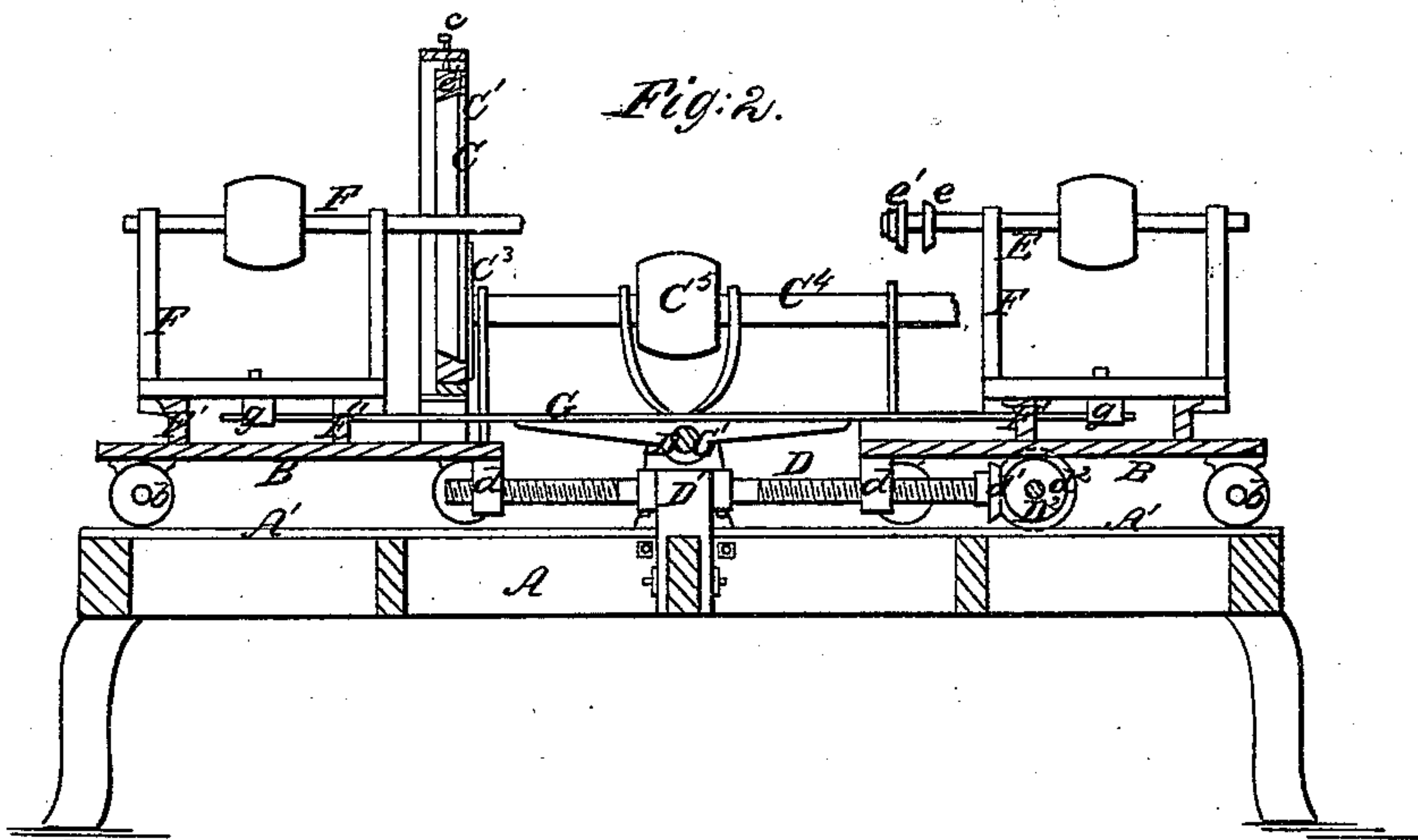


Fig: 3.

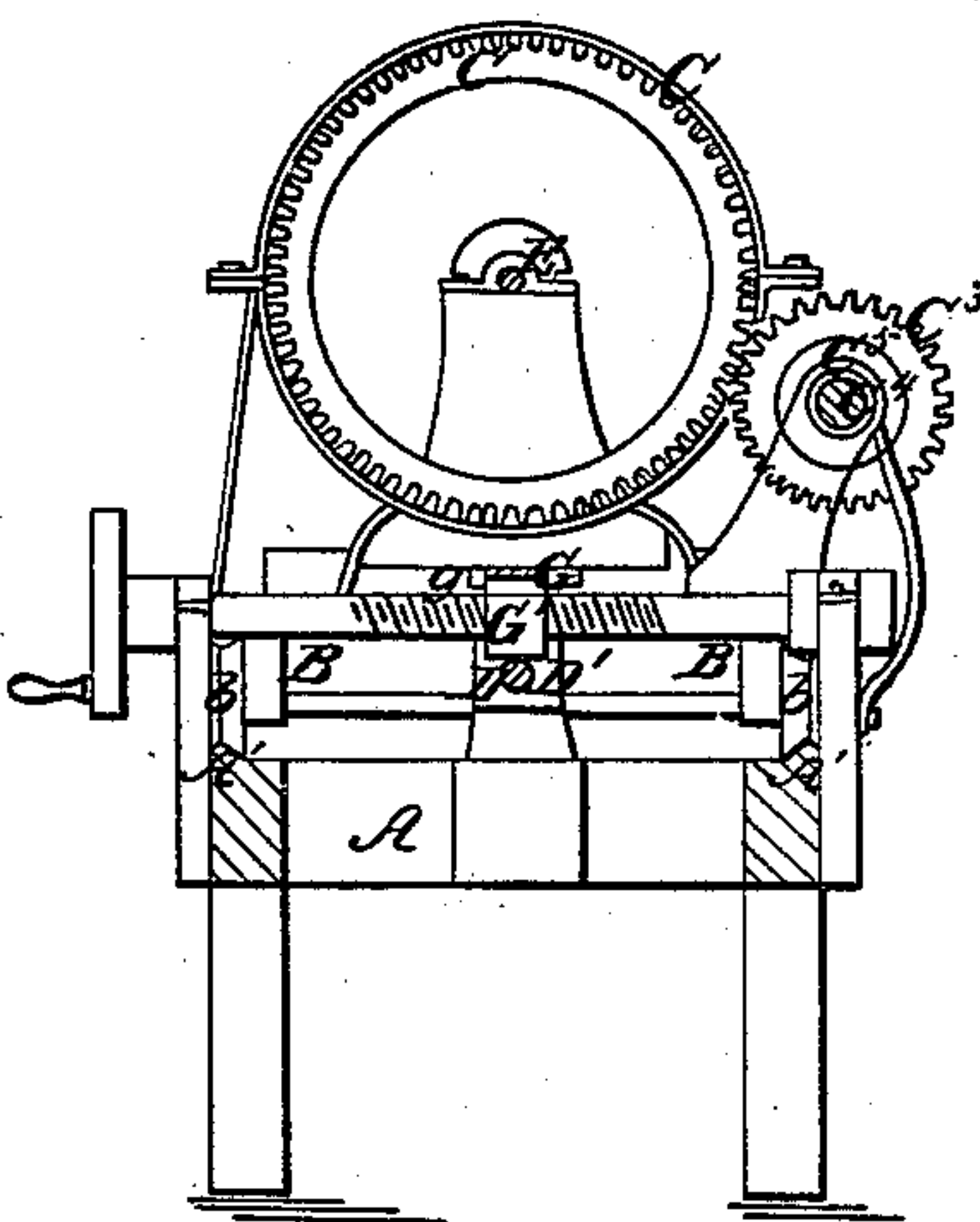


Fig:4.

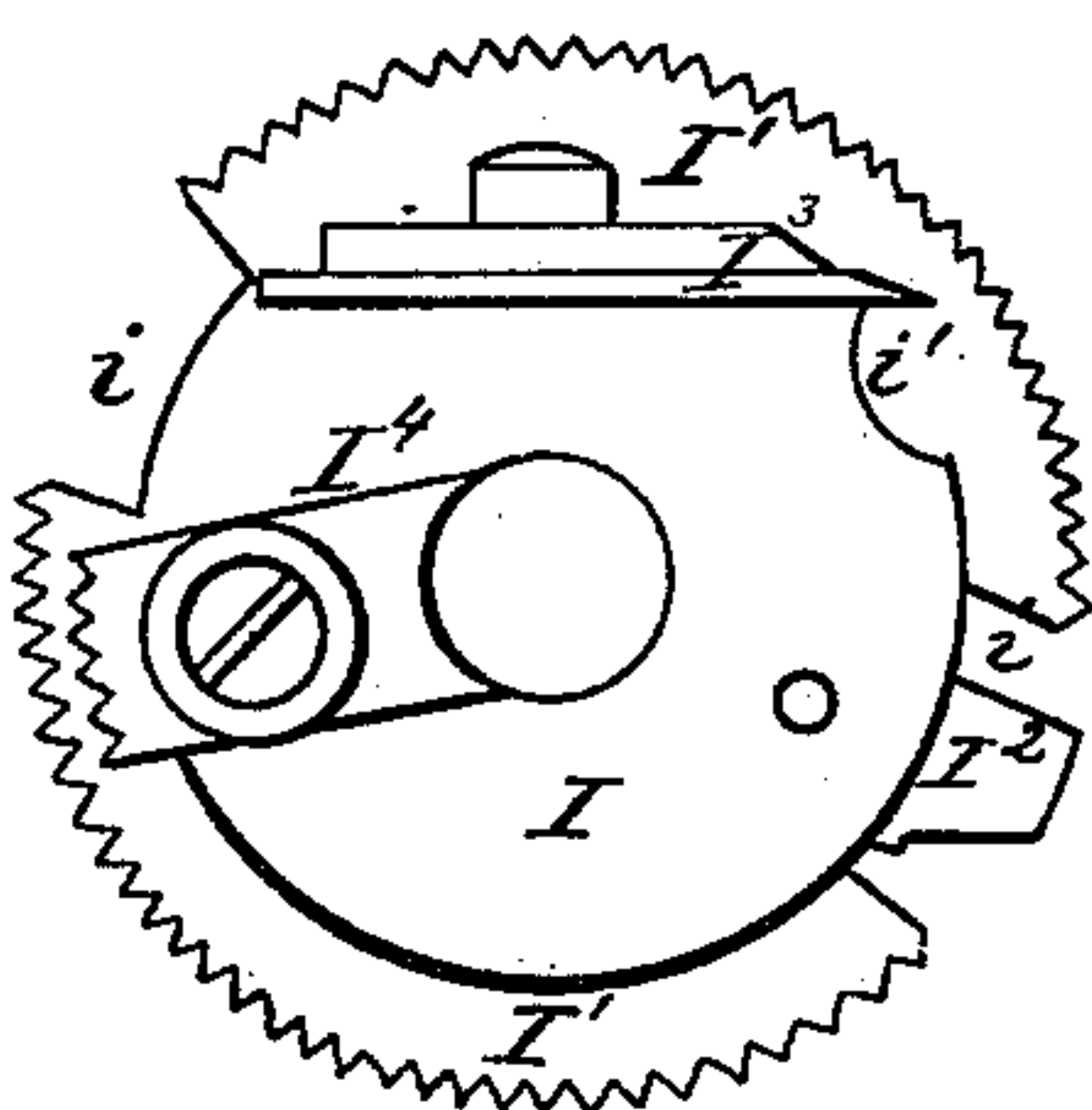
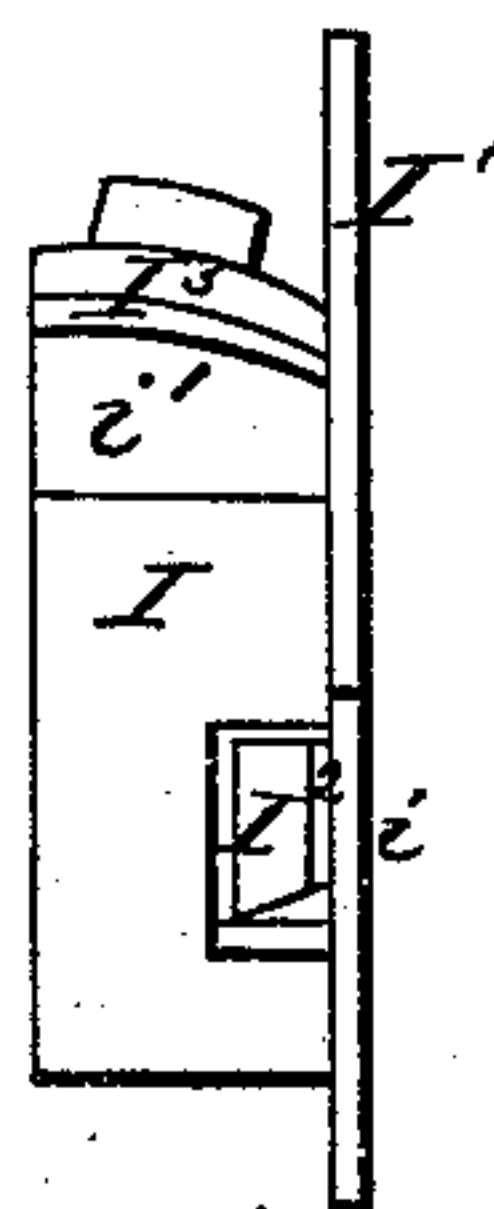


Fig:5



Witnesses;
Ann W. Herchel
Geo. P. Herchel Jr.

Inventor;
Wm Brown

United States Patent Office.

WILLIAM BROWN, OF ST. LOUIS, MISSOURI.

Letters Patent No. 93,855, dated August 17, 1869.

IMPROVEMENT IN MACHINE FOR MAKING BARRELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM BROWN, of St. Louis, in the county of St. Louis, and State of Missouri, have made certain new and useful Improvements in Machines for Making Barrels, Casks, and similar vessels; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My said machine receives the barrel, cask, tub, or similar vessel, after the staves have been hooped together; and its object is to thereupon perform the several operations of cutting off or "squaring" the stave-ends, and of chamfering, howelling, and crozing, all in one combined process.

And in the achievement of said object, the nature of this invention is in the arrangement of a rotating clamping-device, by which the barrel or cask is clamped, and slowly rotated, and in the combination herewith of one or two cutter-arbors, arranged for lateral feed, and rotating rapidly, and carrying the several tools for cutting, chamfering, howelling, and crozing, all of which will hereinafter more fully appear.

To enable those skilled in the cooper's art to make and use my said improvements, I will now fully describe the construction and operation thereof, having reference to the accompanying—

Figure 1 as a general plan; to

Figure 2 as a longitudinal sectional elevation; to

Figure 3 as a transverse sectional elevation of said machine; and to

Figures 4 and 5 as detail elevations and plan, respectively, of the cutter-head and its tools.

I support the operating-parts of my said machine on a proper base or frame, A, usually made of wood or cast-iron.

On the upper edge of said frame A, I arrange the slides A¹, having Λ -ridges, or other projections, to form a lateral guide, and also a rolling-surface for the tables B.

I prefer to arrange said tables with wheels b, grooved to fit the V-shaped slides A¹, but the same may rest by simple depending runners on said slides. Said tables B are supported directly upon the axles of said wheels b, by bearings arranged in the usual manner.

On said tables B, I arrange the clamping-devices, as well as the arbors' bearings.

In the ordinary application of my said machine for making barrels or casks, the processes heretofore described are performed simultaneously for both ends of the barrel or cask, and I therefore arrange on each table the clamping-devices, and cutters and supports, now to be described.

I support the clamping-device C, by its frame, on the inner end of the table B.

Said frame forms, by its inner surface, a cylindrical bearing for the geared clamping-ring C¹. Said ring has its inner surface shaped conically, conforming to the exterior surface of the barrel or cask here to be entered.

In order to retain the ring C¹ in its frame, and permit the rotation thereof, the pins or set-screws c are passed through the exterior frame C, and reach into a groove, c¹, of the said ring C¹.

If smaller sizes of barrels or casks are used, I place within the ring C¹ a second ring, fitting, by its exterior surface, to the ring C¹, and having its interior surface corresponding to the gauge of barrel or cask. Simple set-screws may be used to retain the second ring in its place, the pressure against it, in clamping the barrel, acting also to keep it in position.

In the operation of said clamping-device, it is necessary to move the same to a jamb upon the barrel or cask, and after completion of the operation to be performed thereon, to withdraw said clamping-device. This I accomplish as follows:

The clamping-device C, and its frame-yoke, being supported on and attached to the table B, I arrange each table for longitudinal motion, operating the same by the shaft D, which is held at the pillow-block D¹, to prevent end-play thereof.

On said shaft are arranged right and left screw-threads, engaging in nuts d, secured on each table B.

In order to rotate the shaft D, and thus, by action of the screw-threads, draw up the nuts d and tables B, as required, I arrange on said shaft the gear-wheels d', communicating with the wheel d² of the counter-shaft D², lying transversely across the frame A, and being supported thereon.

Said shaft D² is rotated by the hand-wheel D³.

In the usual construction of my machine, I make wheel D³ large and heavy, so that by a sudden application of the power of the operator, it may be quickly turned, and thus act to throw the tables B and yoke C forward, and clamp the barrel or cask tightly.

In order to turn the barrel in the clamping-frame, I have arranged, in engagement with the geared clamping-ring C¹, the spur-wheel C³, supported by the shaft C⁴, upon standards on the tables B.

The shaft C⁴ is driven by pulley C⁵, connected by belt with the exterior power-source.

The pulley and shaft are here allowed to turn, but prevented from lateral movement by fixed guides, connected with the main frame A. The supporting-standards and wheels C³ therefore move on said shaft C⁴, during the stroke of the tables B in clamping; and the feather, holding the spur-wheel C³ on the shaft C⁴, slides in a longitudinal slot of said shaft.

In order to arrange the cutter-tools for proper operation of the barrel thus held and rotated, I have supported the cutter-arbors E by sliding bearings F,

on the slides F' of the tables B. The bearings F are nicely fitted, to give a true rectilinear motion, and arranged with brasses and set-screws, at bearing surfaces, in the usual workmanlike manner.

The arbors E are revolved by pulley E', with belt-connection to the exterior power-source; and to feed the tool up to the stuff of the barrel, keg, or cask, I have constructed a hand or power feeding-device, as follows:

A bar, G, extends longitudinally across, connecting the two bearings F', and being secured thereto by a staple, g.

Said bar G has centrally placed thereon the nut G', in engagement with the screw-shaft H, this being operated by hand, wheel, or pulley.

In the longitudinal reciprocal motion for clamping and unclamping, in which the bearings F are carried along with the tables B, the bearings F will simply move along the bar G; but in the feed-motion of the tool required, the bar G being moved laterally by the screw-shaft H, the bearings F and arbors E are moved laterally by said bar, thus giving the feed required.

Owing to the combined process here performed, the cutter-head is arranged in a peculiar manner to receive the several tools thereon.

Said cutter-head (as indicated in figs. 4 and 5) consists of a metallic socket-disk, I, arranged to fit upon the arbor-end, being pressed tightly against the shoulder e by set-screw e'.

The saws I', for cutting off the stave-ends, may be either connected with the disk I, or be placed directly upon the arbor E, being then between the disk I and shoulder e.

Said saw is arranged with a slot, i, for the chamfer-

ing-tool I', this being held, by a proper set-screw, in a groove of the disk I.

On the circumference of the disk I, the howelling-tool I' will be supported, being secured by set-screws. Under said tool, a proper groove, i', is cut in the disk I, to allow the cuttings to clear the tool in working.

Lastly, I secure, in a slot of the disk I, so as to project beyond its circumference, the crozing or grooving-tool I', also by set-screws or key, in proper manner.

The tools thus prepared, being secured on the arbors E, and revolving rapidly, are moved by the feed-devices G and H up to the barrel or cask, which slowly revolves in the clamping-ring C', and thus, by the lateral feed of the tools and the rotation of the casks, the entire end of the barrel or cask is properly operated upon; and by the duplicate arrangement of arbors E, clamping-devices C, and tables B, both ends are finished at one operation.

Having thus fully described my invention,

What I claim, is—

1. The shaft C', arranged with a sliding gear-wheel, C', to rotate the ring C', when the latter is in yokes C, and arranged for a simultaneous movement upon tables B B, substantially as set forth.

2. The arrangement of the shaft H, operating the bar G, bearings F, and arbors E, the latter adapted to carry a cutter-disk, substantially as set forth.

In testimony of said invention, I have hereunto set my hand.

WM. BROWN.

Witnesses:

GEO. P. HERTHEL, Jr.,
WM. W. HERTHEL.