

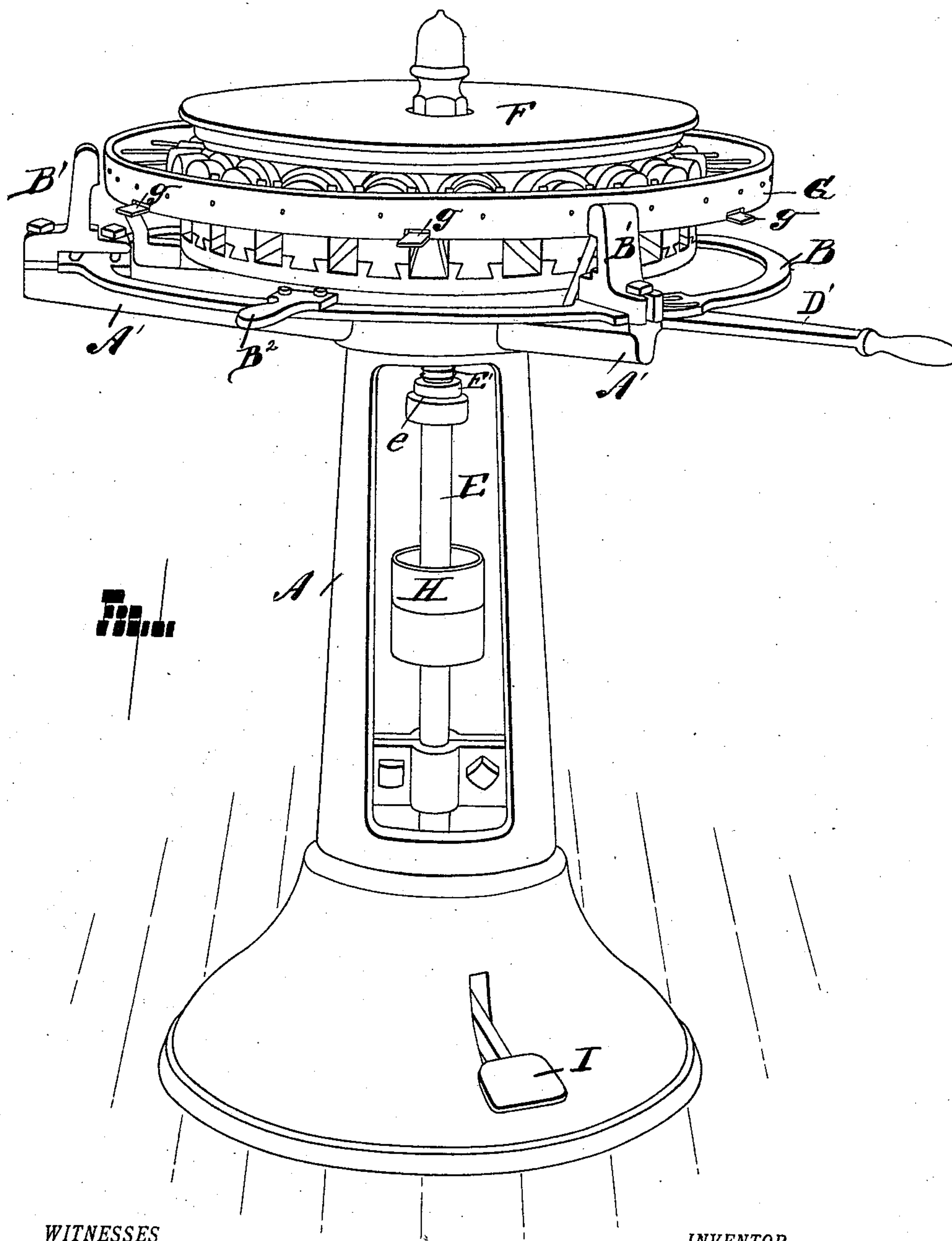
(No Model.)

3 Sheets—Sheet 1

D. B. WELIVAR.
MACHINE FOR BORING WHEEL RIMS.

No. 575,745.

Patented Jan. 26, 1897.



WITNESSES

J. H. Stager

G. M. Davis.

INVENTOR

Davis B. Welivar

By J. L. Thomas
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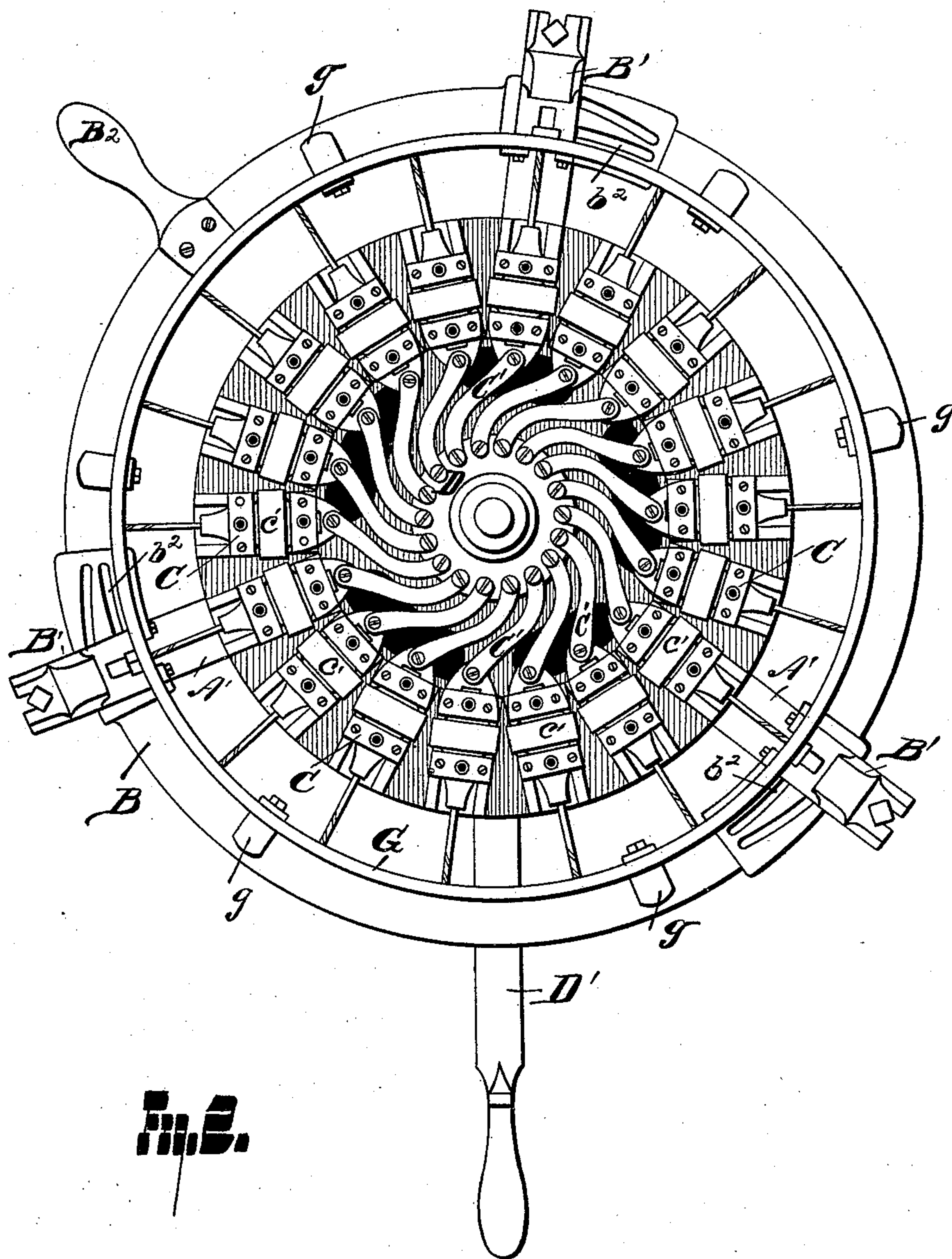
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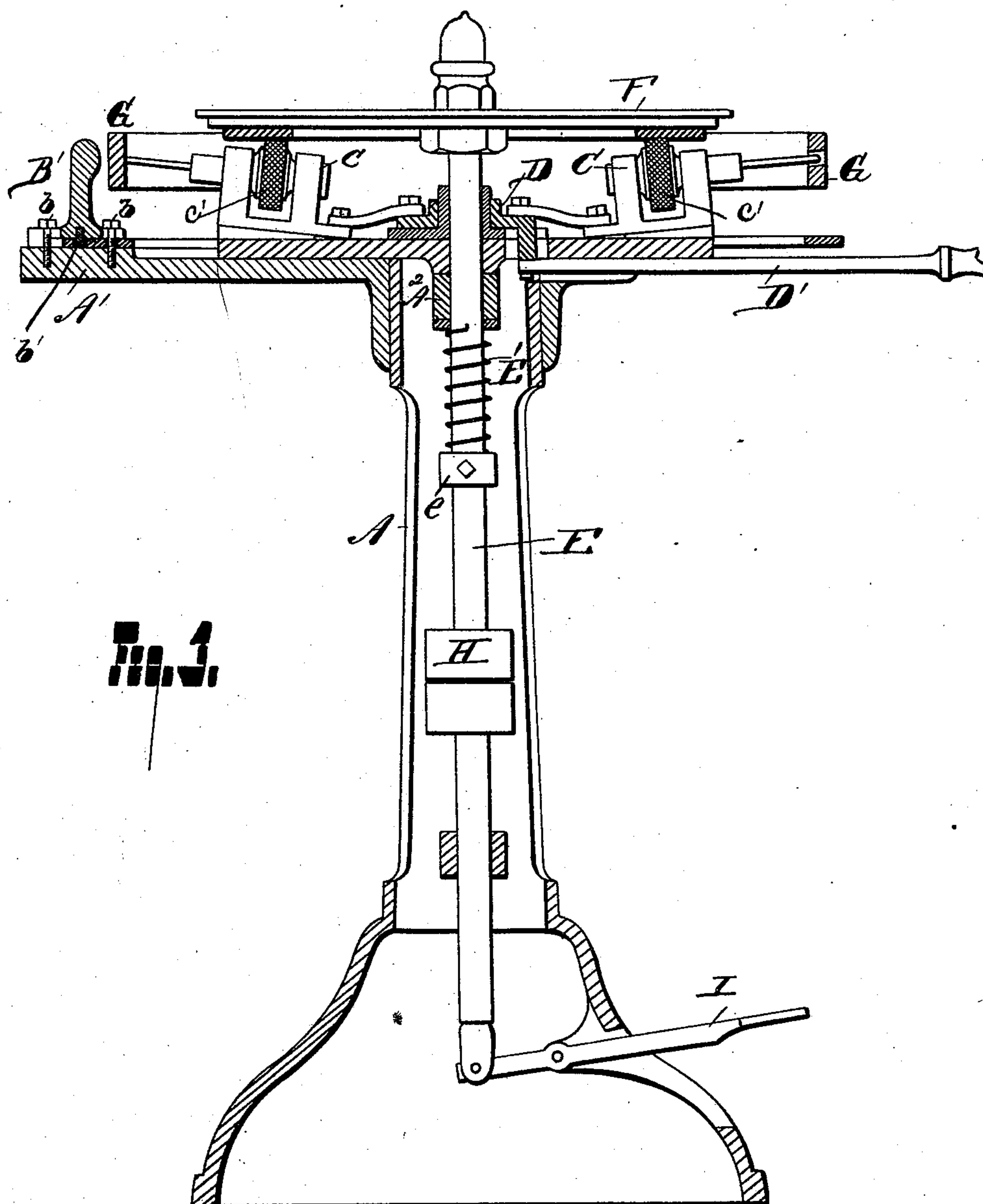
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UNITED STATES PATENT OFFICE.

DAVIS B. WELIVAR, OF MUNCY, PENNSYLVANIA.

MACHINE FOR BORING WHEEL-RIMS.

SPECIFICATION forming part of Letters Patent No. 575,745, dated January 26, 1897.

Application filed January 17, 1896. Serial No. 575,911. (No model.)

To all whom it may concern:

Be it known that I, DAVIS B. WELIVAR, a citizen of the United States, residing at Muncy, county of Lycoming, State of Pennsylvania, have invented a certain new and useful Improvement in Machines for Boring Wheel-Rims; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improvement in drilling-machines, particularly for drilling holes for spokes in bicycle or other wheel-rims.

In the drawings, Figure 1 is a perspective view of my machine. Fig. 2 is a plan view with the crown driving-disk removed. Fig. 3 is a central vertical sectional view.

A represents the base, which is preferably a bell-shaped column, to which is bolted the spider-frame A'. On the top of said spider-frame is bolted a circle having its upper side inclined, conforming to the pitch of the spokes from the hub to the rim of a wheel. A series of radial dovetailed grooves are cut in this circle, in which are fitted a corresponding number of drill-stocks C, on the spindles of which are mounted soft-rubber rolls or pulleys c'. These drill-stocks are connected by links C' to an operating-disk D, which is provided with a lever D'.

E is the main driving-shaft, to the upper end of which is secured the crown driving-disk F to give motion to the rubber rolls or pulleys c'.

G is a ring-templet or drill-guide through which the drills travel during the act of boring the rims.

On the spider-frame A' are mounted a series of dogs B', which are moved in and out by a flat ring B, having under each dog an inclined slot, into which the pins b' on the under side of the dogs enter.

b b are bolts which, traveling in the slots b² b³ in the dogs, serve as guides for the dogs when motion is imparted to said dogs by the flat ring B in the manner before described. The handle B² on the ring B serves to rotate said ring and cause the dogs to move in and

out at will, making a universal chuck or clamp for holding and centering the rims to be drilled.

On the ring-templet or drill-guide are bolted on its inner side a series of brackets or angle-dogs g, arranged so that a portion extends outward beyond the periphery of the ring-templet, thus making a support for the rims to be drilled. These dogs g are adjustable for different widths of rims by means of a slot cut in the dog, through which a bolt passes to secure them to the ring-templet.

On the vertical shaft E are mounted driving-pulleys H. On the under side of the disk F are secured beveled wooden circles arranged to engage the rubber rolls or pulleys c'.

E' is a spring located on the driving-shaft E, between the collar e, secured to said shaft and the collar bolted to the bearing A², the office of this spring being to draw the crown driving-disk F into frictional engagement with the rubber rolls or pulleys c', imparting motion thereto when power is applied. At the lower end of the vertical driving-shaft E is pivoted a foot-lever I, by means of which the vertical driving-shaft can be raised, throwing the disk F out of contact with the rubber rolls or pulleys which operate the drills.

The operation of the device is as follows: The rim to be drilled is slid over the ring-templet G and caused to rest upon the angle-dogs g. The clamping-dogs B' are then brought to bear upon the rim by a slight rotating motion given to the flat ring B, which, acting upon the clamping-dogs by means of the inclined slots in which the pins b' b' travel, the rim is securely engaged in position to be drilled. Power is now applied to the pulley H, which causes the disk F to rotate. The disk being brought into frictional engagement with the rubber roll by means of the spring E' imparts motion to all the drills. Then the operator by means of the lever D' gives a slight rotary motion to the disk D, to which are secured the links connecting the several drill-stocks, which imparts a reciprocating or feeding motion to the drill-stocks. The drills are thus forced to their work, and by reversing the motion the drills are withdrawn from the rim when the holes are bored. The rim is then removed

from between the clamps and reversed and again clamped. A pin is inserted in one of the holes of the rim to serve as a guide for centering the holes to be drilled at the opposite angle, the pin serving as a guide for locating the position of the holes to be drilled. The rim is then clamped in position and the operation of drilling the holes repeated. It will thus be seen that every other hole is drilled at an angle corresponding with the incline of the spokes to be inserted. The vertical driving-shaft can be raised, throwing the operating-disk out of contact with the rubber rolls and thus causing the drills to stop by means of the foot-lever I. A suitable locking-dog is provided on the foot-lever I to keep the operating-disk F out of contact with the rubber rolls or pulleys when so desired.

What I claim is—

1. In a machine for boring wheel-rims, the combination of a series of drills, friction-rolls

for operating the drills, friction crown driving-disk for operating the rolls, a spring for holding the crown-wheel in contact with the rolls, and means for lifting said crown-wheel against the action of said spring out of contact with the rolls, substantially as described.

2. In a machine for boring wheel-rims, the combination of a series of drills, inclined and arranged radially, friction-rolls for operating the drills, a friction crown driving-disk for operating said rolls, means for feeding said drills to their work simultaneously, and means for holding said crown driving-disk in contact with the rolls, and means for lifting said crown driving-disk out of contact with the rolls, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

DAVIS B. WELIVAR.

Witnesses:

CHARLES H. FISK,
G. M. DAVIS.