

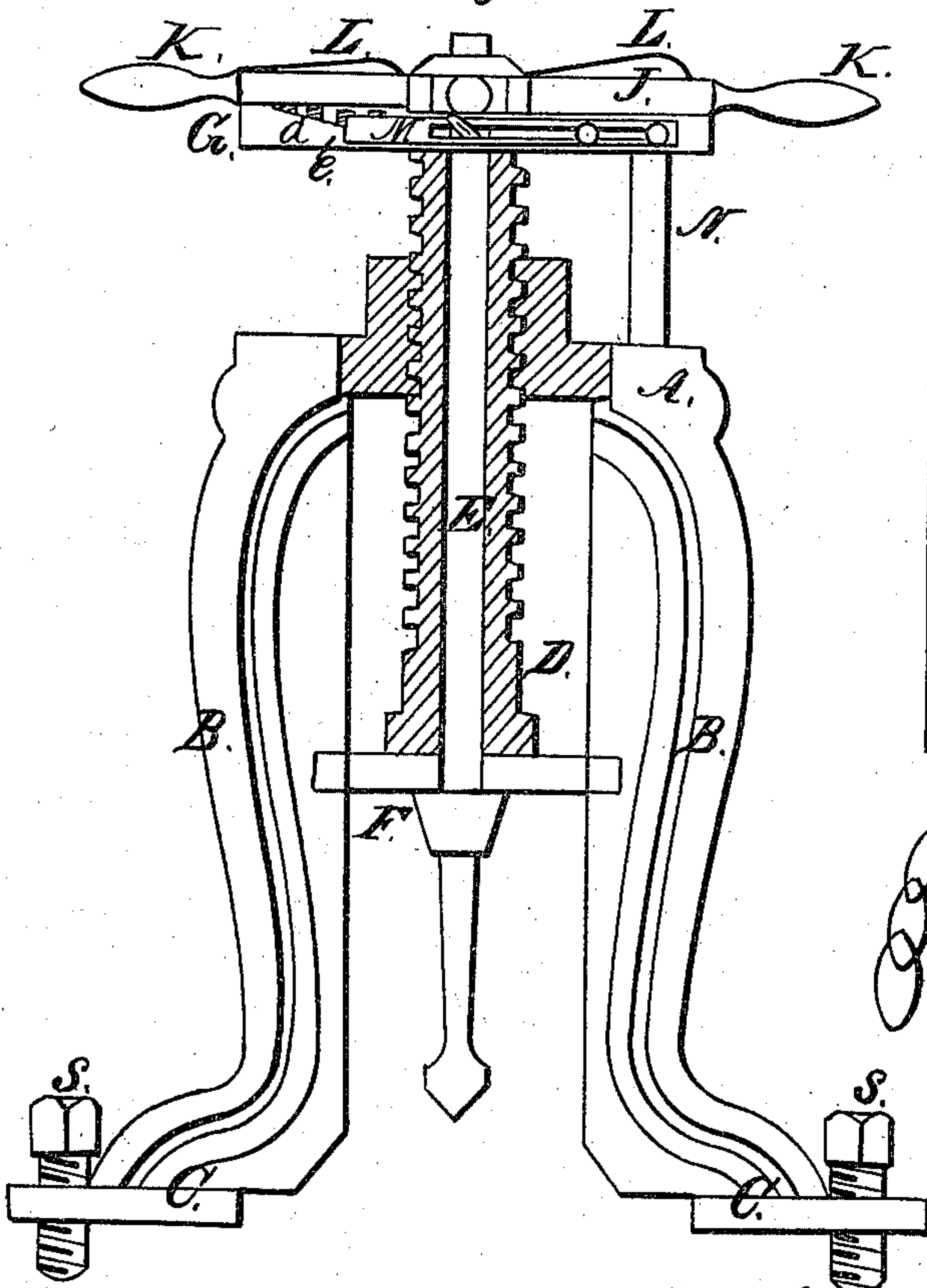
*Cullen & Baird.*

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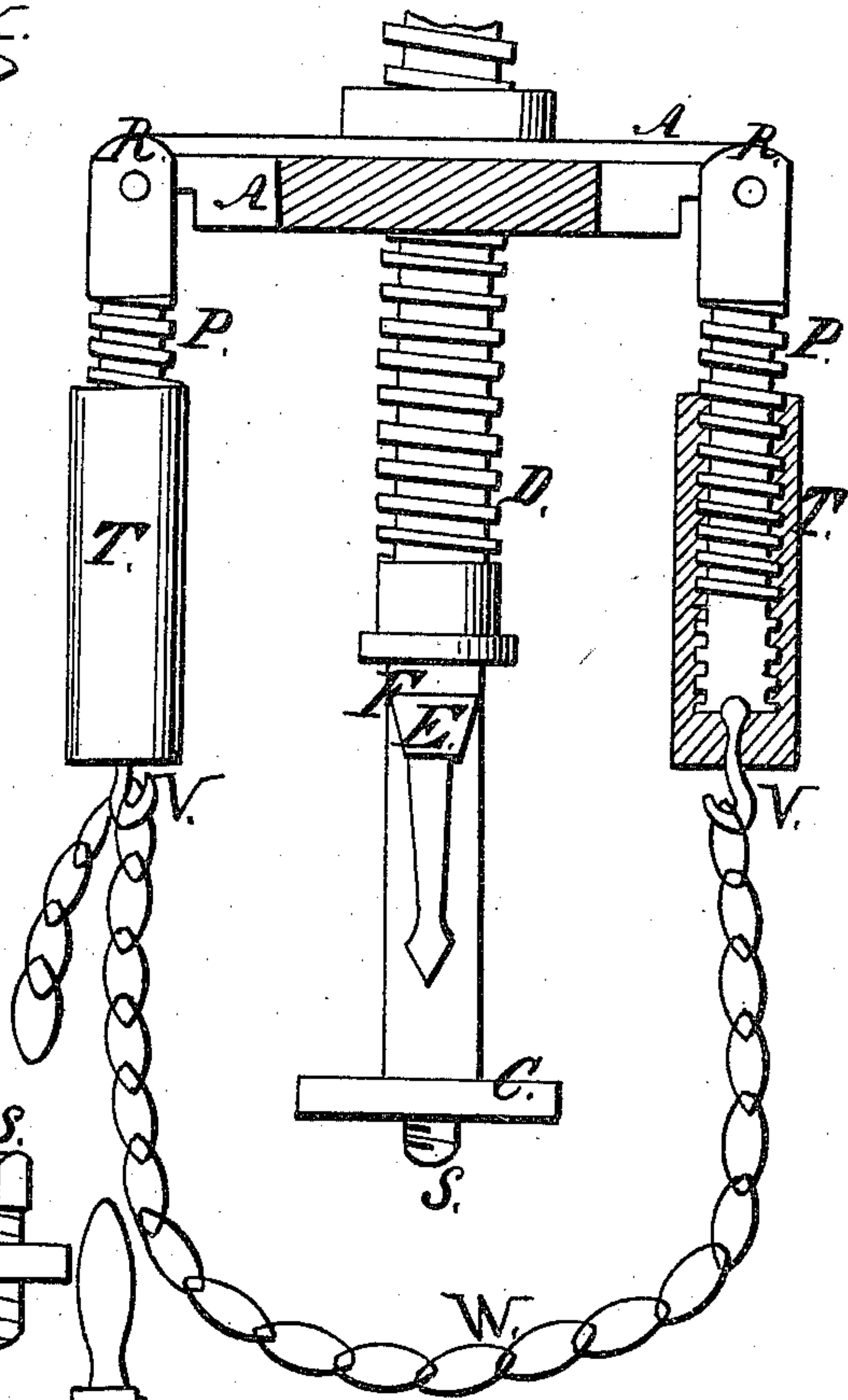
*N<sup>o</sup> 83,366.*

*Patented Oct. 27, 1868.*

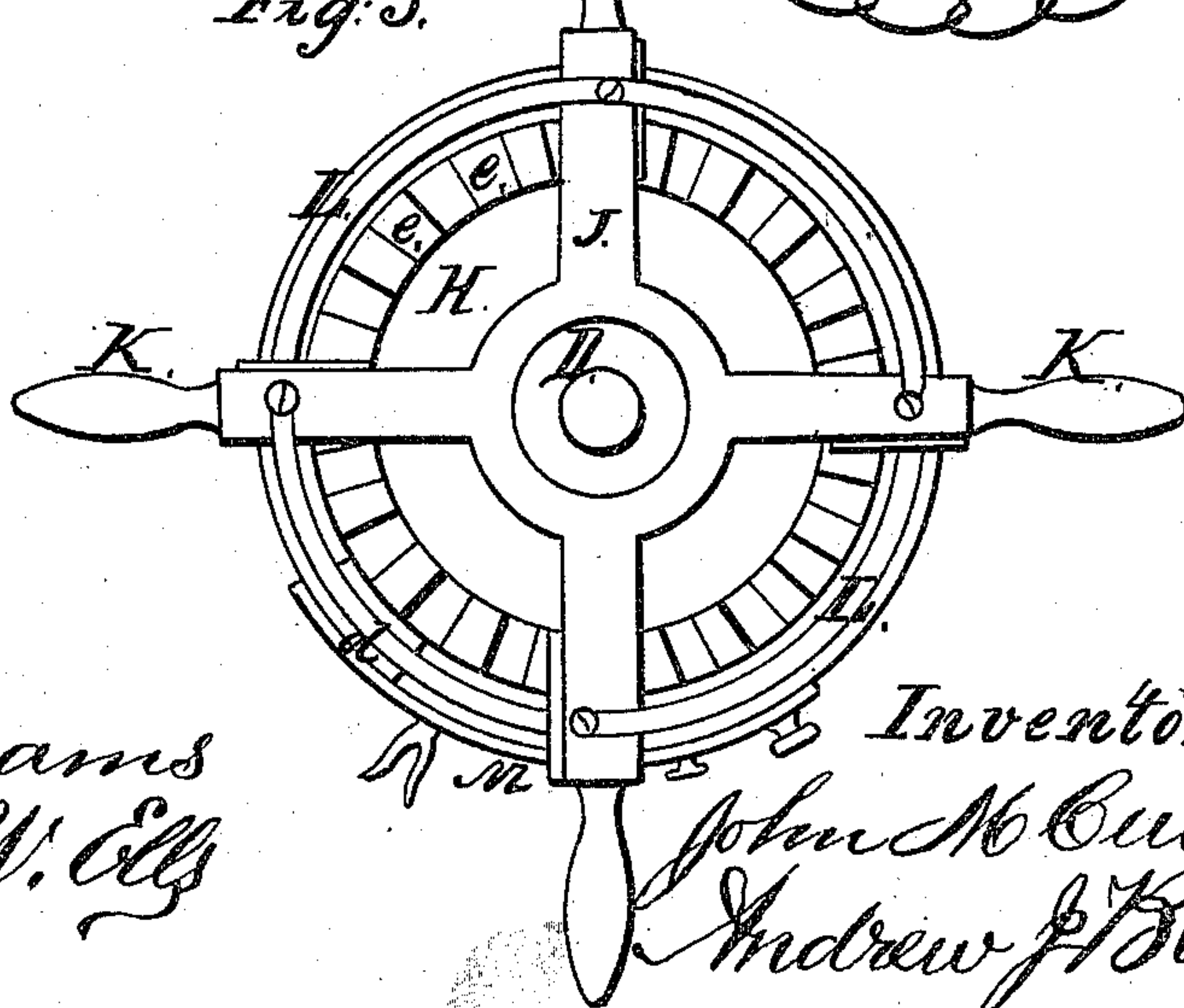
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Witnesses:*

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# United States Patent Office.

JOHN M. CULLEN AND ANDREW J. BAIRD, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 83,366, dated October 27, 1868.

## IMPROVED DRILL-PRESS.

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

To all whom it may concern:

Be it known that we, JOHN M. CULLEN and ANDREW J. BAIRD, of the city of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented certain new and useful Improvements in Portable Drill-Presses; and we do hereby declare that the following is a full, clear, and exact description of our invention, reference being had to the accompanying drawings, forming part of this specification, and to the letters of reference marked thereon.

The nature of our invention consists in the means we employ for fastening or attaching the apparatus to any object it may be found necessary to drill; also, the peculiar construction and operation of the "feed" and drill-ratchet, whereby we can feed and drill, by a continuous circular motion of the lever and pawl in one direction, without regard to the position of the press.

To enable others to understand and make our apparatus, we will proceed to describe its construction and operation by reference to the annexed drawings, wherein—

Figure 1 represents a longitudinal vertical section;

Figure 2, a side view, to exhibit the device for adjusting the article to be drilled; and

Figure 3, a top view of the operating-parts, or ratchet and pawl.

All the drawings are lettered, and similar letters denote corresponding parts in the several views.

We construct our "drill-press" by first making a cast-iron frame, A, with a pair of legs or supports, B B, in the foot of each of which, C C, is placed a set-screw, S S, for the purpose of adjusting the press to the form of the article to be operated on.

Through the top of this frame, so constructed, passes, in a vertical line, a hollow feed-screw, D, through the centre of which passes, longitudinally, the drill-spindle E, which is prevented from rotating with the screw by the sliding cross-head F, embracing the two legs aforesaid.

Fastened to the top of this screw is a circular ratchet-wheel, G, having a number of square teeth, *e e*, around the outer edge of its upper face H, while attached to the drill-spindle is a cross-head, J, having four or more handles, K K, projecting therefrom.

Attached to each of these cross-bars is a long spring, L, one end of which is secured in place to the handle

or bar by screws, while the other end, being broader, is intended to pass down and catch between the square teeth of the circular ratchet-wheel *e e*, and thus rotate the tool continuously, and the feed-screw intermittently, and give motion to the feed-screw, in the circumference of said wheel, which points are regulated by an adjustable plate, M, placed on the outside of said wheel, which plate moves around an incline, *d*, on which the end of the spring slides to the point of contact.

The incline, by means of the adjustable plate, may be lengthened or shortened, and thus increase or shorten the stroke of the levers K, and regulate the motion of the feed-screw.

This adjustable plate is prevented from revolving with the ratchet-wheel by means of a guide-rod, N, passing from said plate through a portion of the immovable top of the frame.

By this arrangement, the forcing-arms K K may have a continuous circular motion, by which they will turn the drill in the right direction, and feed down on the material to be drilled.

The method adopted by us for attaching this drill-press to the object to be drilled is illustrated by fig. 2. By reference thereto, it will be seen that from each of two opposite sides of the upper portion of the drill-press or frame A is suspended a male screw, P, moving on a pivot, R, so as to allow of its being drawn in towards the drill, or extended outward from it, thereby adapting itself to the size of the object to be drilled.

On each of these male screws is placed a female screw, T, furnished, at the bottom, with a hook, V; and to these hooks is suspended a chain, W, for passing around the article to be drilled, which chain is tightened or loosened by turning the said female screws, and the drill-press thereby secured firmly in position.

Having thus briefly described our invention,

What we claim is—

Not any of the specified parts in severalty, but the improved tool, consisting of the several parts specified, all combined, constructed, and arranged as described.

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Witnesses:

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