

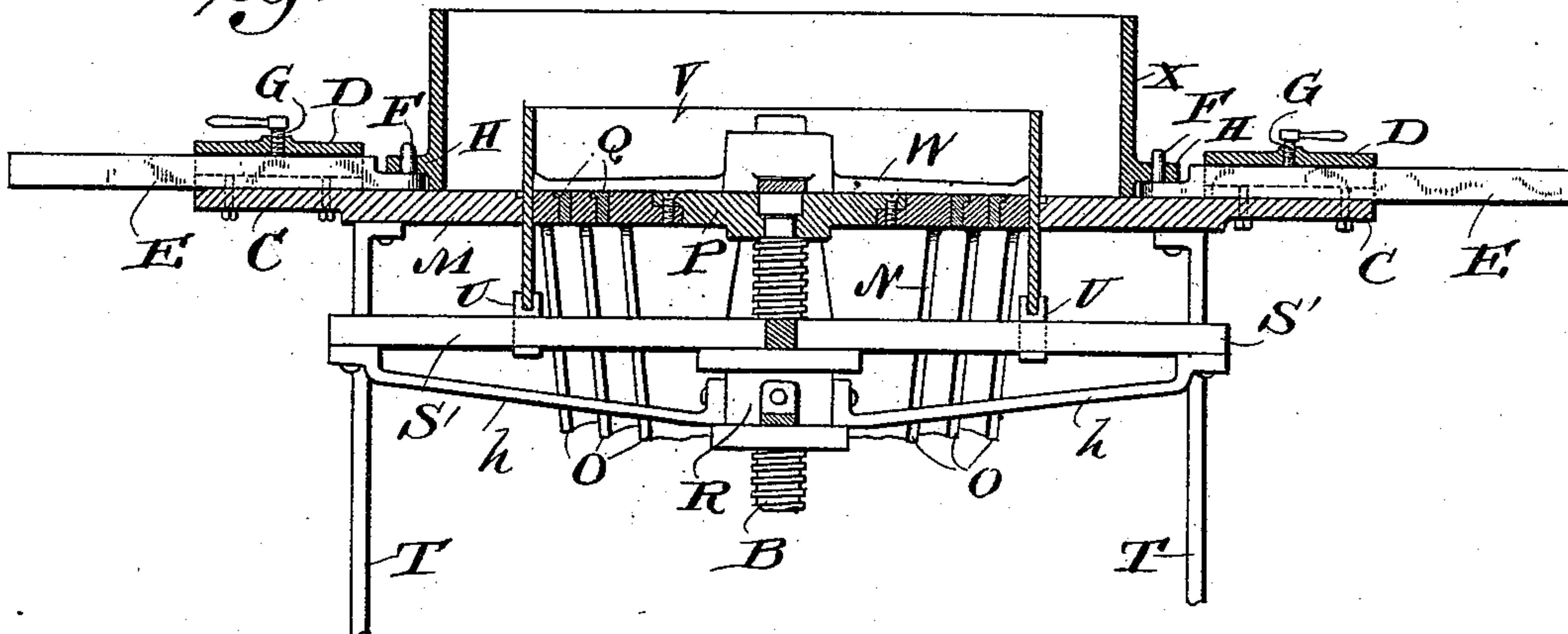
(No Model.)

R. CAIRNS.  
DIFFERENTIAL PATTERN MACHINE.

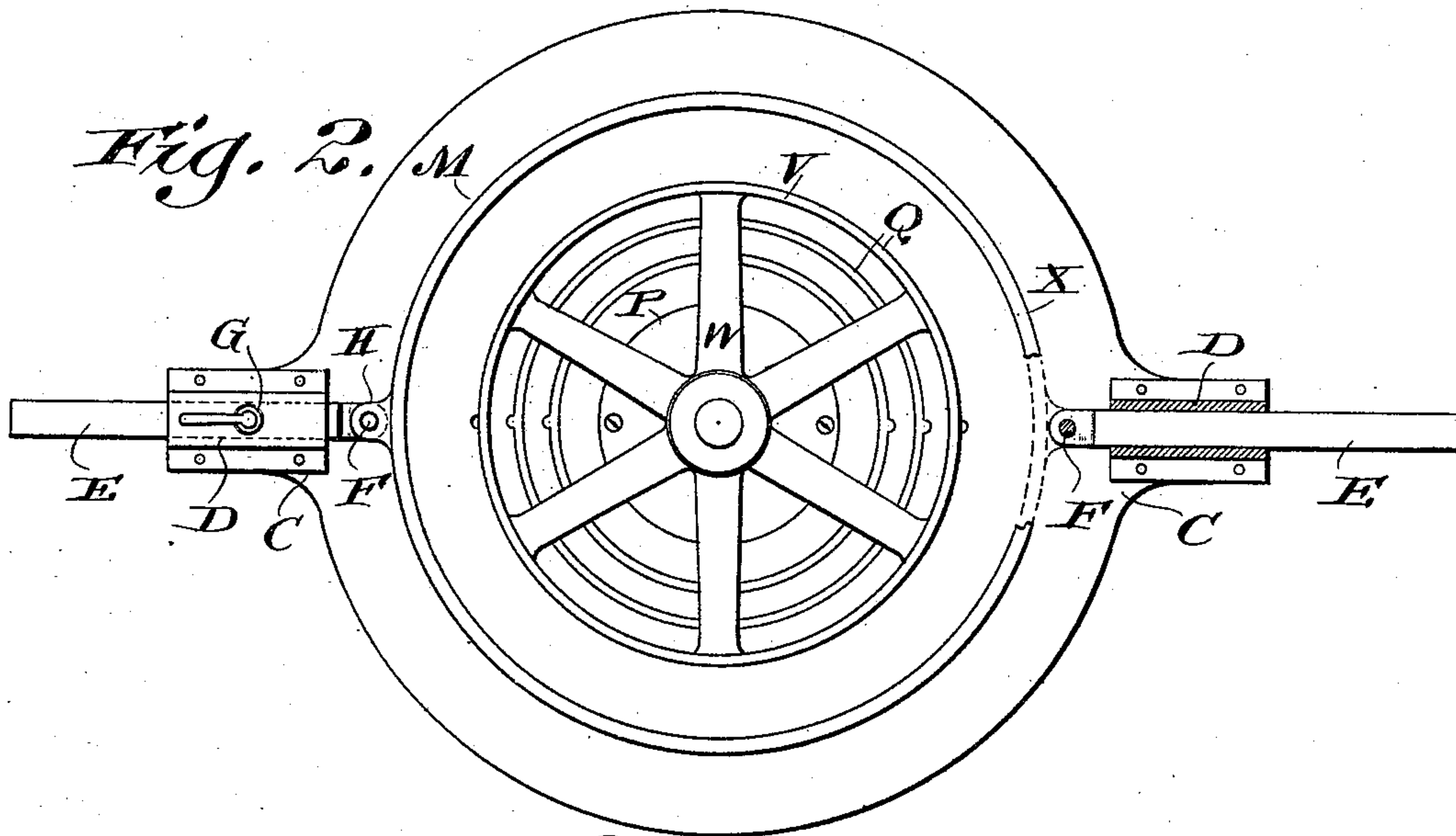
No. 532,443.

Patented Jan. 15, 1895.

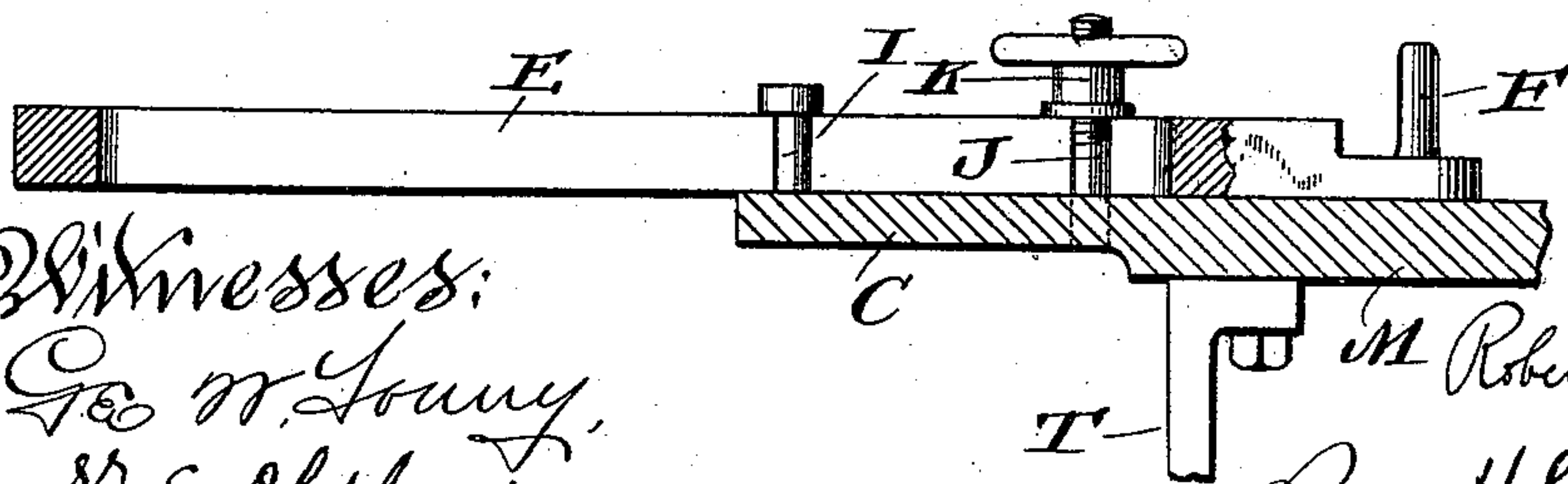
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ROBERT CAIRNS, OF WATERTOWN, WISCONSIN.

## DIFFERENTIAL PATTERN-MACHINE.

SPECIFICATION forming part of Letters Patent No. 532,443, dated January 15, 1895.

Application filed June 16, 1894. Serial No. 514,758. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT CAIRNS, a citizen of the United States, and a resident of Watertown, in the county of Jefferson, and in the State of Wisconsin, have invented certain new and useful Improvements in Differential Pattern-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to improve the differential pattern machine set forth in my Patent No. 507,783, of October 31, 1893; and it consists in providing said machine with adjustable devices for holding drag and cope sections of various sized flasks in place during the operation of setting up molds, as will be hereinafter specifically set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a vertical transverse section of a portion of my differential pattern-machine and a flask-section held in place thereon by devices contemplated in the present invention; Fig. 2, a plan view partly in section, and Fig. 3 a detail sectional view of another form of adjustable holding devices for flask-sections.

Referring by letter to the drawings B represents the screw-spindle; M, the table; N, O, the concentric skeleton columns; P, the center-plate; Q, the removable guideway fillers; R, the nut; S', the spider-arms; h, the braces for these arms; T, the vertical guide-bars; U, the grooved slides; V, the pulley-rim pattern; W, the spider-pattern, and X the flask section shown and described in my prior patent.

In carrying out my improvements I provide the table M with radial ears C at diametrically opposite points, and in one form of my invention these ears are employed as supports for boxes D bolted thereto as illustrated in the first two figures, these boxes serving as guides for bars E having offset inner ends provided with upwardly extended pins F, and as a means for locking the bars in any position of their possible longitudinal adjustment clamp-screws G are engaged with tapped openings in the boxes. The pins on the bars are for engagement with openings in ears H projecting from the flask-section X and these ears seat on the offset ends of said bars.

As shown in Fig. 3, the boxes D may be omitted and each bar E provided with a longitudinal slot for the engagement of guide-pins I, J, on the table-ears, the latter one of these guide-pins being screw-threaded to receive a clamp-nut K that serves to lock the bar in adjusted position.

From the foregoing it will be seen that the sections of various sized flasks may be securely locked in place on the machine-table and this has been found of advantage in practice.

While means herein set forth for the detachable connection of the bars and flask-sections are preferable the same may be variously modified without departure from my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the machine-table provided with guides, bars longitudinally adjustable with relation to the guides, clamping-devices operative against the bars to lock the same in adjusted position, and suitable means for detachably connecting the inner ends of said bars with a flask-section, substantially as set forth.

2. The combination of the machine-table provided with guides, bars longitudinally adjustable with relation to the guides and having offset inner ends, upwardly extended pins on these offset ends of the bars, and suitable means for locking the bars in adjusted position, substantially as set forth.

3. The machine table provided with radial ears at diametrically opposite points, guides on the ears, bars longitudinally adjustable with relation to the guides, suitable means for locking the bars in adjusted position, and other suitable means for detachably connecting said bars and a flask-section, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Watertown, in the county of Jefferson and State of Wisconsin, in the presence of two witnesses.

ROBERT CAIRNS.

Witnesses:

A. TANCK,  
AUG. TANCK, Jr.