

J.C. Wells,

Cam.

No. 95,174.

Patented Sept. 21. 1869.

Fig 1

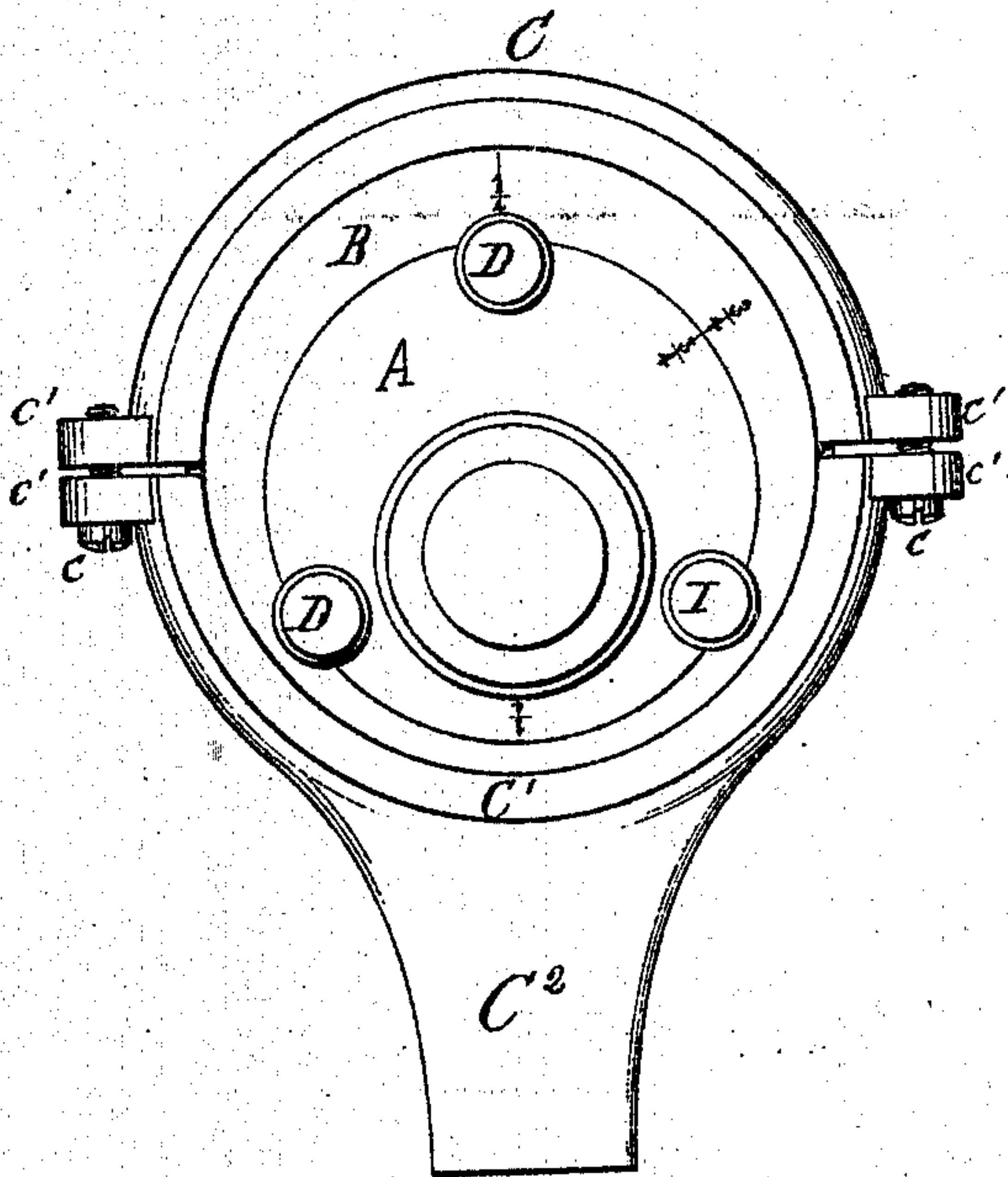
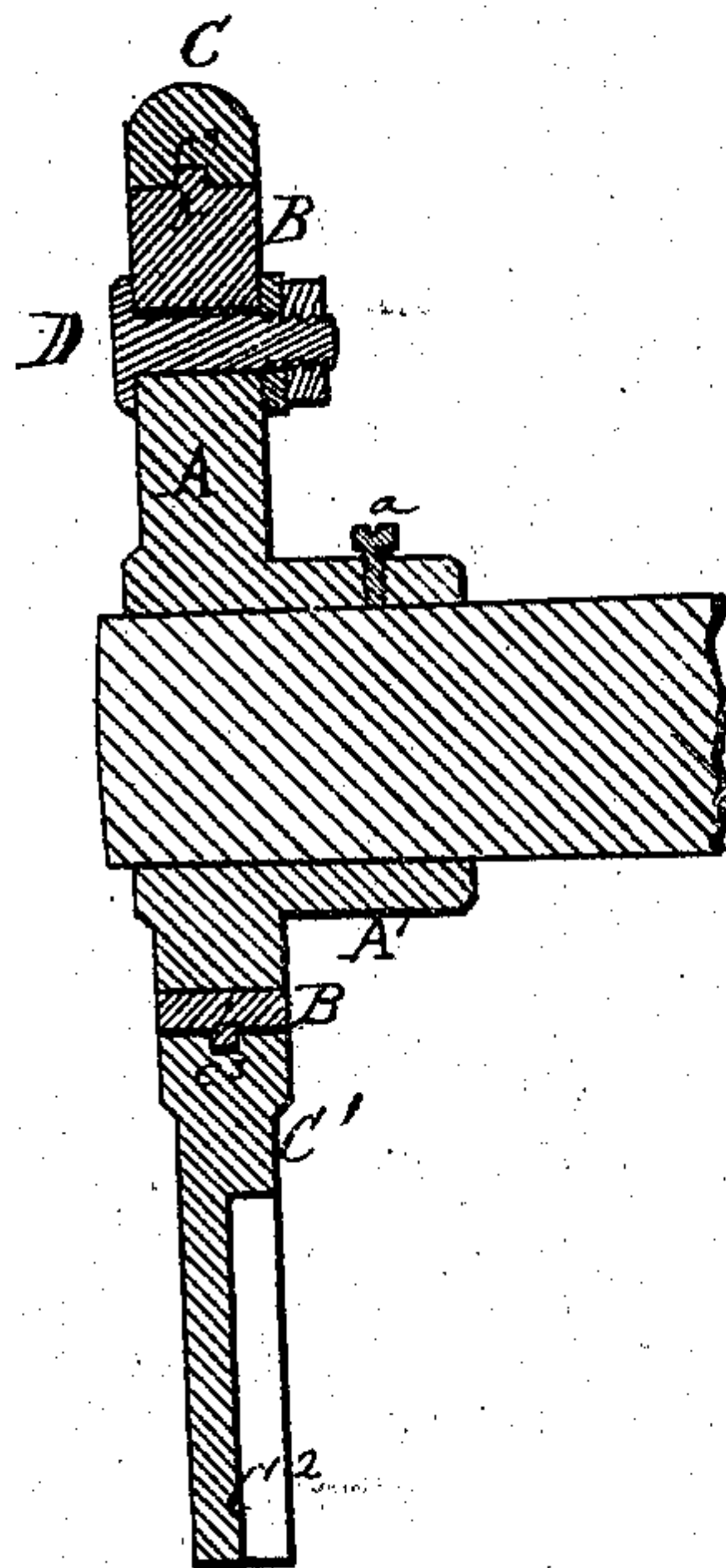


Fig 2



Witnesses.

Alfred Mahon
Henry Kelly, q. ad.

James C. Wells
by his Attorney
Wm. Smith

United States Patent Office.

JAMES C. WELLS, OF WARREN, PENNSYLVANIA.

Letters Patent No. 95,174, dated September 21, 1869.

IMPROVEMENT IN ECCENTRICS.

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, JAMES C. WELLS, of Warren, county of Warren, and State of Pennsylvania, have invented certain new and useful Improvements in the Construction of Eccentrics, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a plan view of the eccentric, and

Figure 2 is a sectional view through the line $x y$, fig. 1.

The invention relates to that class of eccentrics which is mounted upon and carried by a revolving shaft, and is usually made adjustable upon said shaft, such adjustment having reference to the distance at which the throw of the eccentric shall either precede or follow the crank which drives the shaft, and by means of which adjustment the desired lead may be given to the valve of a steam-engine.

The object of my invention is to enable any one to not only make the adjustment above described, but also to change at will the length of the throw or travel of the valve by means of the eccentric, instead of effecting it through a link, as is frequently done in locomotive-engines, or by means of a slotted arm on a rock-shaft, with which both valve and eccentric are connected.

The construction which I have invented to accomplish the changes of movement first described will be fully understood from the following description of its construction and operation.

In the drawing—

A represents an eccentric wheel of the ordinary form, and is shown as being provided with a projecting hub, A' , adapted to receive a set-screw, a , by which the eccentric may be secured to the shaft, or any other mode of adjusting and securing to the shaft may be employed.

B is an eccentric ring, surrounding and fitting closely eccentric A.

$C O^1$ is a strap surrounding the entire eccentric, and held in contact with it, and tightened or loosened, as may be required, by means of bolts c passing through ears b^1 .

The part O^1 , of the strap, is expanded into a shank, C^2 , substantially as shown in the drawing, and to which is connected the eccentric rod in any usual or well-known manner.

Upon the periphery of ring B there is a bead or rib, b , which engages with a corresponding groove, c^3 , upon the inner surface of strap $C O^1$, serving to keep ring B and said strap always in proper relation to each other, which end may be also attained by any other construction, if circumstances may render advisable.

The bolts D pass through eccentric wheel A, in perforations, made so close to the edge of said wheel that the head of the bolt and also the nut d shall lap over and impinge upon the inner edge of ring B, thus

serving a twofold purpose; that is, they keep both wheel and ring always in line with each other, and at the same time they, when screwed up tightly, cause the ring to revolve simultaneously with the wheel.

The operation of my improvement is as follows :

The wheel A is rotated by a shaft passing through hub A' , which is secured to the shaft in any ordinary manner, and if it is desired to give the straps $C O^1$ the greatest extent of throw which is possible to do, I turn the ring around until its widest point is upon the same side of hub A' as is the greatest diameter of wheel A, and making the longest radial line of said ring form an extension of the longest radial line of said wheel.

This position is indicated on the drawing by the figures $\frac{3}{4}$, upon both ring and wheel being brought close together.

It will be readily seen that this arrangement will produce the desired result, inasmuch as it throws just as much of the eccentric upon one side of the driving-shaft as is possible; and it is equally apparent that if I reverse the relative position of wheel A and ring B, by bringing the narrowest part of the wheel A, which is indicated by the figures $\frac{1}{4}$, around to the widest part of rim B, which is indicated upon its face by $\frac{1}{4}$, it will bring the hub A' as near as is possible to the centre of the eccentric, always regarding both wheel and ring as constituting the eccentric, I shall have reduced the throw to its minimum.

Among the advantages gained by my peculiar arrangement I will mention,

First, great simplicity of construction, and consequent small liability to get out of order.

Second, entire freedom from elongated slots in the centre, which weaken the parts.

Third, its adaptation to use upon a shaft of uniform size throughout, instead of being operated by a crank-pin.

I do not claim broadly an eccentric in which the length of the throw can be varied, nor one in which the lead can be changed, these results having been accomplished before, as shown in the patents of M. G. Wilder, in 1864, and N. C. Stales, January 26, 1864, and the rejected application of R. W. Drew, in 1861; but having thus described the construction and operation of my improved eccentric,

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

1. The combination of the eccentric wheel A, eccentric ring B, strap $C O^1$, and bolts D, all arranged and operating substantially as set forth.

2. The combination of the eccentric wheel A, eccentric ring B, strap $C O^1$, bolts D, and set-screw a , operating substantially as set forth.

JAMES C. WELLS.

Witnesses:

T. J. WATERS,

W. F. KINGSBURY.