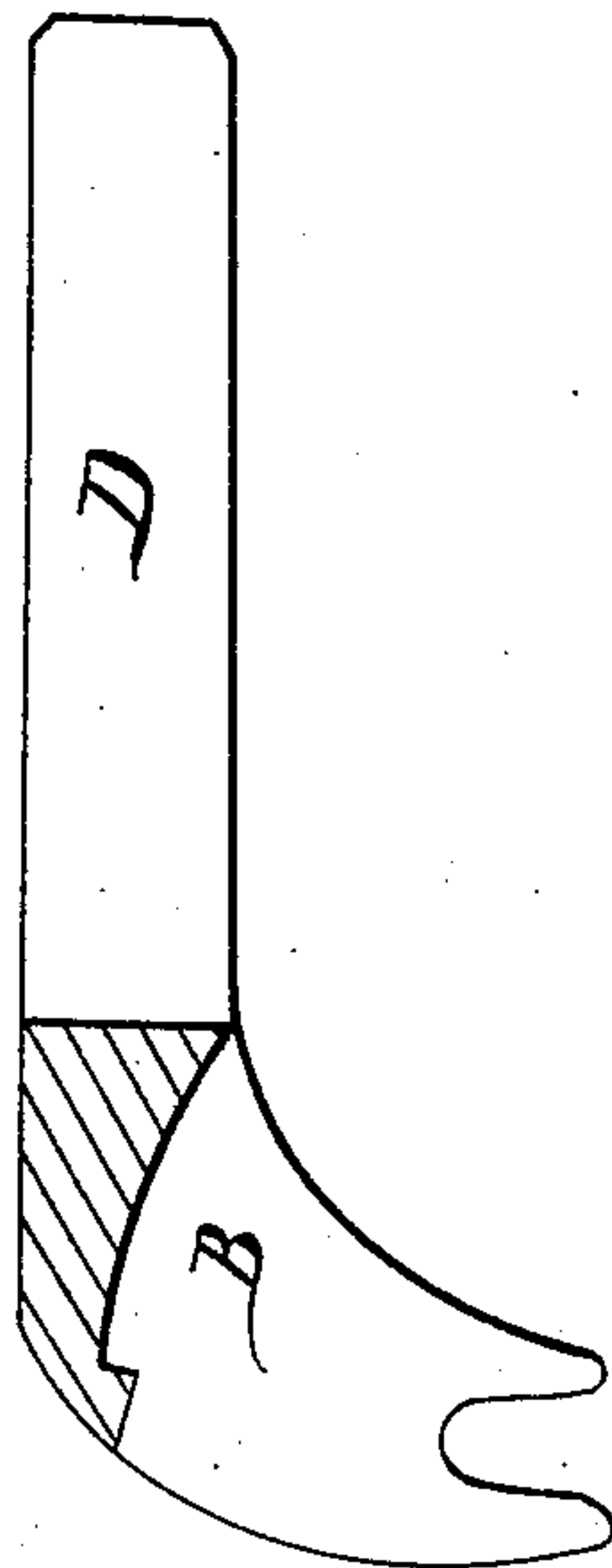


E. P. RUSSELL.  
PAWL AND RATCHET.

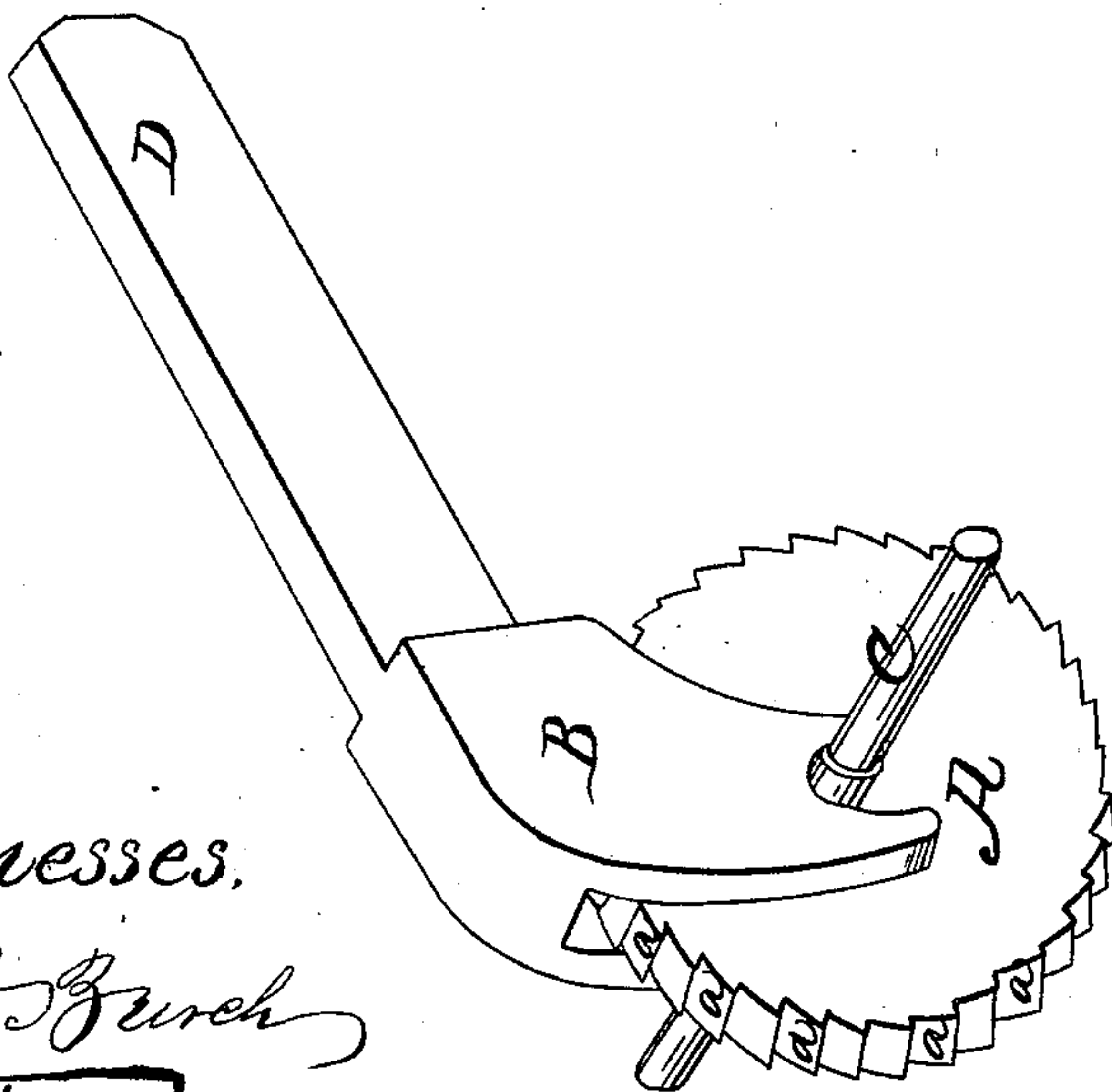
No. 29,310.

Patented July 24, 1860.

*Fig. 2.*



*Fig. 1.*



Witnesses.  
*Chas. G. Burch*  
*J. G. Clayton*

Inventor  
*E. P. Russell*

# UNITED STATES PATENT OFFICE.

E. P. RUSSELL, OF MANLIUS, NEW YORK.

PAWL AND RATCHET.

Specification of Letters Patent No. 29,310, dated July 24, 1860.

*To all whom it may concern:*

Be it known that I, E. P. RUSSELL, of Manlius, Onondaga county, in the State of New York, have invented a new and useful  
5 Feed-Motion for any Machinery Requiring Feed-Motion, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters  
10 of reference marked thereon.

Figure 1 is a perspective view. Fig. 2 is a sectional view.

I will describe the construction and operation of my invention, in order that those  
15 skilled in the art may be enabled to make and use it.

In constructing my invention, I cast the wheel A and turn it off as the finish may require, cutting the teeth as seen in Fig. 1.  
20 The pawl B is also made of cast iron. On the lower end where it is attached to the shaft it is slotted out so that it fits down on the shaft, allowing the shaft to revolve in it.

Where the pawl fits onto the wheel there is  
25 a catch that fits into the teeth of the wheel A for the purpose of operating it. The projection D attached to the pawl acts as a lever which may be extended if required to attach to the lever which puts the wheel A and  
30 pawl B in motion. The shaft C is made of wrought iron.

In operating my invention it will be seen that as motion is applied to the lever end of pawl B, it is made to operate in teeth *a* of wheel A, and cause it to revolve, either by  
35 pushing it forward, or pulling it in the reverse direction, either of which forms of motion I may use, as my invention can be applied in either way.

By this device I am enabled to get up  
40 for practical use a very cheap and easily adjusted feed motion, the whole being made of cast iron or other metal, and when turned and filed up is easily adjusted, as I have only to set the pawl down on the shaft C and it  
45 fits at once into the teeth *a*, when it is ready to operate.

Having thus fully described the construction and operation of my invention, what I claim as new, and desire to secure by Letters  
50 Patent, is—

The pawl B and lever D combined, being composed of one piece of metal operating substantially as described, and for the purposes set forth of giving feed or other mo-  
55 tion.

E. P. RUSSELL.

Witnesses:

T. G. CLAYTON,  
CHAS. B. BURCH.