

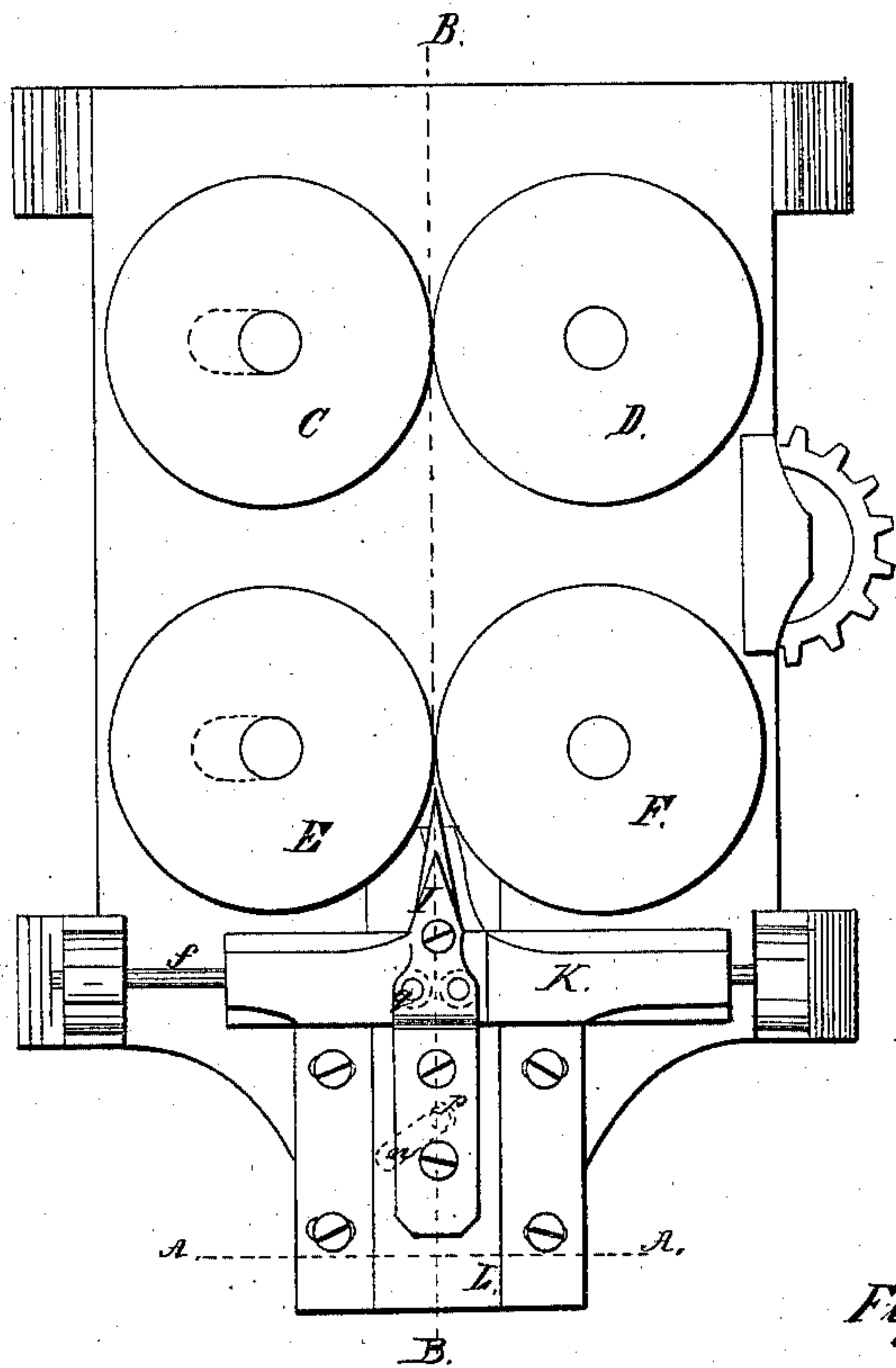
*J. H. S. Sawyer,*

*Making Hoops.*

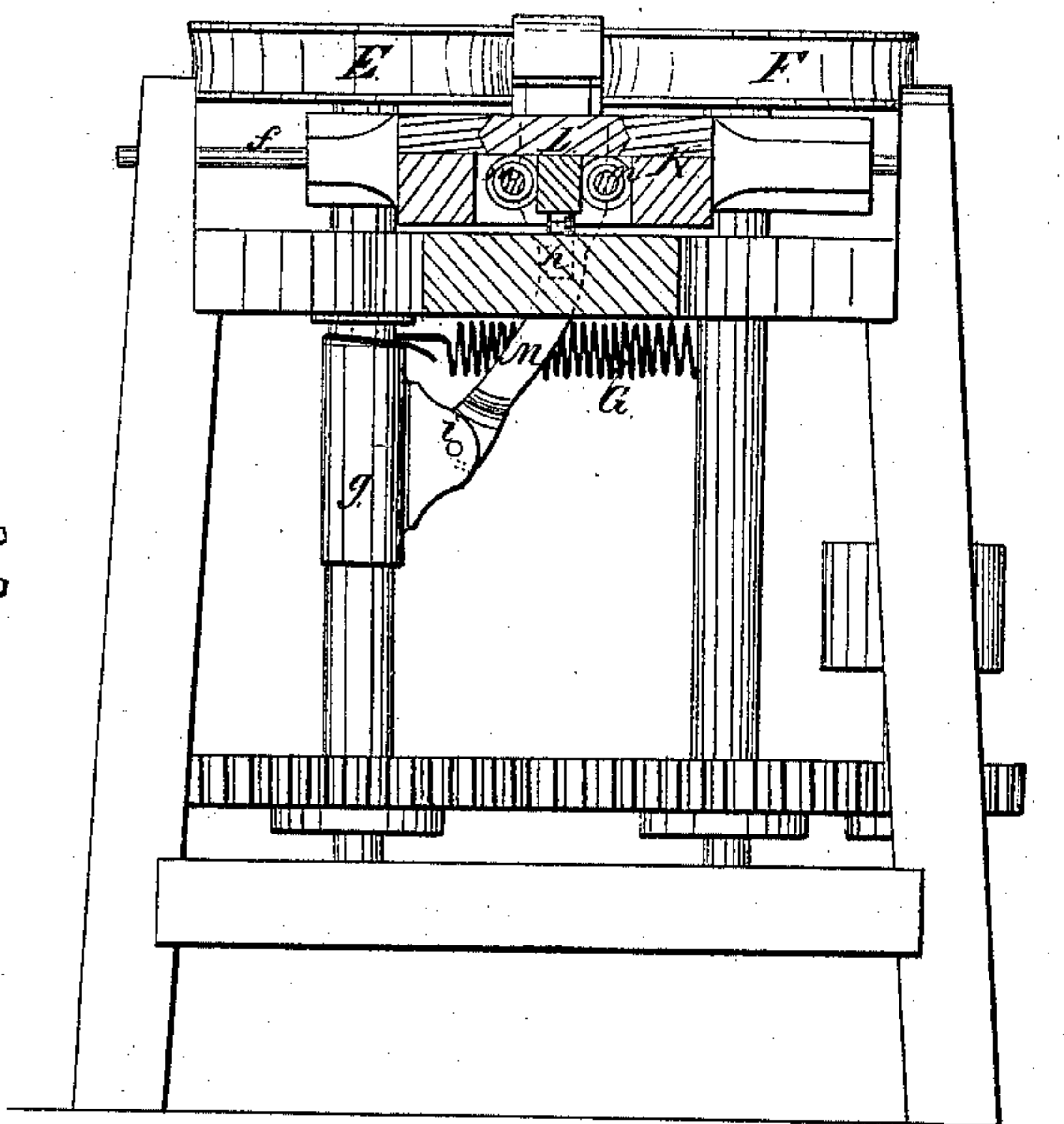
*N<sup>o</sup> 17.014.*

*Patented Apr. 7, 1857.*

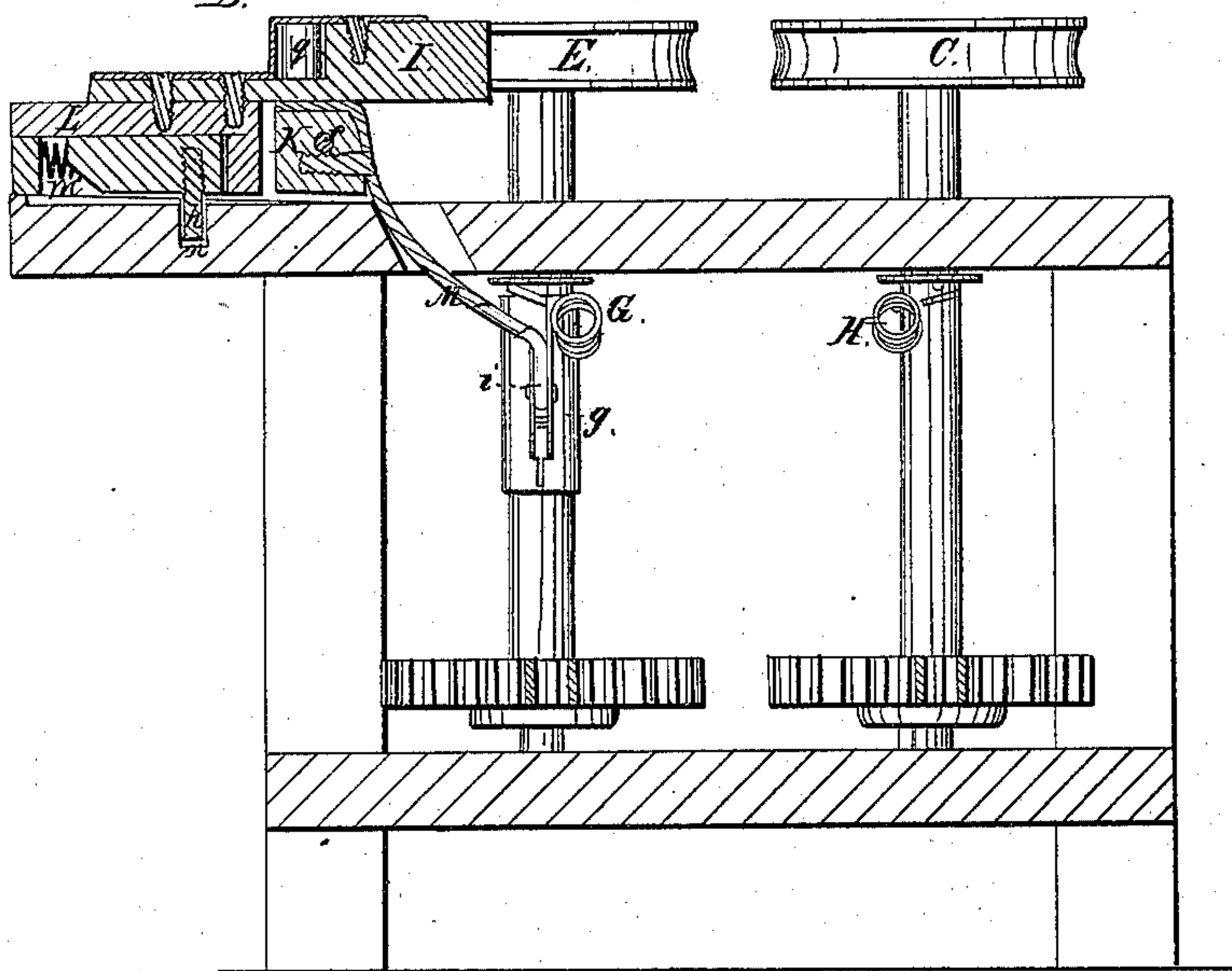
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*





# UNITED STATES PATENT OFFICE.

JOSEPH SAWYER AND SYLVESTER SAWYER, OF FITCHBURG, MASSACHUSETTS, ASSIGNORS  
TO THE AMERICAN HOOP MACHINE COMPANY.

## MACHINE FOR SPLITTING HOOP-POLES.

Specification of Letters Patent No. 17,014, dated April 7, 1857.

*To all whom it may concern:*

Be it known that we, JOSEPH SAWYER and SYLVESTER SAWYER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented certain Improvements in Machines for Splitting Hoops, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

10 Figure 1 is a plan; Fig. 2, a vertical section upon the line A, A, of Fig. 1; Fig. 3, a vertical section upon the line B, B, of Fig. 1.

In hoop splitting machines of this description, it is essential to the proper operation of the machine that the splitting knife be placed as near to the feed rolls as may be, and leave a sufficient space upon each side of the knife for the passage of the two halves of the pole. It is evident however that as the size of the poles varies a greater or less space will be required between the knife and the feed rolls.

To accommodate this space to the size of the pole being split, is the object of our present improvement, which consists in so connecting the knife with the last pair of feed rolls, that in proportion as the latter are forced apart by the increasing size of the pole, the knife shall be drawn back to afford a greater space for the passage of the two halves of the pole; whereby we are enabled at all times to keep the knife at the least practicable distance from the rolls whatever may be the size of the poles being operated upon.

35 In the accompanying drawings C, D, E and F, are the feed rolls, D, and F, running in the stationary boxes and C, and E, being allowed a sufficient motion to and from the rolls D, and F, to permit the passage of the poles, the opposite rolls of each set being drawn together by springs G, and H.

45 The splitting knife I, is attached to a block L, which slides to and from the feed rolls in the carriage K. This carriage is hung upon the rod *f*, upon which it is moved as the roll E, is forced away from its mate F, in the following manner: M, is an arm which is attached to the sliding carriage K, and is pivoted at *i*, to a sleeve *g*, surrounding the shaft of the roll E. The point *i*, is midway between the center of the roll E, and its lower bearing, and thus as the roll E, is forced away from its mate F, the carriage K, and the knife will be moved in the same direction one half the distance traversed by the roll, by which means the knife

is kept in the center of the opening between the rolls.

It now remains to show the manner in which the knife is caused to move back from the rolls in proportion as the distance between the rolls increases.

*n*, (seen dotted in Fig. 1 and in section in Fig. 3) is a slot or groove in the frame of the machine which is inclined at an angle of about 45°, to the axis of the knife. Into this slot or groove slides the pin *h* which projects down from the block L, and thus as the knife is moved sidewise by the motion of the roll E, it is at the same time drawn back by the pin *h*, and slot *n*, the block L sliding freely in the carriage K, as seen in Fig. 2. To insure the return of the block L, and the knife as the rolls are again allowed to approach each other, the springs *m*, force the block forward and thus keep the pin *h*, out of contact with the rear wall of the slot.

By means of the arm M, attached to the knife carriage K, and pivoted to the center of the shaft of the movable feed roll, the knife is moved laterally an amount equal to half the distance moved by the feed roll, and this is accomplished without the use of the cog wheels or rack bars heretofore employed for the purpose. This forms the second part of our invention.

The third part of our invention consists in a means of diminishing the friction of the two halves of the pole against the sides of the knife and this we effect by means of the friction rolls *q*, in the knife shank which prevent the hoops from bearing against the knife stock and obviate the friction heretofore occasioned thereby.

What we claim as our invention and desire to secure by Letters Patent, is—

1. Moving the knife back from the rolls in proportion as the latter are separated from each other, in the manner and for the purpose substantially as herein set forth.

2. We claim connecting the knife with the center of the shaft of the movable feed roll, by means of the arm M, as set forth for the purpose specified.

3. We claim the friction rolls *q*, in the knife stock operating in the manner described for the purpose specified.

JOSEPH SAWYER.  
SYLVESTER SAWYER.

Signed in presence of—

J. W. MAUSUR,  
C. E. DADMON.