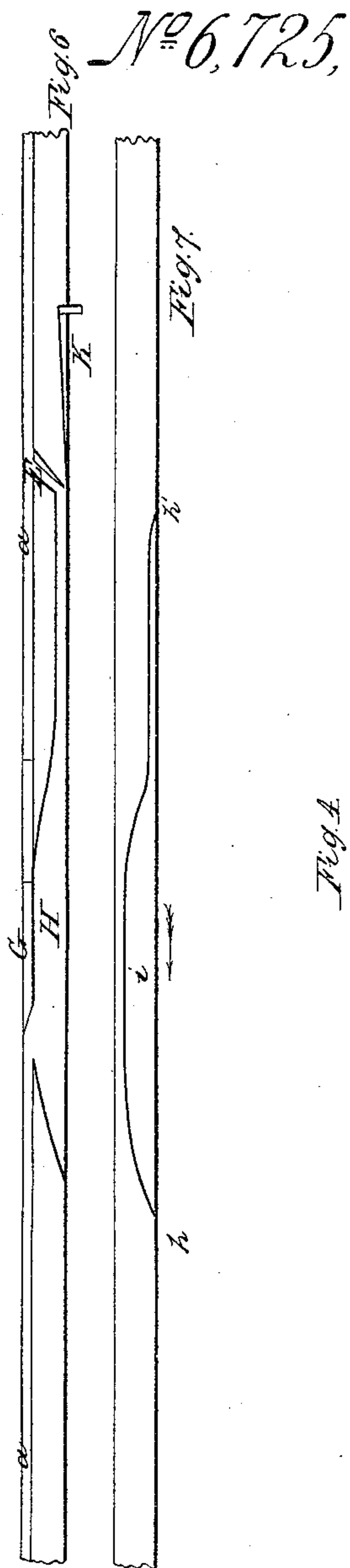


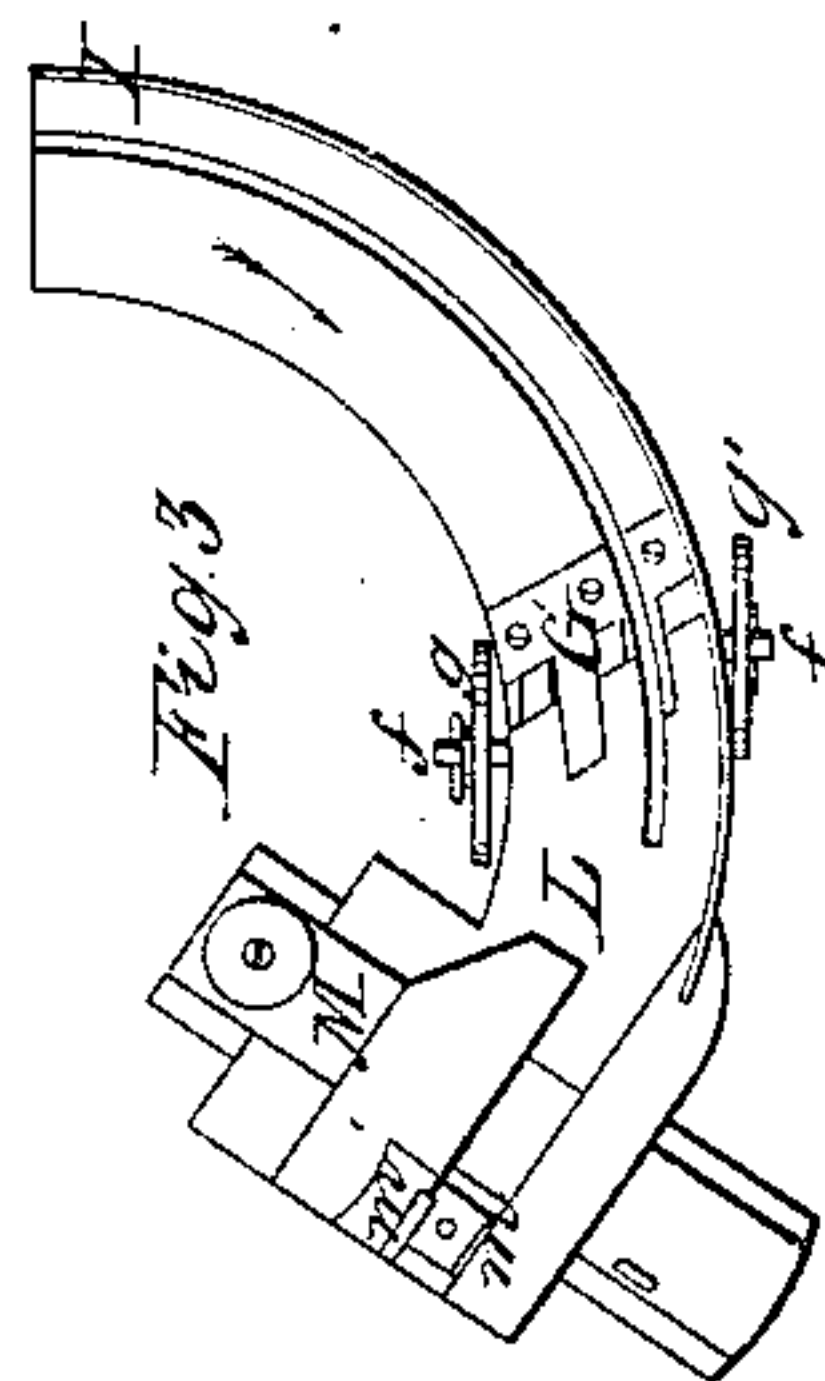
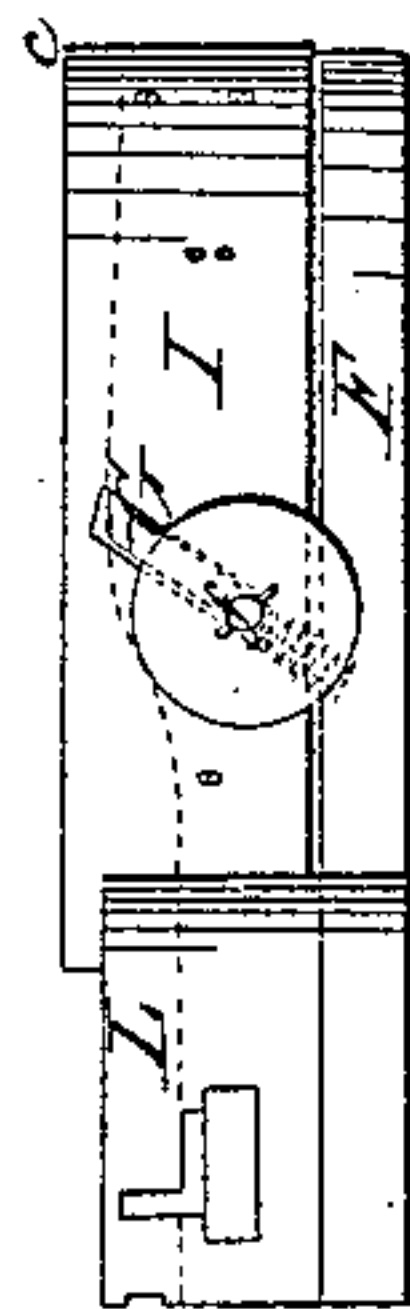
*E. R. Morrison,*

*Cutting Shingles,*

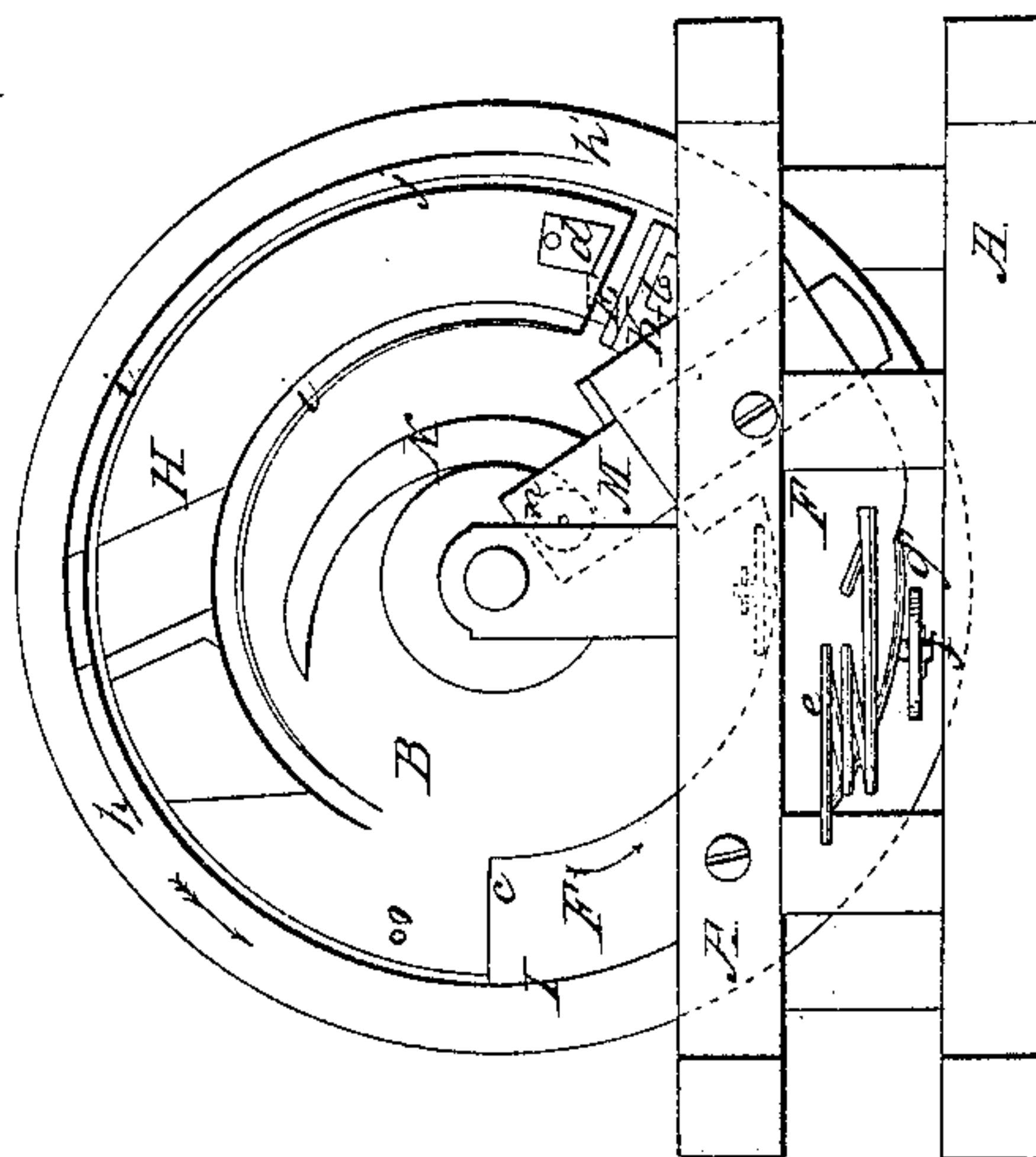
*Patented Sep. 18, 1849.*



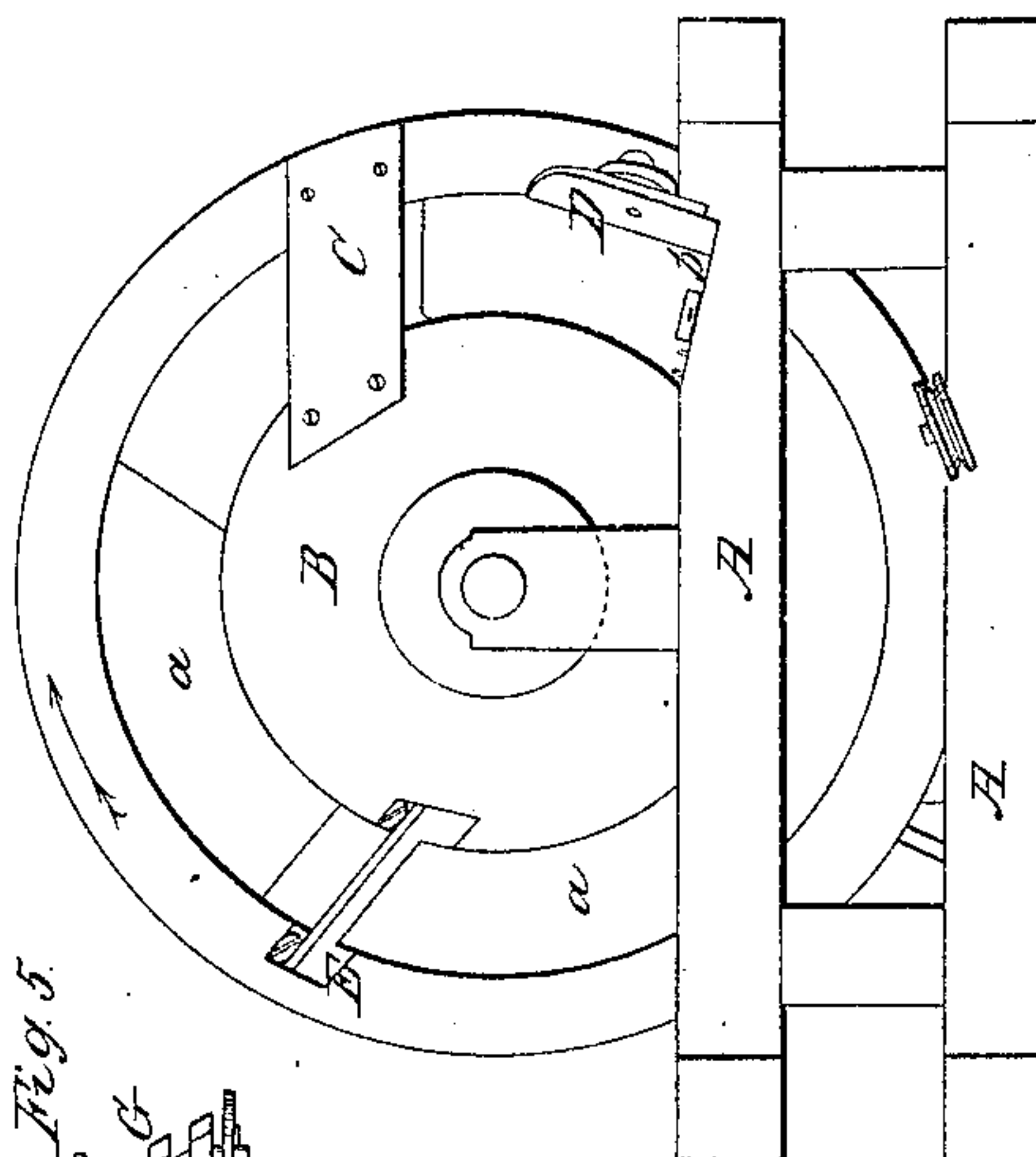
*Fig. 4*



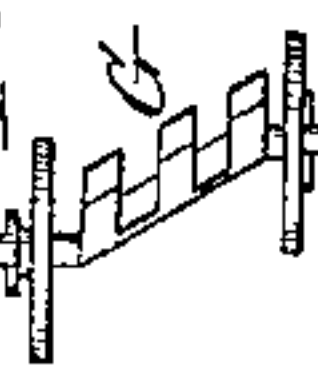
*Fig. 2*



*Fig. 1*



*Fig. 5*





# UNITED STATES PATENT OFFICE.

E. R. MORRISON, OF ANGELICA, NEW YORK.

## MACHINERY FOR RIVING AND DRESSING SHINGLES.

Specification of Letters Patent No. 6,725, dated September 18, 1849.

*To all whom it may concern:*

Be it known that I, ENOCH R. MORRISON, of Angelica, in the county of Allegany and State of New York, have invented certain  
5 new and useful Improvements in Shingle-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, in which—

10 Figure 1 is a face view of my machine. Fig. 2 is a back view of the same. Fig. 3 is a face view of the block against which the shingle is supported, while being shaved, and in a recess of which it is joint-  
15 ed. Fig. 4 is a view of the bottom of this block. Fig. 5 a view of the movable forked stop for holding the shingle during the shaving, and Figs. 6 and 7 sections of the revolving wheel projected on a plane surface  
20 showing the various grooves.

The nature of my invention consists in the application of a single revolving wheel furnished with knives by which the shingle is riven and shaved, to a stationary block or  
25 case in which it is shaved and jointed; the various operations performed by the revolution of the wheel, being first riving the bolt, second shaving and tapering the face of the shingle, and third jointing its edges.

30 The operation of the machine is as follows: The bolt is pressed in a groove in the front face of a revolving wheel, and receives the blow of a riving knife; this knife cuts off a slab of equal thickness through-  
35 out its whole extent, leaving the face of the bolt smooth and even to form one of the faces of the succeeding shingle. The slab passes through the wheel and is received in a recess formed by a groove in the hind face  
40 of the wheel, and the face of a stationary block behind the wheel. The face of this block is so inclined with respect to the face of the wheel that the space between the two shall be exactly of the same tapering shape  
45 as the shingle intended to be made. In this position the further progress of the slab is prevented by its end coming in contact with a movable stop projecting through the stationary block. As the wheel continues to  
50 revolve, the slab is pressed firmly against the inclined face of the stationary block by a spring on the wheel; the shaving knife follows, and acting on the face of the slab nearest the wheel, shaves off all that portion  
55 which by the position of the slab on the inclined face of the block projects within the

plane of the shaving knife's motion. The stop is now forced from the face of the cutter wheel by the action of friction wheels attached to its edges and running in inclined grooves in the face of the wheel, and the liberated shaved slab is pushed forward  
60 by a pin following the shaving knife until by the action of a spring on the face of the wheel between this knife and the pin it is forced into a deep recess in the stationary  
65 block at the extremity of which the jointing knives are situated. In this recess it remains stationary until the stock of the upper jointing knife which has been raised by  
70 a cam attached to the face of the wheel is allowed to descend upon the upper edge of the shaved slab, when a second pin attached to the face of the wheel coming in contact with the end of the shingle propels it be-  
75 tween the jointing knives and expels it a finished shingle, from the machine.

In the drawing A is a strong frame to which the other portions of the machine are  
80 attached.

B is the revolving wheel, in the opposite faces of which are sunk various annular grooves or recesses, and to which are attached the riving and shaving knives. The  
85 recess *a* in the front face of the wheel is of sufficient width to admit the widest bolt on which the machine is to act, and of sufficient depth to receive the heaviest shingle required to be made. To the front face is  
90 attached the riving knife C extending across the recess *a* and having its outer face and cutting edge flush with the face of the wheel B. In the frame of the machine a recess *b* is cut corresponding with the groove or re-  
95 cess *a* of the wheel to receive the lower end of the bolt. At the edge of this recess farthest from the axis of the wheel a support D is secured to the frame A, against which the bolt is held and by which it is supported in a proper position to receive the  
100 blow of the riving knife.

The floor of the recess on which the lower end of the bolt rests is armed with teeth to prevent the bolt from slipping during the  
105 action of the knife, and with a spring to raise the bolt from the teeth after the riving of each shingle to allow of its surface being again pressed against the revolving wheel. To the back of the wheel is secured the shaving knife E having the same general form as  
110 an ordinary plane iron, its cutting edge being flush with the face of the wheel. This



knife follows the riving knife, and is at a sufficient distance from it to allow the riven slab to pass through the wheel and be caught by the stop G before the shaving commences.

5 Behind the wheel the annular block F is secured to the frame A. The face of this block is not parallel with that of the wheel. At *c* where the slab enters between the two it is as far from the face of the wheel, and

10 consequently from the cutting edge of the shaving knife as the thickness of the butt of the shingle intended to be made, thence in the direction of the arrow its face gradually approaches that of the wheel, until at

15 the stop G it is only as far from it as the intended thickness of the point of the shingle. (The slab is pressed against the inclined face of the block F by a spring *d* attached to the wheel and preceding the

20 shaving knife. To prevent the shingle from moving with the wheel a movable stop G is let into the block F and extends across the recess. This stop is pressed toward the face of the wheel by a spring *e*, to its opposite

25 edges pins *f* are attached passing through the sides of the block; these pins serve as axes to the two friction wheels *g*, *g'*, which prevent the stop from coming in contact with the revolving wheel and serve to move

30 the stop from the wheel to allow the shaved shingle to pass on to the jointing knives; these wheels run on the face of the wheel from *h* to *h'* in the direction of the wheel's motion indicated by the arrow, thus keeping

35 the stop at a sufficient distance from the face of the wheel to allow the shaved shingle to pass it. From *h'* to *h* they are received in the grooves *i*, whose profile is given at Fig. 7, and thus allow the stop to be pressed by

40 the spring *e* into the groove H in the face of the wheel to catch the end of the slab, and prevent it from being carried forward during the shaving. A curb I is attached to the outer circumference of the block, to

45 prevent the shingle from falling through between it and the wheel and this curb is received in a groove *j*, sunk in the face of the wheel. A recess K is sunk in the wheel, immediately after the shaving knife, in

50 this the shaved slab is received after its liberation by the withdrawal of the stop. A pin *k* inserted in the wheel at the after end of this recess, striking the butt of the liberated shaved slab, pushes it forward

55 until by the action of the spring *l* in the recess K it is received into the recess L of the block in which are the jointing knives; this recess is so deep that it will receive the shaved slab and allow the pin (*k*) to pass

over its surface. At the extremity of the 60 recess are the jointing knives *m*, *m'*. The lower one *m* is fixed, the upper one *m'*, is attached to a sliding stock M which can be weighted or pressed down by a spring. The knife *m'* projects below the stock a distance 65 equal to the required thickness of the shaving to be removed from the edge of the slab; the lower end of the stock (M) behind the knife *m'* rests upon the edge of the slab to gage the depth of the shaving and the width 70 of the shingle, the upper knife is raised to allow the shaved slab to be introduced between the knives by the spiral cam N, attached to the wheel, and acting on the under side of a friction wheel *n*, attached to the 75 upper extremity of the sliding stock. A pin *o* is attached to the wheel B and follows the shaving knife. This pin projects sufficiently beyond the face of the wheel to strike the butt of the shingle in the joint- 80 ing recess, and propel it between the jointing knives, and thence out of the machine.

In the manufacture of shingles by power the riving, shaving, and jointing are performed by separate machines, some of which 85 are arranged to perform the first two operations, the last being effected in a separate machine, and others are made to perform the shaving and jointing while the separation of the shingle from the bolt is effected 90 in a distinct machine; and hence it is evident that both a loss of time must ensue, and a second handling be required to feed the second machine, whereas if a bolt be presented to my machine, the several operations of 95 riving shaving, and jointing follow each other without interruption until the shingle is delivered from the machine in a finished state. It will also be perceived that a shingle made by my machine must closely 100 resemble the best made by hand, the place of the hand riving ax is supplied by my riving knife, and the shaving and jointing knives perform their office in the same manner as the hand draw knife. 105

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

Effecting the several operations of riving the bolt and shaving and jointing shingles by a single revolving wheel, (B) made and 110 arranged substantially in the manner herein described.

In testimony whereof I have hereunto signed my name.

ENOCH R. MORRISON.

Witnesses:

E. S. RENWICK,  
P. H. WATSON.