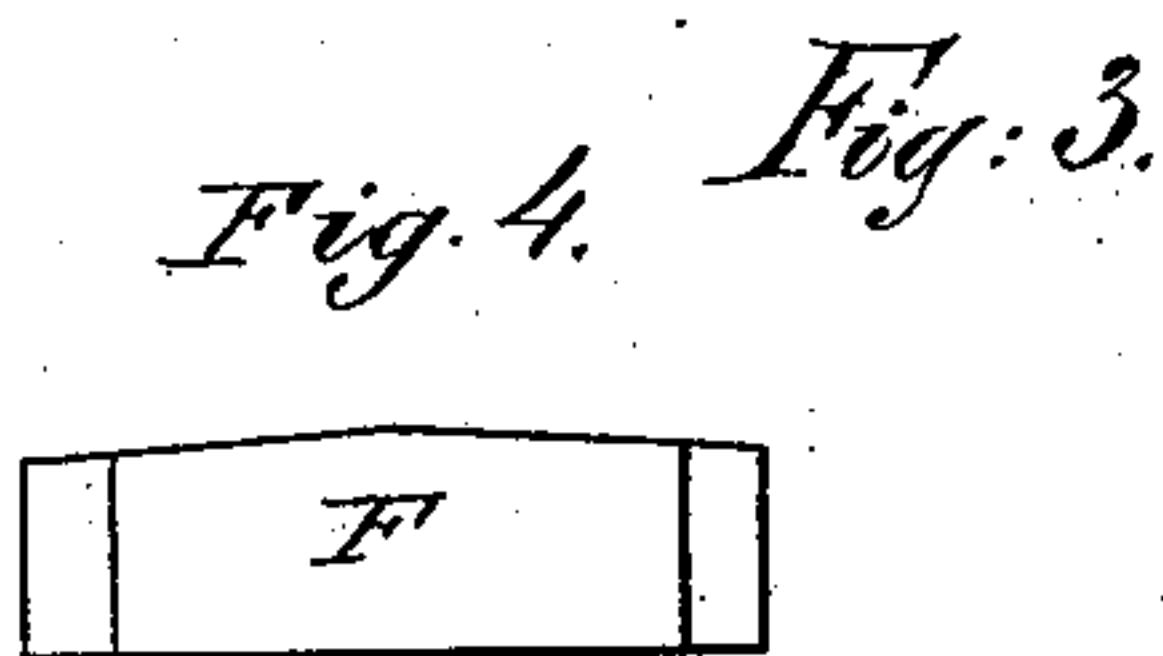
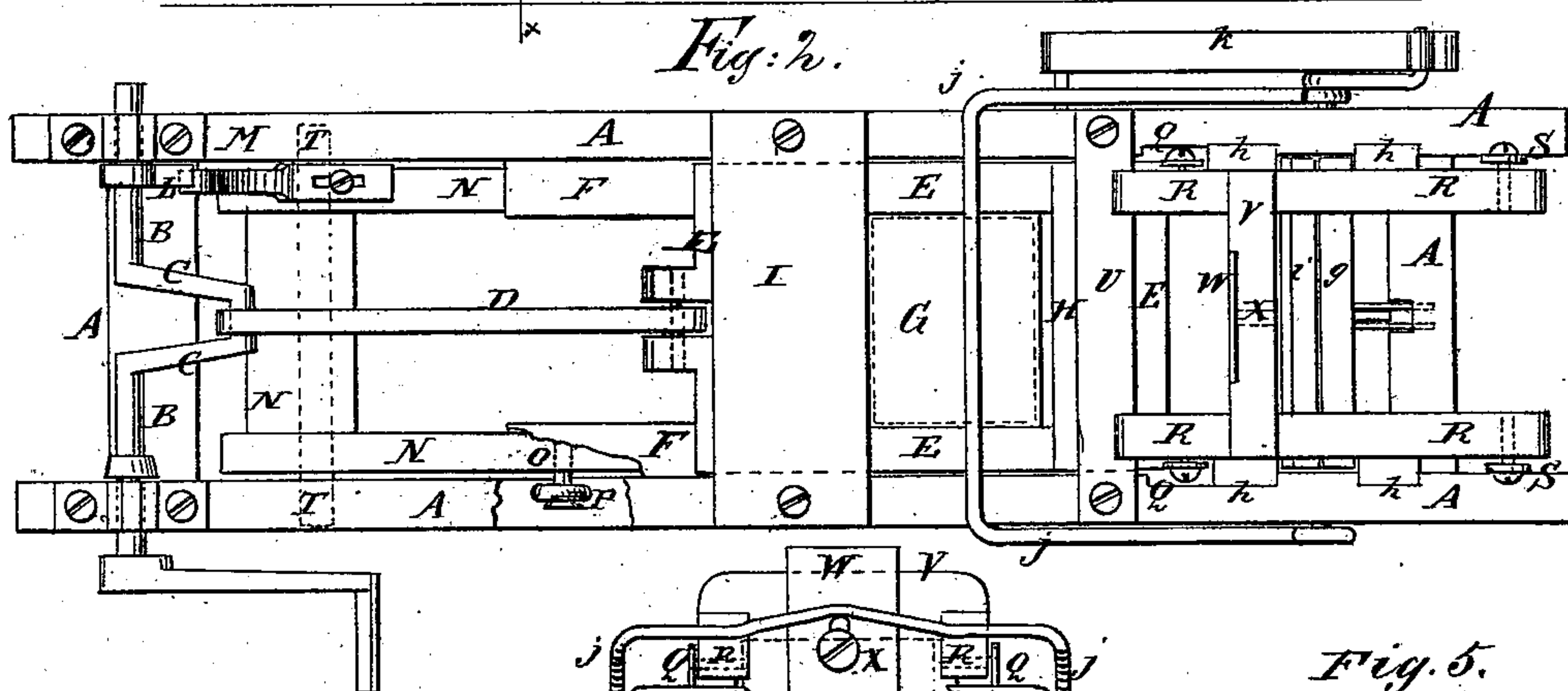
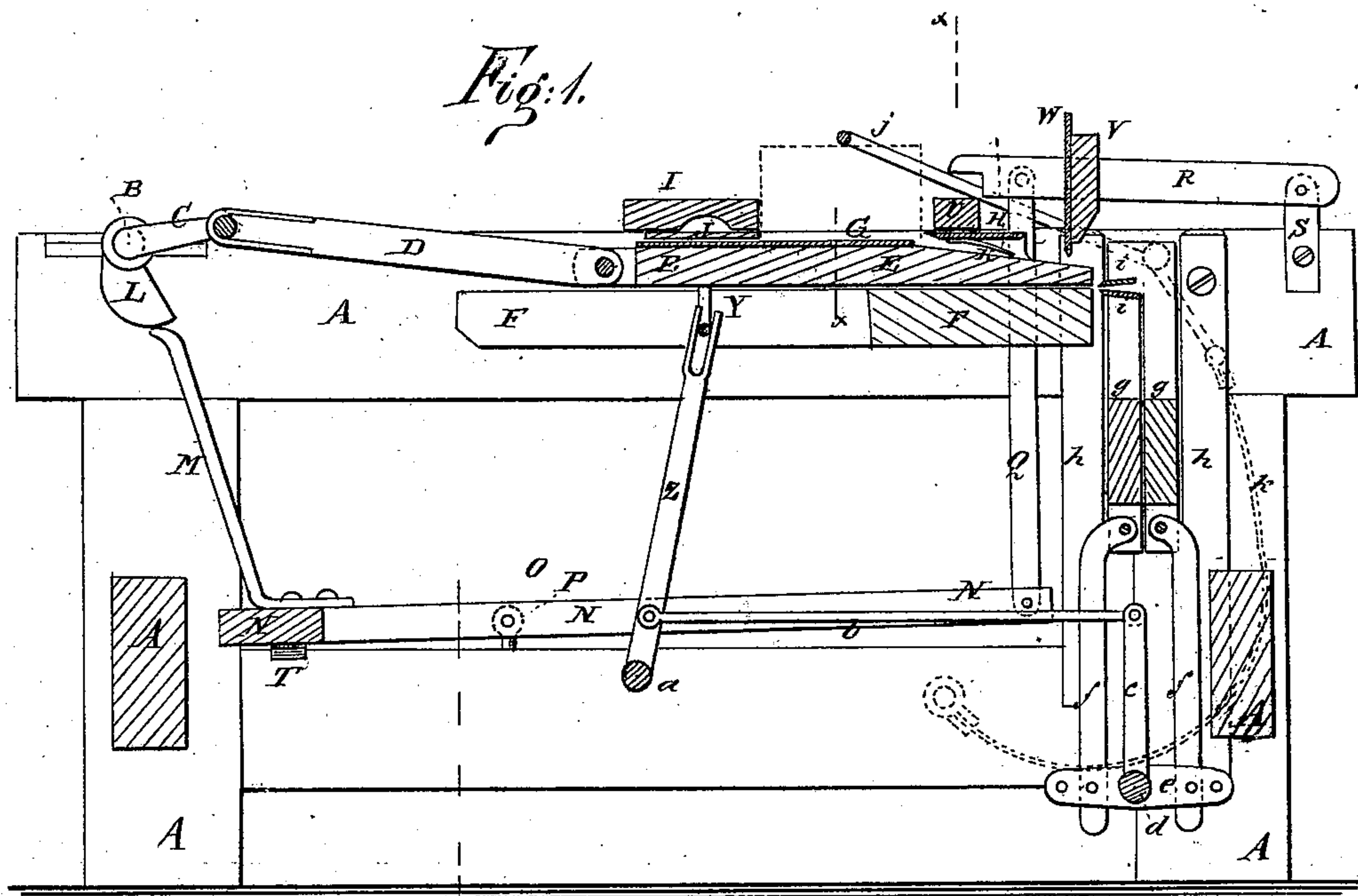


M. A. BIDWELL.  
Shingle-Machine.

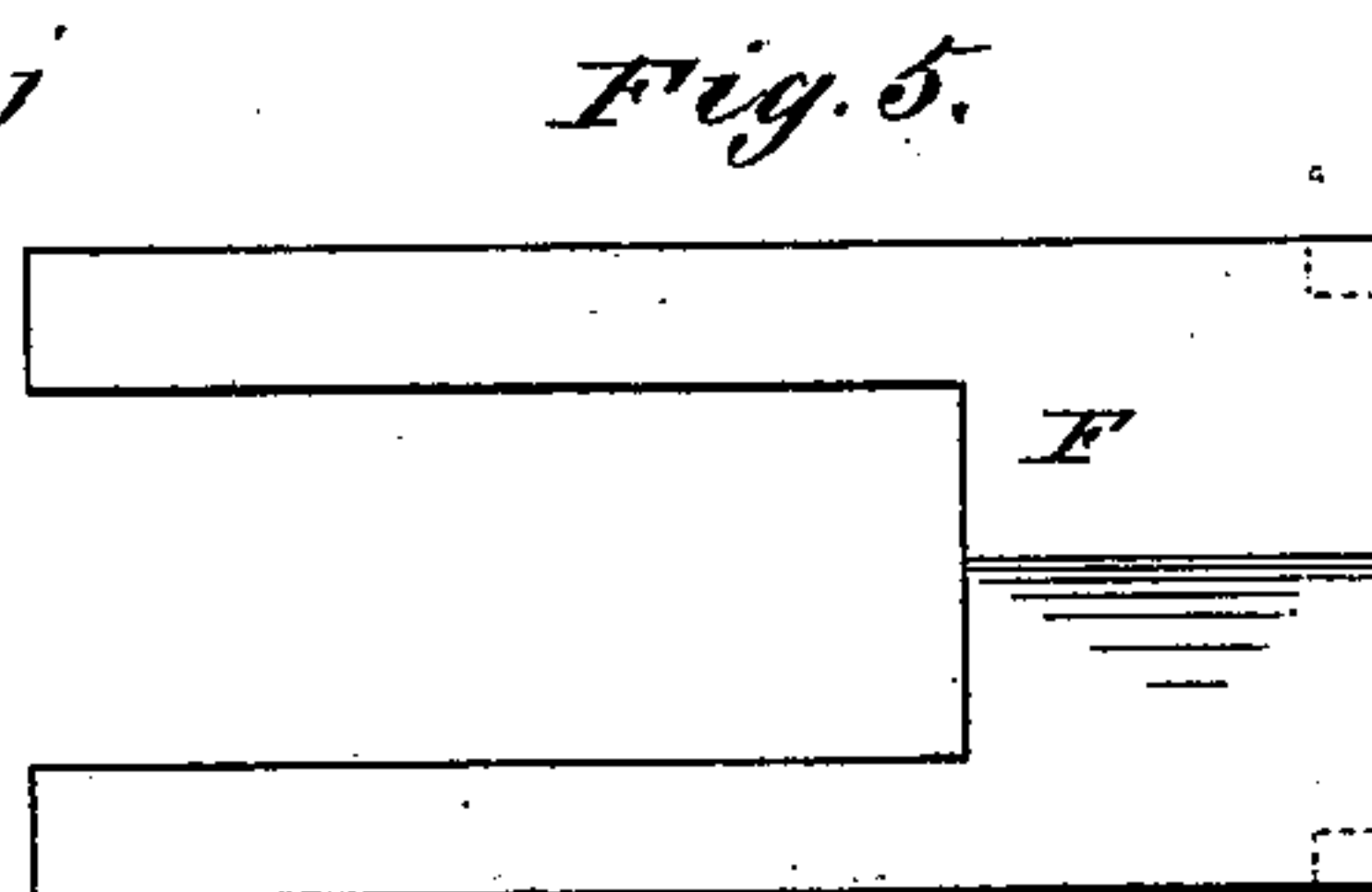
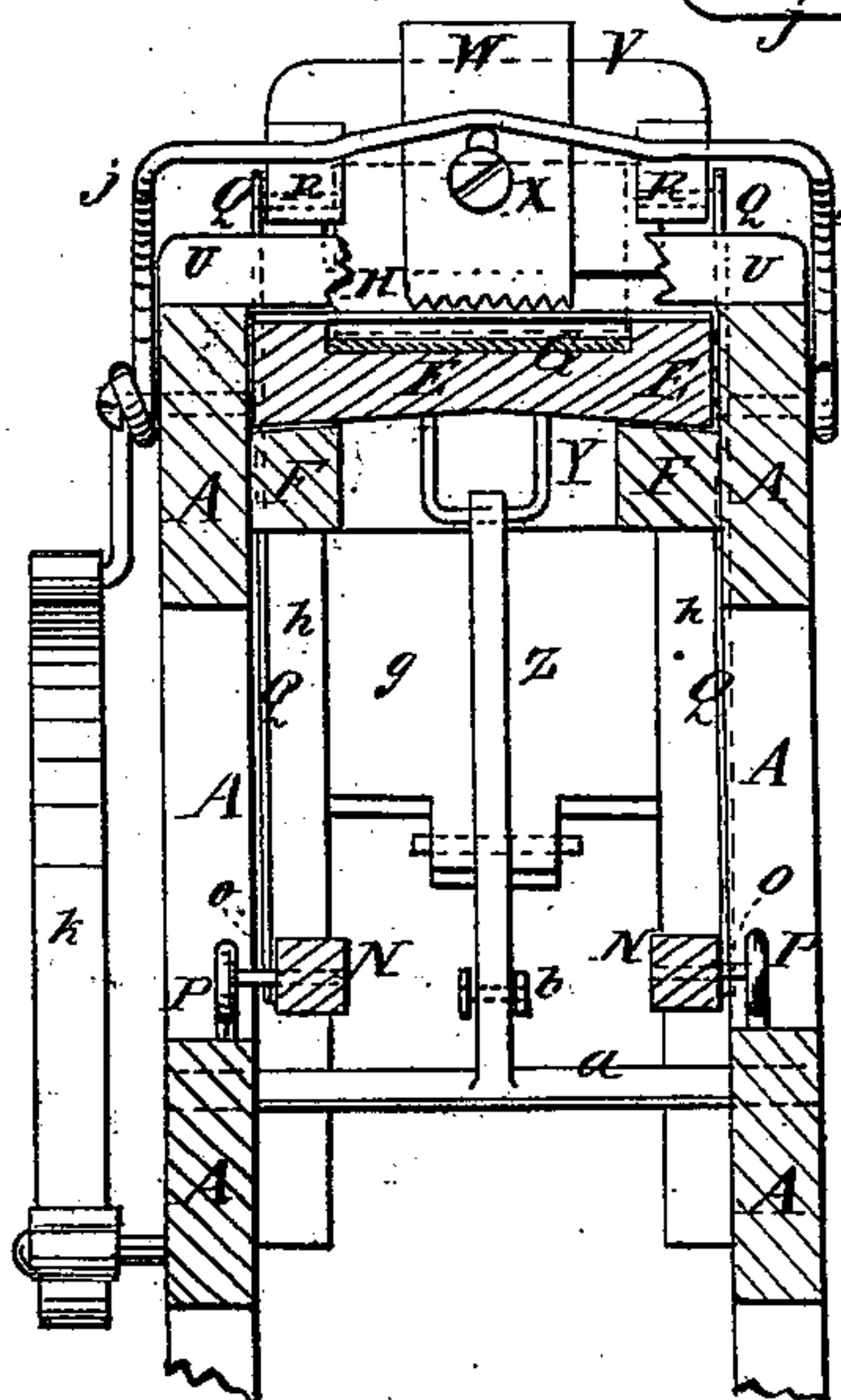
No. 226,477.

Patented April 13, 1880.



WITNESSES:

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INVENTOR:

*M. A. Bidwell*

BY

*Mum & Co*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

MARTIN A. BIDWELL, OF SACRAMENTO, KENTUCKY, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO ELISHA W. ARNOLD AND JAMES G. FOULKS, OF SAME PLACE.

## SHINGLE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 226,477, dated April 13, 1880.

Application filed November 22, 1879.

*To all whom it may concern:*

Be it known that I, MARTIN ALONZO BIDWELL, of Sacramento, in the county of McLean and State of Kentucky, have invented a new and useful Improvement in Shingle-Machines, of which the following is a specification.

Figure 1 is a sectional side elevation of my improvement. Fig. 2 is a plan view. Fig. 3 is a sectional end elevation taken through the broken line *x x x*, Fig. 1. Fig. 4 is an end view of the bed, and Fig. 5 a plan view of the same.

This invention relates to that class of shingle-machines in which the shingles are split or rived from blocks or bolts and afterward smoothed and tapered, and has for its object to furnish machines so constructed that the shingles will be rived, smoothed, and tapered by a continuous operation.

The invention consists in combining with the frame a reciprocating frame carrying the riving-knife and a block and plate for holding the bolt and shingle against the action of the knife, and in the combination therewith of devices for moving the shingles from the riving-frame to the bed, for smoothing and tapering the shingles, and for holding the bolt down while being rived, as will be hereinafter fully described.

Similar letters of reference indicate corresponding parts.

A represents a frame of the machine, to the forward upper corners of which are attached bearings to receive the shaft B. The shaft B is driven by power applied to it by a crank, a pulley and belt, or other suitable means.

Upon the shaft B is formed a crank, C, to which is pivoted the end of a connecting-rod, D. The other end of the connecting-rod D is pivoted to the riving-frame E, which fits in between the upper parts of the side bars of the frame A and slides upon a bed-frame, F, attached to the said side bars of the frame A.

The middle part of the riving-frame E is recessed to allow the shingle-bolt to drop below the upper surface of the frame E to a depth equal to the thickness of a shingle.

The bottom of the recess in the riving-frame

E may be faced with metal, G, if desired, to prevent wear.

To the upper side of the forward part of the riving-frame E is attached the riving-knife H, by which the shingle is separated from the bolt.

To the upper sides of the side bars of the frame A is attached a cross-bar, I, against which the bolt rests while being rived. To the lower side of the cross-bar I is attached a plate, J, the forward edge of which is flush with the forward edge of the cross-bar I, so that the end of the shingle being separated from the bolt may rest against the forward edge of the said plate J. The plate J is secured near its rear edge to the cross-bar I, and a narrow space is left between its forward part and the cross-bar I to receive the edge of the riving-knife H, so that the shingle may be entirely separated from the bolt by the said knife H, and pushed forward between the knife H and the frame E. By this arrangement the shingle, when drawn from the frame E by the plate W, hereinafter described, will be sure to clear the end of the said frame E and rest upon the bed F.

The middle part of the lower side of the cross-bar I is recessed to form a space through which any shavings or splinters that may be pushed in by the edge of the knife H may escape.

To the lower side of the riving-knife H is attached a small spring, K, to rest upon the shingle and hold it while the riving-frame E and knife H are being pushed forward.

The upper side of the forward end of the riving-frame E is beveled to allow the shingle to pass out more readily.

To the shaft B, near one end, is attached a cam, L, which at each revolution of the said shaft B strikes the upper end of the arm M and pushes the said arm M downward. The lower end of the arm M is bent forward, and is slotted to receive the bolt by which it is secured to the rear end of the frame N, so that the said rear end of the frame N may be pushed downward at each revolution of the shaft B.

To the side bars of the frame N, a little in



the rear of its middle part, are attached pivots O, which work in eyes or bearings P, attached to the lower side bars of the frame A.

To the forward corners of the frame N are pivoted the lower ends of two bars, Q, the upper ends of which are pivoted to the rear ends of two bars, R, so that the said bars R may be oscillated by the oscillation of the frame N.

The bars R are pivoted at their forward ends to arms or standards S, attached to the forward ends of the upper side bars of the frame A. With this construction the bars R, when the arm M is released by the cam L, are drawn down and held by their own weight, the weight of the frame N, and the action of the spring T.

The ends of the spring T rest upon the lower side bars of the frame A, and upon the arched middle part of the said spring rests the rear end of the frame N.

The rear ends of the bars R are rabbeted to receive the cross-bar U, by which their downward movement is limited, and which is attached to the upper side bars of the frame A.

To the bars R, at a little distance from their rear ends, is attached a block, V, the rear side of which is recessed to receive the metal plate W. The plate W is slotted longitudinally to receive the bolt or screw X, by which it is secured to the block V, so that the said plate may be adjusted as may be required. The lower edge of the plate W is serrated, so that it may take hold of the shingle and prevent it from being carried back by the riving-frame E in its rearward movement.

As the riving-frame E moves back the shingle drops upon the forward part of the bed F, so as to be pushed forward by the riving-frame E in its next advance.

To the lower side of the rear part of the riving-frame E is attached a staple, Y, to receive the slotted upper end of the lever Z, the lower end of which is attached to or formed upon a shaft, a, which rocks in bearings in the lower side bars of the frame A.

To the lever Z, a little above the shaft a, is pivoted the slotted or forked rear end of the connecting-rod b, the forward end of which is pivoted to the upper end of an arm, c. The lower end of the arm c is formed upon or rigidly attached to the shaft d or cross-head e.

The shaft d works in bearings in the lower part of the frame A, and to the said shaft is rigidly attached a cross-head, e, to the ends of which are pivoted the lower ends of two connecting-bars, f. The upper ends of the bars f are bent inward, and are pivoted to the lower parts of two sashes or frames, g, which are placed close together, and slide up and down between the cleats h, attached to the frame A.

To the upper end of the rear frame g, and to projecting arms attached to or formed upon the rear side of the upper end of the forward frame g, are attached knives i, one above the

other and converging toward their cutting edges, as shown in Fig. 1.

The frames g and knives i are so arranged that when the knives i are close together, or nearly so, the cutting-edge of the lower knife i will be about upon a level with the upper surface of the bed F. With this construction, when the riving-frame E begins to move forward, the knives i are gradually brought closer together, so as to shave the shingle to a gradual taper as the said shingle is pushed forward between the knives i by the advance of the said riving-frame.

As the riving-frame E moves rearward, the knives i separate and allow the completed shingles to drop out.

The upper surface of the forward part of the bed F is made highest along the central line, and inclines slightly toward each side, so that the ends of shingles rived from twisted or winding bolts may enter squarely between the knives i, so as to be shaved more upon the alternate parts of their sides and thus made straight.

The bolt is held in place while being operated upon by the bail j, the arms of which are pivoted to the opposite sides of the forward part of the frame A. One or both the ends of the bail j are extended, and are connected with a spring, k, also attached to the frame A, and so arranged as to press the middle part or bend of the bail j down upon the bolt to hold the said bolt in place, and prevent it from jumping while being operated upon.

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

1. In a shingle-machine, the combination of the horizontally-reciprocating riving-frame E, having its middle part recessed and its forward end beveled and provided with the riving-knife H, and the cross-bar I, provided with the stop-plate J, secured to it so as to receive the riving-knife between it and the said bar, with the frame A, the bed F, and the driving-shaft B, substantially as described.

2. In a shingle-machine, the bed F, having its upper surface inclined from the center toward each side, in combination with the reciprocating frame E and the knives i, substantially as and for the purpose set forth.

3. In a shingle-machine, the combination, with the riving-frame E and the bed F, of the pivoted bars R, the holding-block V, the toothed plate W, and the driving mechanism L M N Q, substantially as herein shown and described, for moving the shingle from the riving-frame E to the bed F, as set forth.

4. In a shingle-machine, the combination, with the riving-frame E and the bed F, of the parallel knives i, the sashes g, and their driving mechanism f c e b z, substantially as herein shown and described, for smoothing and tapering the shingle, as set forth.

5. In a shingle-machine, the combination of



the arm M, frame N, spring T, connecting-bars Q, and hinged bars R, supporting the serrated plate W, with the driving-shaft B, provided with the cam L, substantially as and  
5 for the purpose set forth.

6. In a shingle-machine, the combination of the rock-shaft *a*, lever *z*, connecting-rod *b*, shaft *d*, cross-head *e*, arm *e*, bars *f*, and sashes

*g*, carrying the shaving-knives *i i*, with the reciprocating riving-frame E, substantially as  
and for the purpose set forth.

MARTIN ALONZO BIDWELL.

Witnesses:

G. R. HENRY,  
L. M. ARNOLD.