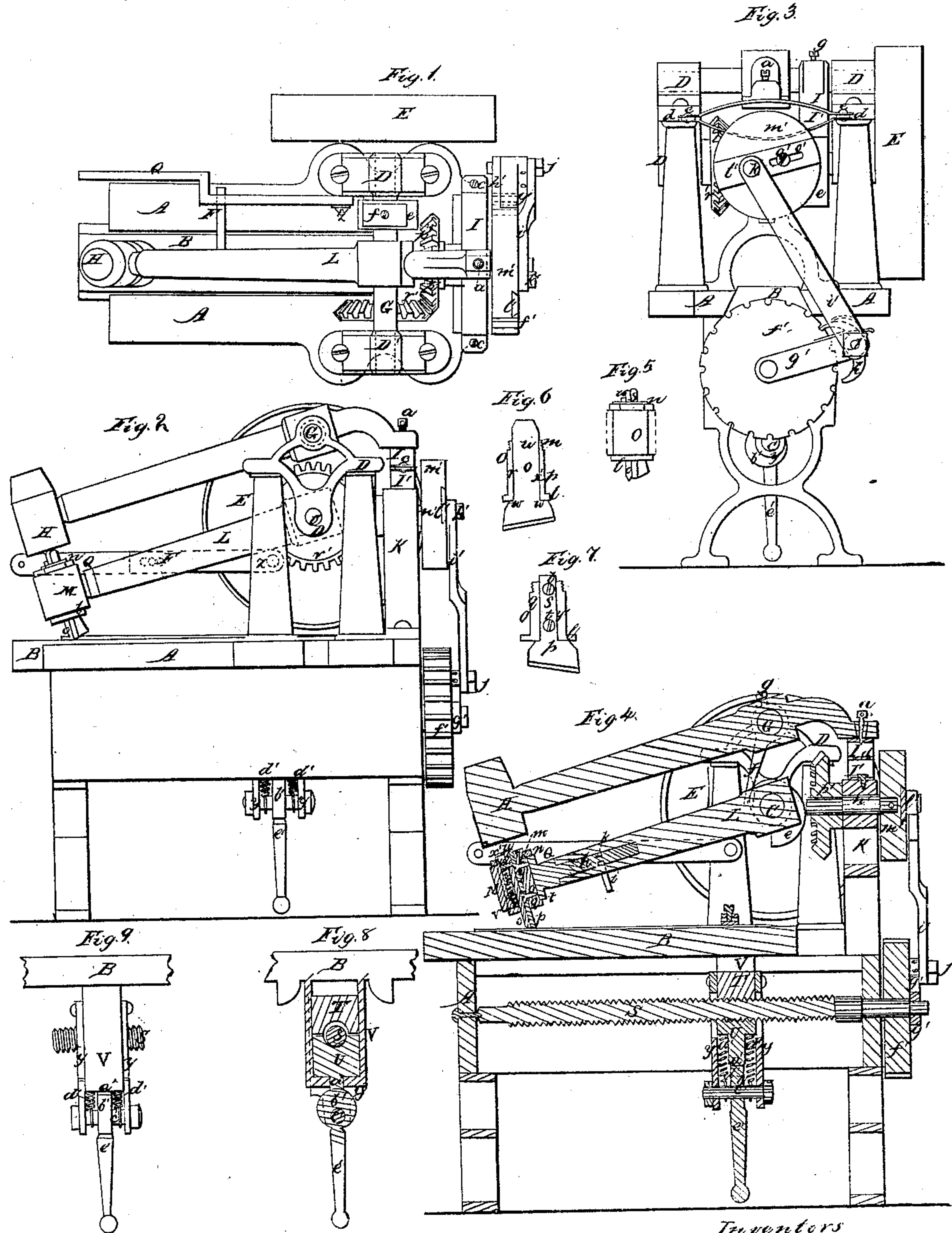


*Johnson & Griffin,*  
*File-Cutting Machine,*  
*N<sup>o</sup> 61,341.*      *Patented Jan. 22, 1867.*



*Witnesses*  
*George Andrews*  
*Samuel A. P. P.*

*Inventors*  
*A. F. Johnson and M. P. Griffin*  
*by their attorney,*  
*N. H. Hedy*



# United States Patent Office.

ALBERT F. JOHNSON, OF BOSTON, AND MOSES P. GRIFFIN, OF MEDFORD,  
MASSACHUSETTS.

*Letters Patent No. 61,341, dated January 22, 1867.*

## IMPROVEMENT IN FILE-CUTTING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS MAY COME:

Be it known that we, ALBERT F. JOHNSON, of Boston, and MOSES P. GRIFFIN, of Medford, in the State of Massachusetts, have invented certain new and useful improvements in Machines for Cutting Files, of which the following specifications, taken in connection with the accompanying drawing, form a full and exact description. Of the drawings—

Figure 1 is a top view.

Figure 2, a side elevation.

Figure 3, a rear end elevation.

Figure 4, a vertical and longitudinal section.

A represents the bed frame of the machine. B a file blank carriage arranged within and supported by the bed frame, so as to be moved to and fro longitudinally therein. C is the driving-shaft, supported in standards D D, erected on the bed frame and driven by the fast pulley E applied to it. G is a rock-shaft over the driving-shaft, and held in bearings sustained by the standards D D. This rock-shaft carries a hammer, H, the handle or shank of which projects to the rear of the rock-shaft, such projection being provided with a screw, *a*, passing through it, with or without a set-nut. The lower end of this screw rests on the crown of one of two bow springs, I I', which, being arranged as in fig. 3, are connected together at their ends by means of screws, *c c*, which pass through them and blocks, *d d*, of rubber placed between the ends of the springs. The lower spring is supported upon the top of a standard, K, erected on the bed frame. *e* is a cam or wiper fixed upon the driving-shaft. *f* is an arm extending down from the rock-shaft, and fixed in position by the clamp-screw *g*. The revolution of the driving-shaft brings the wiper against the arm and raises the hammer. The springs throw the hammer down after each elevation. L is a tool-holding arm, turning freely in a vertical plane on the driving-shaft, and extending along underneath the hammer, as represented in figs. 1, 2, 4. This arm carries a swivelled head, M, having a cylindrical shank, *h*, extending longitudinally from it into the arm, socketed axially for the purpose. This shank is held in the arm by a screw, *i*, which passes into the arm and into a groove, *k*, made in and around the shank. By this arrangement the head M is free to turn in a plane perpendicular to the axis of the arm L. Within the swivel head is a revolving cylinder or chisel stock, O, passing through the cylindrically hollowed head, and held therein by a flange, *l*, at the bottom and the screw-nut *n* at the top, as in Figure 5. *o* is a chisel, and *p* an adjuster, the shanks of which pass through the stock in juxtaposition. For applying these the stock is made in two separate segments, with a recess in each, *x' y'*, for receiving the tool it is to carry. The shank of the adjuster is placed in one of these recesses and fastened to the stock by screws, *t t*. The shank of the chisel is laid in the other recess, so as to move up and down therein. A stud, *u'*, rests on a small spring, *v*, placed within said recess between the chisel and the stock, which raises the chisel from the file blank after each blow of the hammer. The extent of elevation is determined by shoulders, *w w*, Figure 6, formed on the chisel. The adjuster *p*, of which Figure 7 is a side view, rests directly on the upper surface of the file blank, and close to the chisel. The edge of the chisel being parallel with the lower edge of the adjuster, the latter will turn the swivel head M, so as to keep the cutting edge of the chisel parallel with the surface on which the adjuster may rest. By this means the chisel will form each cut or groove of a uniform depth. By means of the rotary stock O, with its flange and screw-nut, the chisel may be adjusted to cut at any desired angle across the blank. The chisel may be fixed a little loosely in its socket, so as to have a slight motion at right angles to its edge, to secure a better cut and tooth. Q is a lever, pivoted to the frame standard at *z*, and connected with the chisel-arm by a pin, F, and slot, and is used to raise the arm for placing or removing a blank, and by hanging a weight to its outer end to put additional weight on the adjuster and press it more firmly on the file blank. In order to impart to the file carriage B an intermittent longitudinal motion, a long revolving screw, S, is supported in the bed frame underneath the carriage and grasped by two female screw-jaws, T U, arranged in a frame, V, projecting vertically downward from the carriage. The upper of these jaws is affixed to two cheek pieces, *y y*, extending downward, as shown in figs. 4, 8, 9.

Figure 8 is a transverse section; and

Figure 9, a side view.



The lower jaw also slides vertically in the frame V, and has a stud, *a'*, extending down from it and resting on an eccentric, *b'*, which is fixed to a rod or axle, *c'*, turning freely in the cheek pieces, and connected with the lower end of the frame by the springs *d' d'*. A handle, *e'*, projects from the eccentric, by moving which upward the jaws approach each other, while otherwise the weight of the lower jaw and the action of the spring will cause them to recede from each other. By these means the carriage is brought into or out of connection with the screw S, and so put in motion or otherwise. On the shaft of the screw a ratchet-wheel, *f'*, is fixed. An arm, *g'*, turning on the shaft carries a pawl, *h'*, to engage with the ratchet. A connecting-rod, *i'*, pivoted to *g'* and *h'* at *j*, leads to a crank pin, *k'*, fixed to a sliding block, *l'*, applied to a wheel, *m'*, fixed on a shaft, *n'*, arranged as represented in figs. 2 and 4. The sliding block is so applied to the wheel as to be moved diametrically across it and so vary the position of the crank pin as required. A set-screw, *q'*, passing through a slot, *o'*, in the block will fix it in position. A bevelled gear, *p'*, on the shaft *n'* engages with another such gear, *r'*, on the driving-shaft. When, therefore, the driving-shaft is rotated so is the shaft *n'*, and thus by means of the sliding block and connecting-rod, such motion will be given to the arm *g'* as will cause the pawl *h'* to impart to the ratchet and its screw, S, an intermittent rotary motion, by which the blank carriage will be fed along at intervals as required, it being at rest when a blow is struck. The length of each movement of the carriage will depend upon the position of the crank pin in the sliding block, and thus the distances between the file teeth will be regulated.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of a swivelling head with a rotary stock, substantially as described.
2. The combination of a chisel and adjuster with a rotary stock, in the manner substantially as described.
3. Placing the chisel and adjuster together in the same stock, when constructed and arranged as described.
4. The lever Q, in combination with the tool stock.
5. The adjustable screw-jaws T U, in combination with the ratchet *f*, the screw S, and bed B.
6. Inserting rubber blocks at the ends and between the bows of the elliptic springs I I' in a file-cutting machine, constructed substantially as described.

A. F. JOHNSON,  
M. P. GRIFFIN.

Witnesses:

R. H. EDDY,  
GEORGE ANDREWS.