

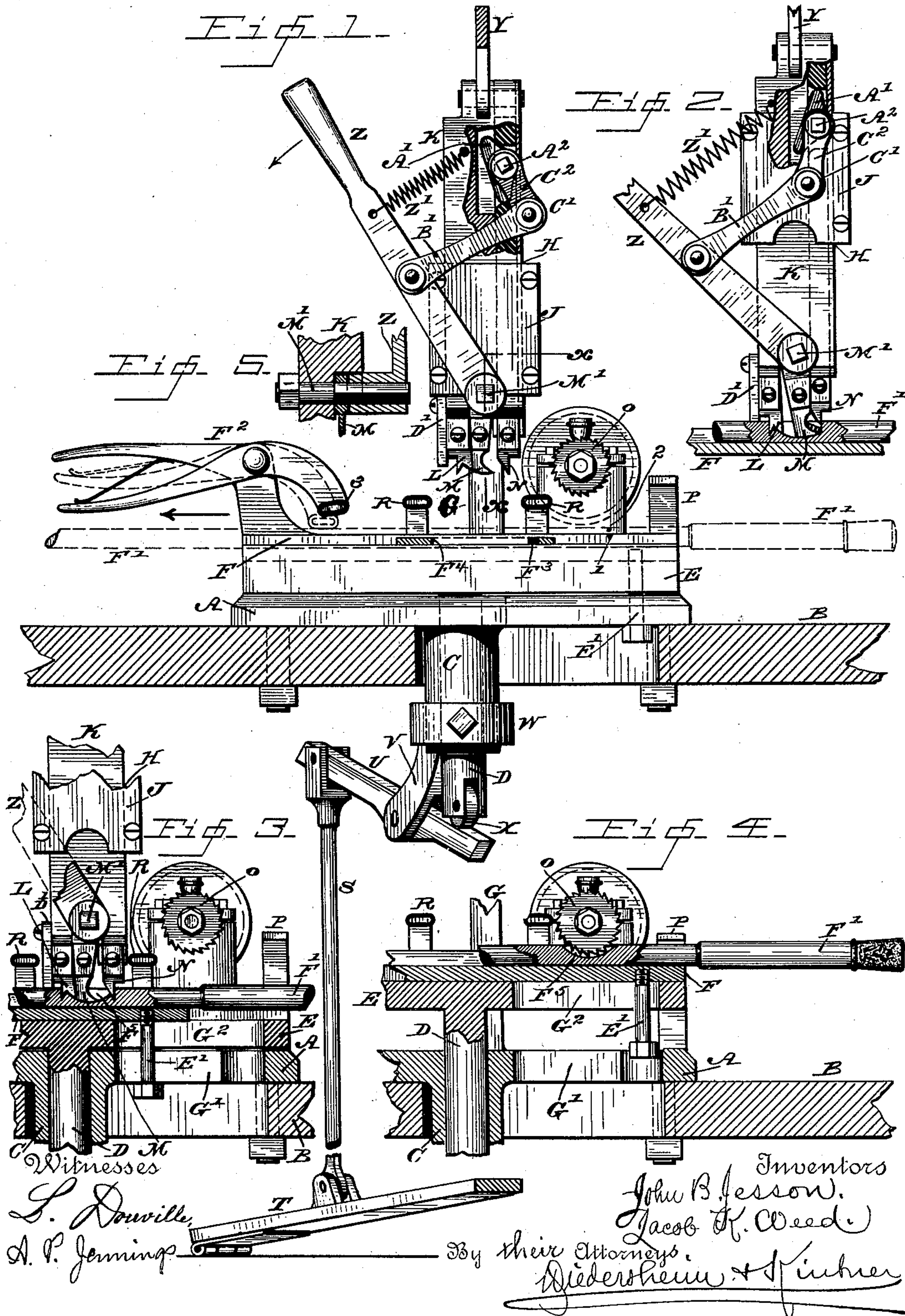
(No Model.)

2 Sheets—Sheet 1.

J. B. JESSON & J. K. WEED.
MACHINE FOR SLOTTING UMBRELLA STICKS.

No. 410,975.

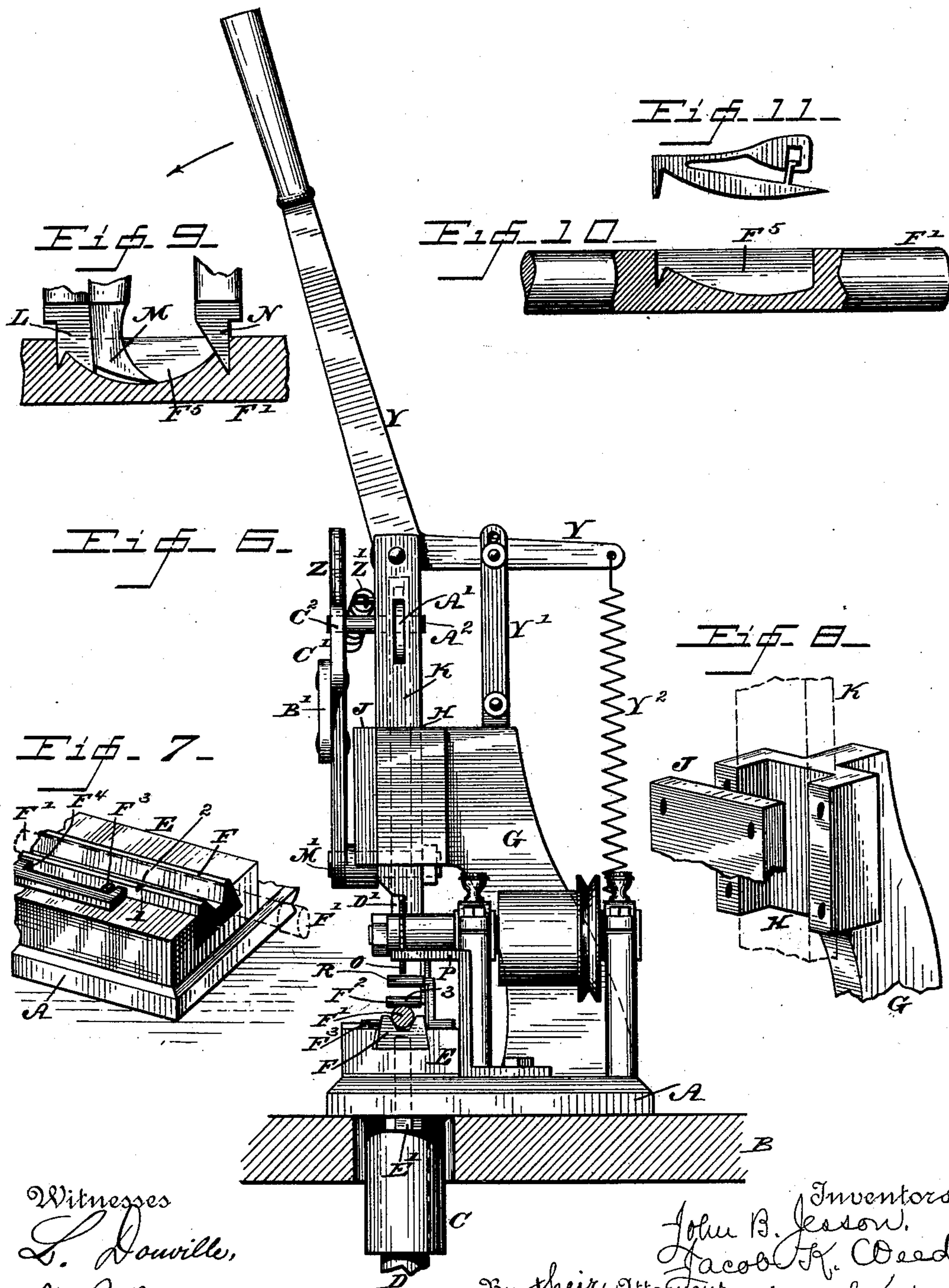
Patented Sept. 10, 1889.



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MACHINE FOR SLOTTING UMBRELLA-STICKS.

SPECIFICATION forming part of Letters Patent No. 410,975, dated September 10, 1889.

Application filed February 27, 1889. Serial No. 301,304. (No model.)

To all whom it may concern:

Be it known that we, JOHN B. JESSON, a citizen of the United States, residing in the city and county of Camden, and State of New Jersey, and JACOB K. WEED, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Machines for Slotting Umbrella-Sticks, &c., which improvement is fully set forth in the following specification and accompanying drawings.

Our invention consists of a machine for slotting umbrella and other sticks and articles, the same embodying means for forming a kerf in said article, and also for forming a recess at one end of the kerf and gouging the other end thereof.

The description of the invention will hereinafter be limited to the slotting of umbrella-sticks, in order to receive the retainer for the runner of the umbrella, a form of said retainer being shown in the drawings accompanying this specification.

Figure 1 represents a front elevation of a machine for slotting umbrella-sticks embodying our invention. Figs. 2, 3, and 4 represent partial front views and partial vertical sections of detached portions thereof. Fig. 5 represents a vertical section of a portion on line $x x$, Fig. 1. Fig. 6 represents a side elevation of the parts shown in Fig. 1. Figs. 7 and 8 represent perspective views of detached parts. Figs. 9 and 10 illustrate the work of the machine. Fig. 11 represents a side elevation of a retainer to be applied to the stick shown in Fig. 10.

Similar letters and numerals of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates the base of the machine, which is secured in any suitable manner to a table, bench, &c.; B, said base having a depending boss C, in which is guided the stem D of a rising and falling bed or table E, the latter being provided with a channeled slide F, which is adapted to travel in the direction of the length of the machine, as indicated by the straight arrow in Fig. 1,

and receive the stick or handle F' to be slotted. The slide F carries a clamping device F², which prevents the stick or handle F' from moving after the latter has been placed in position, said slide also being provided with a stop F³, which abuts against a shoulder F⁴ on the table E when said slide F has traveled the desired distance, and prevents farther advance of the same, and is furthermore provided with a mark or indicator I to enable the operator to place the handle or stick F' in the proper place.

Rising from the base A is a standard G, the upper portion of which is provided with a vertical recess H and cap J, forming a guide, through which freely passes the plunger K, carrying cutters L M N and mechanism for operating the same, as will be hereinafter described.

Mounted on the base A and driven in any suitable manner is a circular saw O, and rising from said base is a horizontal stop P, against which the stick or handle F' strikes when the bed or table E has been elevated to the desired extent and limits the ascent of the same. The bed or table E is provided with abutments or stops R, which strip the stick or handle F' from the cutters when the latter are raised.

S designates a rod, the lower end of which is pivoted to a treadle T and the upper end to a lever U, the latter being mounted on a hanger V, secured to a collar W on the boss C, the end of the lever U opposite to that connected with the rod S being in contact with the roller X, mounted on the stem D of the bed or table E.

Y designates an elbow-lever, which is mounted on a standard Y', rising from the frame of the machine, said lever being pivoted at its angle or bend to the plunger K, whereby the latter may be lowered by the operation of said lever, its return motion being accomplished by a spring Y², which is connected to the end of the lever and a suitable part of the frame of the machine.

The cutter M is connected with a shaft M', whose bearings are on the plunger K, said shaft having connected with it a lever Z,

whereby a partial rotary motion will be communicated to said cutter M. The cutter N is fitted to the plunger K, so as to slide vertically therein, the upper portion of the shank of said cutter being recessed to receive the cam A', whose shaft A² is connected with a toggle C', the latter having its lower end pivoted to the lever Z, it being seen that owing to the toggle C' the cam A' may be operated in such manner as to raise the cutter N clear of the path of motion of the cutter M as the latter describes its circular motion, as will be seen in Fig. 2.

The operation is as follows: The stick is placed on the slide F, and so located that a mark—such as 2—previously made on said stick will register with the mark 1 on said slide. The handle of the clamp F² is then closed, thus bringing the nose 3 thereof against the stick and holding the same in position. (See Figs. 1 and 6.) The treadle T is now depressed, thus raising the stem D and consequently the bed or table E, and bringing the stick in contact with the rotating saw O, (see Fig. 4,) thereby cutting the kerf F⁵ in the stick the required depth. When this has been accomplished, the stick comes in contact with the stop P, and is thereby prevented from further ascent. The treadle T is now released and the bed E descends to its normal position, after which the slide F, which carries the stick, is moved by hand in the direction of the straight arrow. (See Fig. 1.) When the kerf F⁵ has reached a point directly under the cutters L M N, the stop F³ comes in contact with the shoulder F⁴ and prevents further advance of the slide F. The lever Y is now moved in the direction of the arrow, (see Fig. 6,) and causes the plunger K to descend, thus forcing the cutters L M N into the kerf previously cut. (See Fig. 3.) The cutters L and N pierce the stick at the ends of the kerf F⁵. (See Fig. 9.) The handle of the clamping device F² is now released and the lever Z moved in the direction of the curved arrow, (see Fig. 1,) whereby the cutter M is caused to advance in a curvilinear direction and cuts away or gouges out the corner of the kerf F⁵ adjacent to the opening made by the cutter N. Simultaneously with or slightly in advance of this operation the cutter N is moved from the path of the cutter M, this being accomplished by the operation of the link B', crank C², and cam A' through the medium of the lever Z, whereby the shank of the cutter N is raised, and the cutter accordingly clears the cutter M as the latter advances. The plunger is now raised and the lever Z returned, whereby the cutters M N resume their normal position. The stick, being stripped of the cutters, is then removed and the slide run back, so that the operations may be repeated.

Secured to the plunger K is a stop D', which limits the downward motion of said plunger, thus preventing the cutters L M N from entering too far into the stick.

Referring to Figs. 3 and 4, the slide F has

a bolt E' depending therefrom, and the table E and base A are provided with slots G' G², respectively. One end of the slot of the base is enlarged, so as to allow the head of the bolt E' to freely pass through the same and enable the bed or table E to be raised. When said bed or table E is lowered, the slot G' of the base allows the bolt E' to move in a longitudinal direction with the slide, but prevents the latter from rising, excepting when the head of said bolt again registers with the enlarged portion of said slot of the base.

The lever Z has a spring Z' connected with it for restoring it to its normal position.

After the work is performed, the retainer may be fitted in position, the longitudinally-extending spur being driven into the wood at the gouged-out corner of the kerf, and the spur at the opposite end entering the opening formed by the cutter L.

Figs. 7, 8, 9, and 10 are drawn on a scale larger than those in the other figures.

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

1. A machine for slotting umbrella-sticks, &c., having a base, a rising and falling table, a slide working on said table and provided with a clamping device, and a plunger with cutters above said table, said parts being combined substantially as described.

2. A machine for slotting umbrella-sticks, &c., having a base, a rising and falling table guided on said base, a channeled slide working on said table and provided with a clamping device secured thereto and adapted to hold the stick operated on in position, a rotary saw journaled above said table, and a stop above and connected with said base for limiting the rising motion of the said table, said parts being combined substantially as described.

3. A machine for slotting umbrella-sticks, &c., having a base, a rising and falling table guided on said base, a channeled slide working on said table, a rising and falling plunger working in a guide secured to the device, said guide being above the table and said plunger carrying cutters, and a rotary saw journaled in bearings secured to the base, said parts being combined substantially as described.

4. A saw, a rising and falling table, and a slide on said table, in combination with a plunger above said slide carrying a cutter which is adapted to vibrate thereon, whereby a kerf may be formed by said saw, and one end of the same gouged out by said cutter, substantially as described.

5. A plunger carrying two cutters, and a vibrating cutter between the same, said parts being combined substantially as described.

6. A vibrating cutter mounted upon a plunger, and a rising and falling cutter fitted to said plunger, said parts being combined substantially as described.

7. A plunger having a cutter fitted thereto so as to rise and lower, in combination with

a cam which engages with the shank or stock of said cutter, and a lever for operating said cam, substantially as described.

5 8. A plunger having a vibrating cutter mounted thereon, and a rising and falling cutter fitted thereto, in combination with a cam which engages with the shank or stock of the rising and falling cutter, and a lever which is connected with the shafts of the vi-
10 brating cutter, and the cam for simultaneously operating both shafts and their connected parts, substantially as described.

15 9. A rising and falling table, a slide fitted on said table, and a saw mounted above the slide, in combination with a plunger carrying cutters adapted to pierce the wood at the end of the kerf formed by the saw, and a vibrating cutter fitted between said cutters adapted to gouge the wood at one end of said kerf.

20 10. A rising and falling table, and a slide fitted thereon, in combination with a bolt which depends from said slide and passes through slots in the table and base of the machine, one end of the slot in the base being
25 enlarged to permit the head of the bolt to pass through the same when the table is properly raised, substantially as described.

11. A plunger carrying a vibrating cutter and a rising and falling cutter, in combination with a cam which engages with the shank 30 or stock of said rising and falling cutter, a lever which is connected with the axis of said cutter, and a toggle, one limb of which is secured to the axis of the cam and the other limb pivoted to said lever for simultaneously op- 35 erating both cutters, substantially as described.

12. A rising and falling table, cutters above the same, a rising and falling plunger carrying saw, and a cutter, in combination with a 40 stop connected with said table, whereby the article that has been cut is stripped off the cutter when the plunger rises, substantially as described.

13. A saw, a rising and falling table, and a 45 cutter, in combination with the stop P, rising from the base or bed of the machine, and the stop R, rising from said table, substantially as described.

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