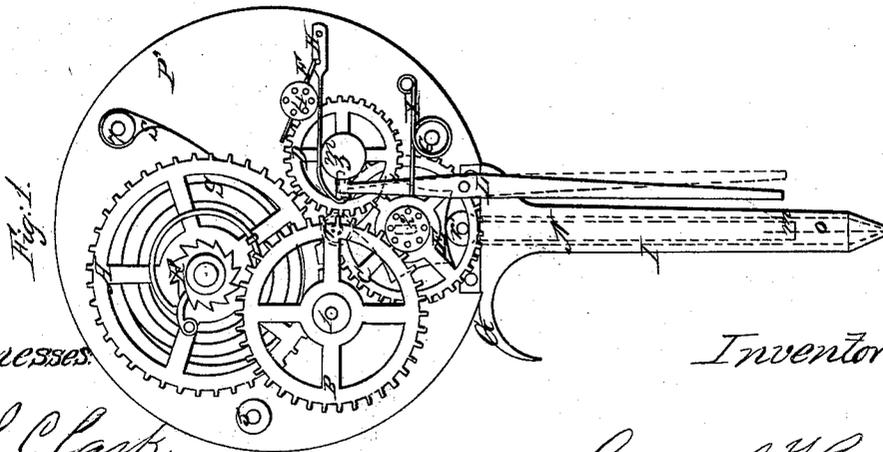
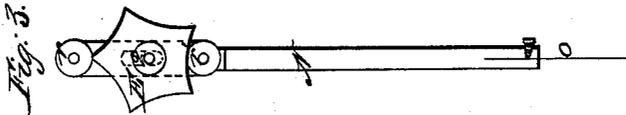
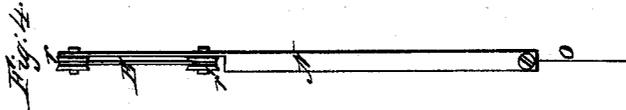
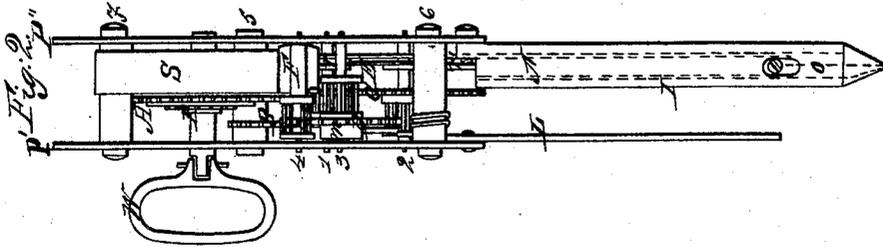


*S. Huffman,*  
*Finking Machine.*

*No. 55,809.*

*Patented June 20, 1866.*



*Witnesses:*

*J. S. Clark*  
*D. Miller*

*Inventor:*

*Samuel Huffman*

# UNITED STATES PATENT OFFICE.

SAMUEL HUFFMAN, OF CARTHAGE TOWNSHIP, HANCOCK COUNTY, ILL.

## PUNCTURING-MACHINE FOR MAKING PATTERNS.

Specification forming part of Letters Patent No. 55,869, dated June 26, 1866.

*To all whom it may concern:*

Be it known that I, SAMUEL HUFFMAN, of the town of Carthage, in the county of Hancock, in the State of Illinois, have invented a new and useful Improvement, which I call a "Puncturing-Machine;" and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view with the side plate removed. Fig. 2 is an end or edge view of Fig. 1. Fig. 3 is a side view of the cam, rollers, and needle-bar as used in Figs. 1 and 2. Fig. 4 is an edge view of Fig. 3.

In constructing my puncturing-machine I place the machinery between the two plates P' P'', which plates are supported by three pillars, 5, 6, and 7, with screws through the plates P' P'' into the pillars, holding them firmly. The main wheel A has seventy-two teeth. I attach one end of the driving-spring S to the shaft of the ratchet R, which surrounds the shaft of main-wheel A, as used in a clock in winding up a spring. The other end of spring S is attached to the pillar 7, as shown in Figs. 1 and 2. The second wheel, B, has fifty-six teeth. C, third wheel, has forty teeth, and D, fourth wheel, has thirty-six teeth. B, C, and D each have a pinion of eight leaves, (shown at 1 2 3, Figs. 1 and 2.) On pinion 4, which has seven leaves, I place the regulating-fly F. I use a cam (shown at E, Figs. 1 and 3, side view, and Fig. 4, edge view) with five projections and five depressions. The cam is attached firmly upon pinion 2, so that the cam must turn with the wheel C and pinion 2. The cam E is placed between two rollers, *rr*. The rollers are attached to the needle-bar N in such a manner as to allow them to turn freely. When the depression in the cam on one side presses the roller the projection opposite will touch the other roller. Thus the cam, in turning, its points and depressions will touch each roller alternately and cause the needle-bar N to rise and fall, carrying with it the needle *o*. When a point of the cam touches the upper roller *r* the needle is up, and when the lower roller is struck by a projection in cam the needle is driven down and punctures the paper or other material intended for puncturing.

The needle-bar N, cam E, and rollers *rr* are plainly shown in Fig. 2. Behind the cam E, through the needle-bar N, is an elongated slot, through which the pinion 2, which is the cam-shaft, passes, Fig. 3. The slot is long enough to allow the needle to be raised the height of cam-projections, or one-fourth of an inch. (Shown in Figs. 1 and 2, marked ".")

The needle-bar is inclosed in a case, I. (Shown in Fig. 1 at I and N.) The case I is attached to plate P'', (shown in Fig. 2,) and serves as a handle to the machine and guide for the bar N. On one side of the case I is attached a finger-guard, G, for the purpose of sustaining part of the weight when the machine is in use. At the lower end of N, I fasten the puncturing-point *o* to N by a screw or any convenient method.

On the pinion-shaft 3, wheel D, I place a collet, *m*, provided with a hole in the face, into which the bent end of stop-lever L drops and stops the machine's motion. By pressing the lever L at the lower end the point at *m* will rise from the hole in collet *m*, and the machine (if wound up) will start. A spring, one end, H, is attached to plate P', and the other end rests on the collet *m* and serves as a brake. I attach a spiral spring, *x*, with one end to plate P', wound round pillar 6, and the other end to the stop-lever L, for the purpose of forcing the point of L into the hole in *m* at the proper time to stop the machine. The winding-key W (shown in Fig. 2) is fastened on the end, outside of plate P' of the winding-shaft of ratch R, so that it may be turned down after winding.

Having the machine compact in a small compass and light, driven by a spring instead of foot or other mechanical power than a spring, I have more freedom in using it, doing the work with more facility and a great advantage in point of economy.

When the machine is in use tracing lines and puncturing, its entire machinery is carried along with the hand, as a writing-pen or tracing-point.

When in use the needle should be perpendicular to the paper on which the pattern is drawn. Several thicknesses of cloth should be stretched on a board upon which the pattern is placed for puncturing.

Having thus fully described the construction and operation of my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

A machine when so constructed with a puncturing-point, in combination with a spring, and when the machine entire is movable when in use, as is a pen or pencil tracing-point, substantially as herein described, and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

SAMUEL HUFFMAN.

Witnesses:

J. S. CLARK,  
J. WILBUR.