

L. P. SUMMERS.

Machines for Making Hinges.

No. 133,903.

Patented Dec. 10, 1872.

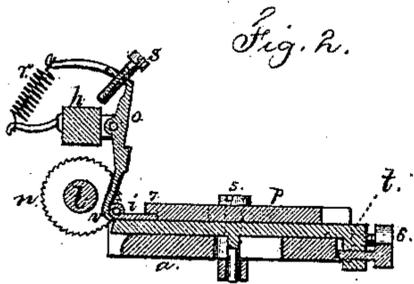


Fig. 3.

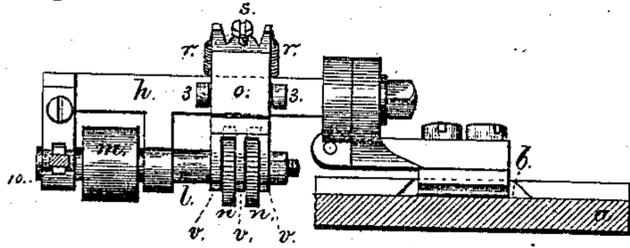


Fig. 1.

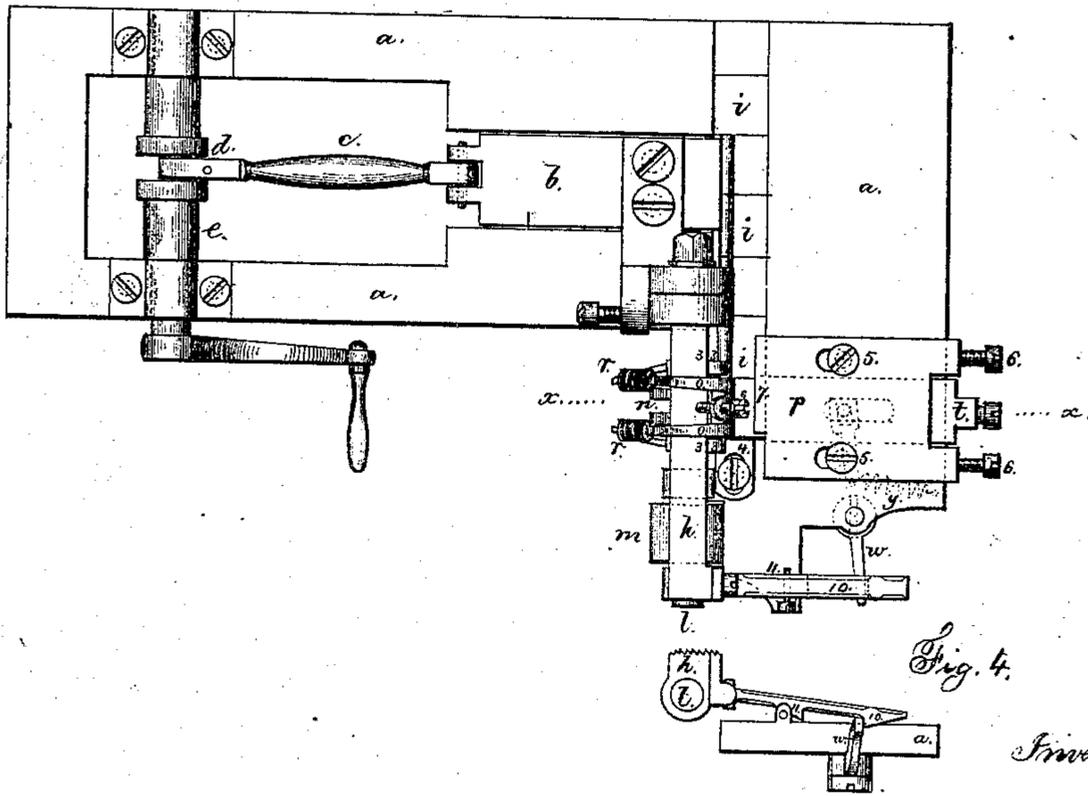
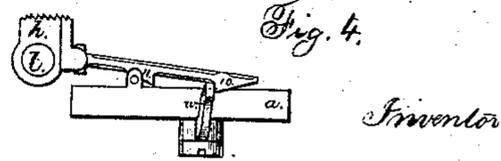


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

LUCIUS P. SUMMERS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO P.
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IMPROVEMENT IN MACHINES FOR MAKING HINGES.

Specification forming part of Letters Patent No. 133,903, dated December 10, 1872.

To all whom it may concern:

Be it known that I, LUCIUS P. SUMMERS, of New Britain, in the county of Hartford and State of Connecticut, have invented an Improvement in Hinge-Machinery, of which the following is a specification:

Machines have been made in which a blank of sheet metal is subjected to the action of a concave die that rolls up the edge at one side to form the cylinder, through which the joint-pin passes.

I add to this machine a device for removing portions of the cylinder, leaving only those parts that are required for entering between the remaining portions or knuckles of the other half-hinge and receiving the joint-pin. I make use of a spring-holder to steady the hinge while being acted upon by cutters, thereby preventing any tremulous motion, and the cutters are brought up and pressed to their work by a mechanism connected with the sliding die that rolls up the edge of the blank. The supporting-bed is drawn from under the half-hinge upon the reverse movement of the parts, so that the half-hinge is dropped. In this manner each half-hinge is completed by one movement of the machine.

In the drawing, Figure 1 is a plan of the machine; Fig. 2 is a vertical section at the line *x x*, and Fig. 3 is an elevation of the cutters and holder.

The bed *a* is sustained upon a suitable frame or legs, and contains the slide *b* that is reciprocated by the pitman *c*, crank *d*, and shaft *e*. At the end of the slide *b* is a concave or grooved face that acts upon the edge of one of the blanks *i* to roll the same over, said blank being in a groove in the bed *a*, and the blanks are fed into this groove successively from a hopper or slide automatically. These parts, being of known character, do not require further description. A stock, *h*, projecting as an arm from the slide *b*, carries a shaft, *l*, that is revolved by suitable power applied to the pulley *m*. Upon this shaft *l* are attached rotary files or cutters *n* that are of the proper width to cut out the sections of the hinge between the knuckles, and the distance that these

are apart determines the length of the said knuckles. The holder *o* is mounted upon the stock *h* by a fulcrum-pin, 3, and provided with a spring or springs, *r*, adjusting-screw *s*, and spring-fingers *v*, the lower ends of which form loops to receive the rounded edge of the hinge. These spring-holding fingers are situated between the cutters *n*, so that as the hinge-blanks are moved along in the transverse groove of the bed *a*, and arrested by the stop 4, the fingers *v* rest against the cylinder portion of the hinge, and hold the same while the spaces are cut out by the files or cutters *n*, and as the stock *h*, with these files or cutters, moves, the fingers and holder *o* swing on the fulcrum 3 and strain the holding-spring *r* to a greater tension. The slide-plate *p* is attached by screws 5 to the bed *a*, and adjusted by screws 6, and beneath the overhanging edge 7 of this plate *p* the back edge of the hinge slides as it is passed along toward the stop 4; thereby the hinge-blank is accurately positioned and firmly held while being cut. Beneath this plate *p* is the supporting-bed *t*, that is fitted so as to be moved back by the lever *w*, and there is a hook, 10, upon the stock *h* (see Fig. 4) that draws back this bed and allows the hinge to drop. This hook 10 is lifted by an incline and stop, 11, so as to liberate the lever *w* and allow of its return by a spring, *y*, (shown by dotted lines,) before the next half-hinge blank is moved forward toward the stop 4.

I claim as my invention—

1. The holder *o* with its fingers *v*, in combination with the cutters *n*, moving stock *h*, and mechanism for supporting the blank or half-hinge, substantially as specified.

2. The sliding bed *t* and lever *w*, operated substantially as set forth, in combination with the stock *h*, holder *o*, revolving cutters *n*, and slide *b*, substantially as set forth.

Signed by me this 10th day of August, A. D. 1872.

L. P. SUMMERS.

Witnesses:

CHARLES PECK,
SAML. BASSETT.