

(No Model.)

J. D. ULMER & J. S. COLLINS.

## BUTTON HOLE GAGE.

No. 302,803.

Patented July 29, 1884.

Fig. 1

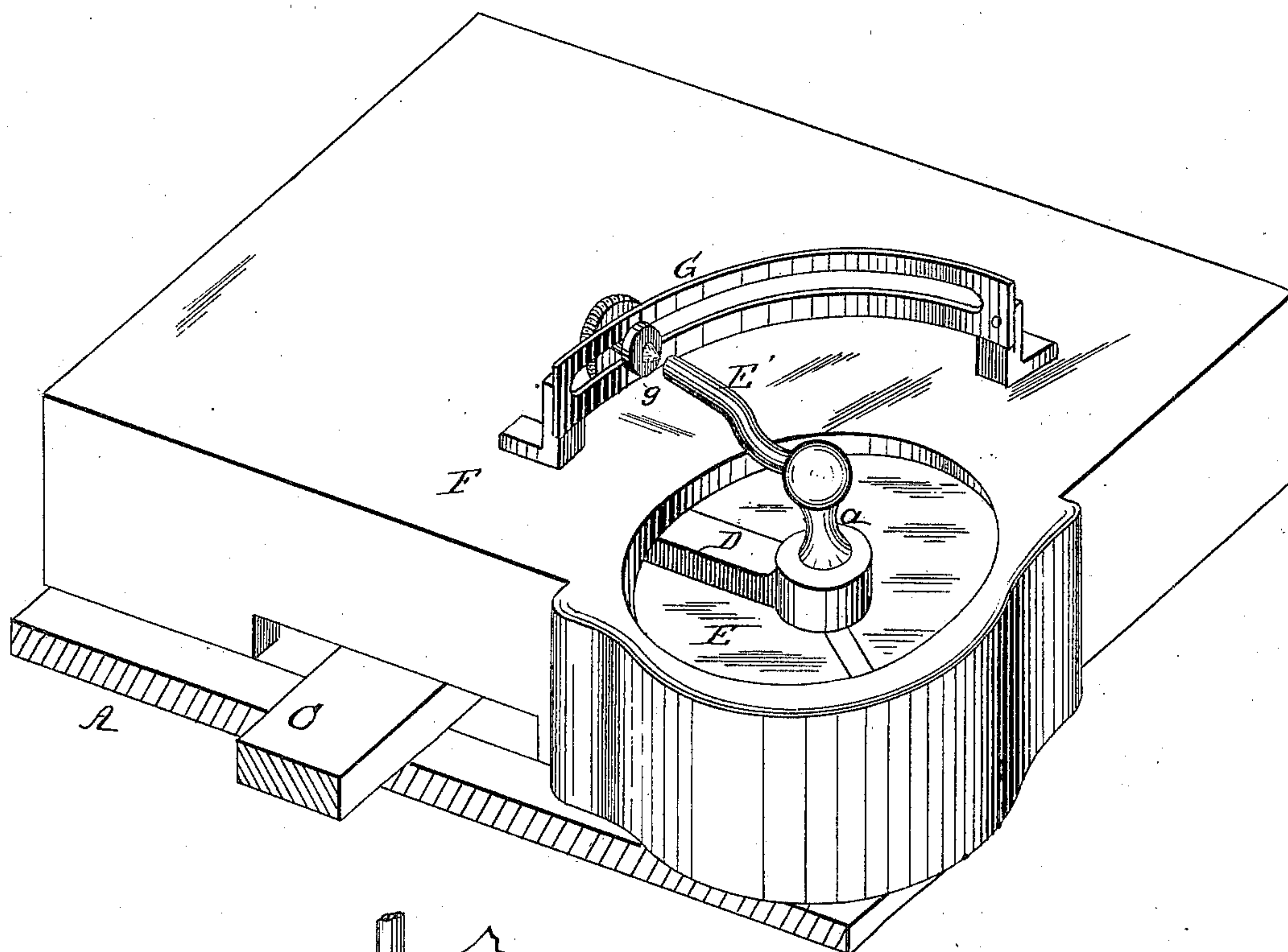
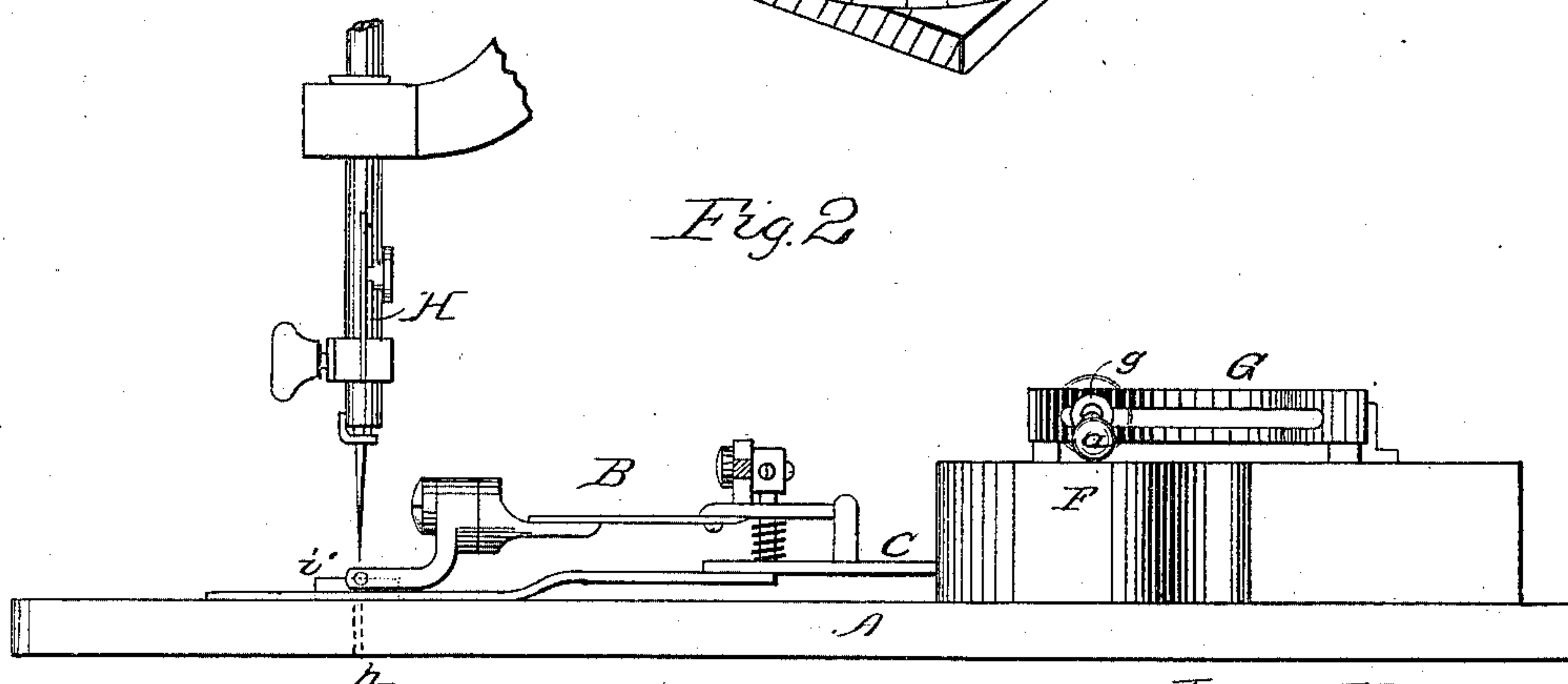


Fig. 2



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# UNITED STATES PATENT OFFICE.

JOHN D. ULMER AND JOSEPH S. COLLINS, OF PHILADELPHIA, PA.

## BUTTON-HOLE GAGE.

SPECIFICATION forming part of Letters Patent No. 302,803, dated July 29, 1884.

Application filed March 5, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN D. ULMER and JOSEPH S. COLLINS, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Button-Hole Gages; and we do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification, in which is shown, in—

Figure 1, a perspective view of our improvement in position upon a sewing-machine; in Fig. 2, a side view of the same.

This invention has relation to button-hole stitching-machines, and has for its object the provision of means for indicating upon a machine adapted to the stitching of different lengths of button-holes the exact point of finish in the line of stitching on completion of the button-hole.

The class of machine to which the improvement is specially adapted is shown in the patent to Morris and Hallenbeck, No. 252,052, of January 10, 1882. In this machine the cloth-clamp is carried by a feed-bar, which is coupled by a pitman to a radially-adjustable crank-pin on a crank-wheel, so that by the step-by-step rotation of the latter the feed-bar will be moved to and fro, step by step, a distance regulated by the distance of the crank-pin from the center of the crank-wheel.

In stitching button-holes it has been usual to determine the finishing-point by inspecting the stitching or by generally observing the position of the cloth-clamp, and it frequently happens that the stitching falls short of the proper length, or else overlaps, forming on one side or end of the button-hole a double line; and, again, when it is desired to cut the button-hole slit by means of a punch or blade arranged to operate in a uniform plane, unless the stitching is brought to an exact finish the cutting-blade will either strike the clamp-shoe or will strike the end of the stitching, and not only sever the threads, but will slit the fabric outside the line of stitching.

Our invention contemplates the employment of a special expedient for indicating the

exact point or period of completion of the stitching; and it consists in the provision of a scale and an adjustable sliding index-block applied to the frame of the machine, and in such relation to the arm on the crank-pin of the feed-regulating wheel that the coincidence of the end of the arm and the index-block during the stitching operation indicates an exact completion of the stitching, and a restoration of the fabric and feed-clamp to their normal position, the same being that in which the knife will penetrate exactly and without obstruction between the sides and ends of the outlined button-hole.

Referring to the accompanying drawings, A designates the bed of a button-hole sewing-machine, and B the feed-clamp carried by the feed-bar C, and coupled by means of the pitman D to the crank-wheel E. The details of the feeding mechanism need not be shown or described. It suffices that the wheel E be so arranged that it shall make a complete or partial revolution for every complete line of stitching. The crank-pin *a* is adjustable to regulate the length of the button-hole, and this adjustment may be effected by the means shown in the patent already referred to, or by any other suitable means. E' designates a radial arm on said crank-pin, used primarily for the purpose of moving the feed mechanism by hand. This arm in our improvement serves the purpose of an index-pointer.

Upon the shield or casing F, covering the working parts of the machine, we arrange a curved plate, G, having a longitudinal slot, in which fits an index-block, *g*, adjustable to any point according to the length of the button-hole. The plate G may be provided with graduations to insure exactness in setting for given lengths at different times. The block *g* is set at a point corresponding to the point of finish of the stitching determined by the length of the button-hole; hence, when the arm E' coincides with said block after the stitching has progressed, the stitching is completed. At the same time the uncut button-hole is exactly on a line with the cutting-blade H, and over the slot *h* in the cloth-plate through which the blade moves, and the latter, being depressed by the needle-bar to which it is ad-

justably attached, or by any other means, will penetrate the fabric between the lines of stitching only, and will neither fray the edges of the button-hole, cut through the end thereof, or come in contact with the shoe *i'*.

Having described our invention, we claim—

1. In a button-hole sewing-machine, the combination, with the feed-plate and suitable devices for imparting motion thereto and regulating the length of the line of stitching, including the wheel E, adjustable crank-pin *a*, and arm E', the finishing-gage comprising the plate G and adjustable index block *g*, substantially as described.

2. In a button-hole sewing-machine, a gage

constructed and adapted to indicate the exact finish of the stitching, and comprising a rotary pointer or finger and an adjustable stud or indicator, with which said pointer or finger coincides when the stitching is completed, substantially as and for the purpose set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 1st day of March, 1884.

JOHN D. ULMER.  
JOSEPH S. COLLINS.

Witnesses:

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JOHN URIAN.