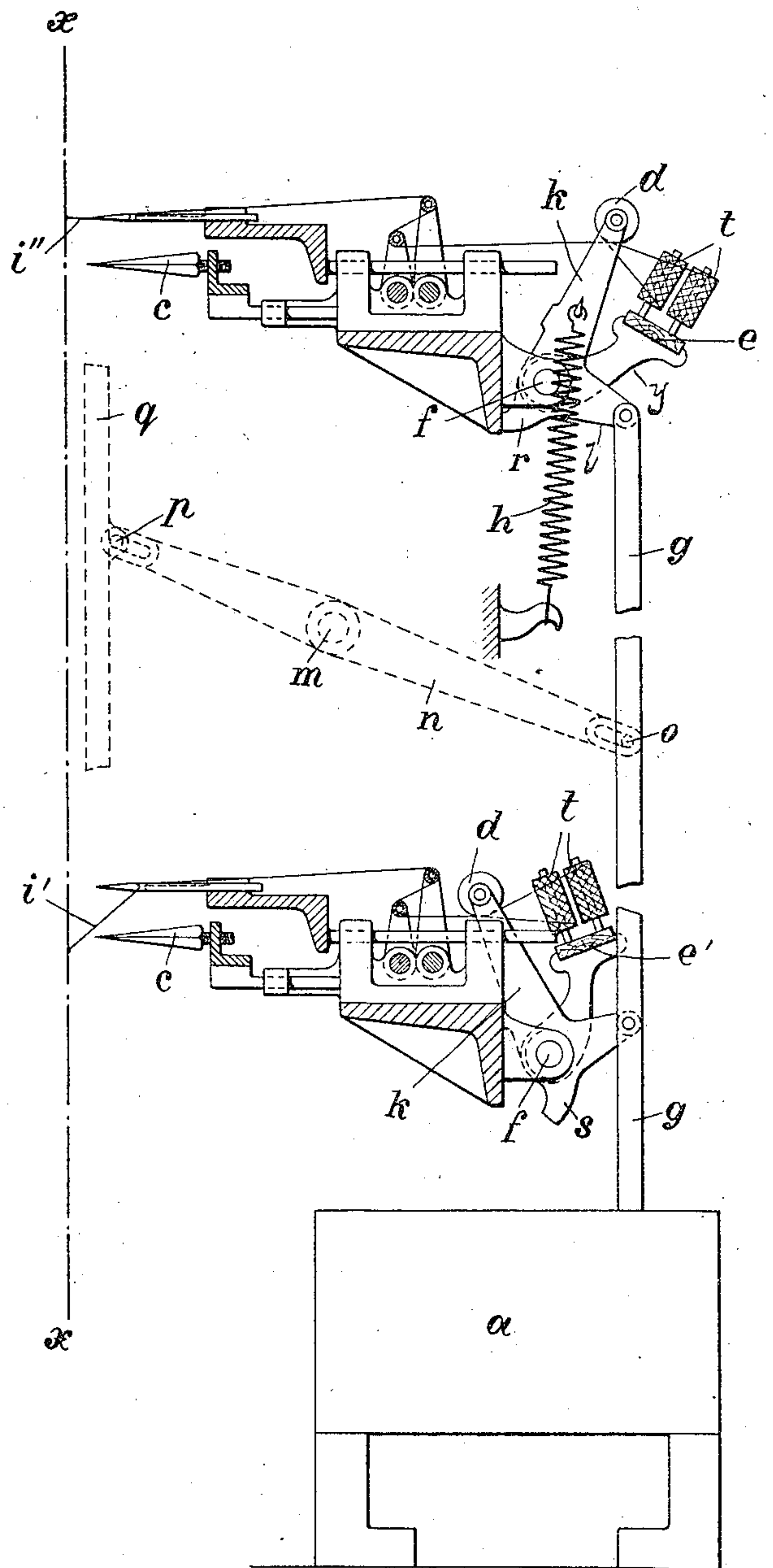


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EMBROIDERING MACHINE.
APPLICATION FILED APR. 9, 1909.

952,858.

Patented Mar. 22, 1910.



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ROBERT ZAHN, OF PLAUEH, GERMANY.

EMBROIDERING-MACHINE.

952,858.

Specification of Letters Patent.

Patented Mar. 22, 1910.

Application filed April 9, 1909. Serial No. 488,814.

To all whom it may concern:

Be it known that I, ROBERT ZAHN, a subject of the Emperor of Germany, residing at Plauen, in the Kingdom of Saxony and Empire of Germany, have invented certain new and useful Improvements in Embroidering-Machines, of which the following is a specification.

This invention relates to attachments to shuttle embroidering machines and has for its objects among others to provide simple and improved means for loosening the needle threads prior to their boring holes in the embroidery surface.

The invention is clearly illustrated in the accompanying drawing, which, with the letters of reference marked thereon, form a part of this specification and in which is shown a side elevation with parts in vertical transverse section.

Referring to the drawings, *a* represents in a conventional way the well-known embroidery jacquard mechanism.

x-x is the piece of embroidery or material to be operated upon.

b is the needle and *c* the opener or borer.

d is an emery roller, around which passes the thread carried by the bobbins *t* suitably supported on the bobbin bearer *e*, the latter being carried by a lever *y* mounted on the shaft *f*, on which latter also is mounted the lever *k*, which latter carries the roller or escapement *d* of the thread, all as seen clearly in the upper part of the figure.

The lever *k* has the arm *l*, to which is pivotally attached one end of the vertical link *g*, the shifting of which is automatically done by the jacquard mechanism, or by a two-armed lever *n* mounted to swing on a bolt or the like *m*, having one end provided with an elongated slot engaging a pin as on the link *g* and the other end provided with a similar slot engaging a pin *p* on the board *q*, which latter is arranged parallel with the material.

A spring *h*, fast at one end to the lever *k* and at its other end to some fixed part of the machine, serves to hold the lever in either position, because the maintaining power in

both end positions passes upon one side or the other of the center of motion *f* of said lever, as will be readily understood.

The upper part of the figure shows the position of the parts in the position for embroidering. The lower portion of the figure shows the same parts in position for boring. When the link *g* is moved upward, the parts are moved into the position shown in the lower part of the figure. When it is wished to embroider again, the link is pulled downward. The embroidery surface must be shifted a certain distance downward before boring. For this reason, the thread is shown obliquely stretched downward in the lower portion of the figure, as shown at *i'*. In the upper part of the figure, the portion of the thread *i''* is shown as horizontally stretched. In order to loosen the thread so that the oblique position *i'* becomes possible, the link is moved and the levers turned on their pivot or shaft *f*, as will be readily understood.

What is claimed as new is:—

1. In a device of the character described, the combination with the embroidering needle and the borer, of bobbin bearers pivotally mounted, and means for moving them to and fro in the direction of the material to be embroidered.

2. In a device of the character described, the combination with the embroidering needle and the borer, of bobbin bearers pivotally mounted, levers carrying said bearers means for moving them to and fro in the direction of the material to be embroidered, and a spring connected to one of the levers at one end and at the other end to a fixed part of the frame for holding the levers in either of their end positions.

3. In a device of the class described, the combination with the needle and borer, of a bell crank lever pivotally mounted, a shifting link connected with one arm of said lever, a thread guiding roller on the other end, a bobbin holder mounted on the same center as said lever, and a spring connected to said lever at one end and at the other end to a fixed part of the frame for holding the lever in either of its positions.

4. In a device of the class described, the combination with the needle and borer, of a bell crank lever pivotally mounted, a shifting link connected with one arm of
5 said lever, a thread guiding roller on the other end, a bobbin holder mounted on the same center as said lever, and a spring for holding the lever in either of its positions,

said lever being provided with a stop to limit its movement.

In testimony whereof I affix my signature.

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ROBERT ZAHN.

In the presence of—

ROBERT HEINRICH NIER,
RICHARD B. WASHINGTON.