

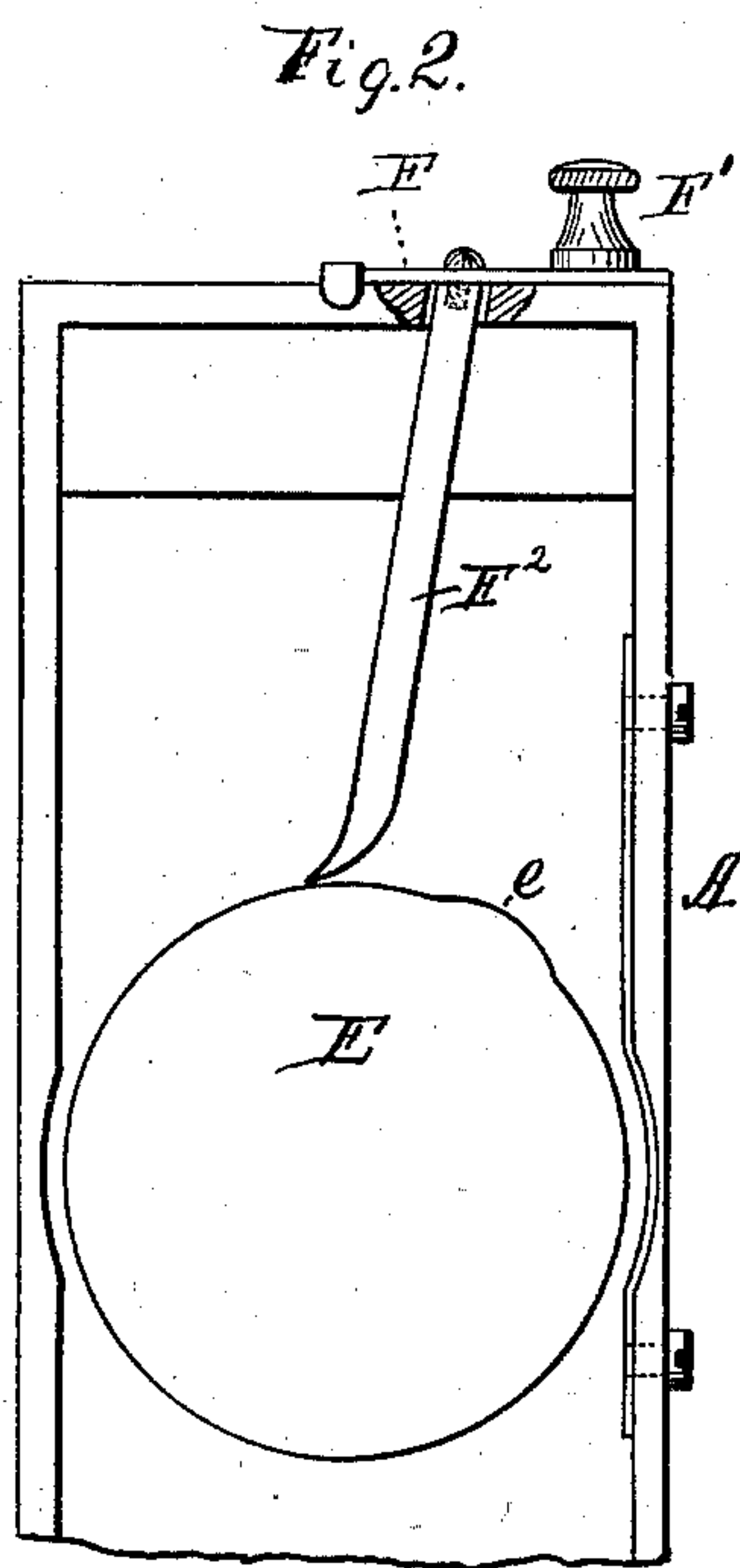
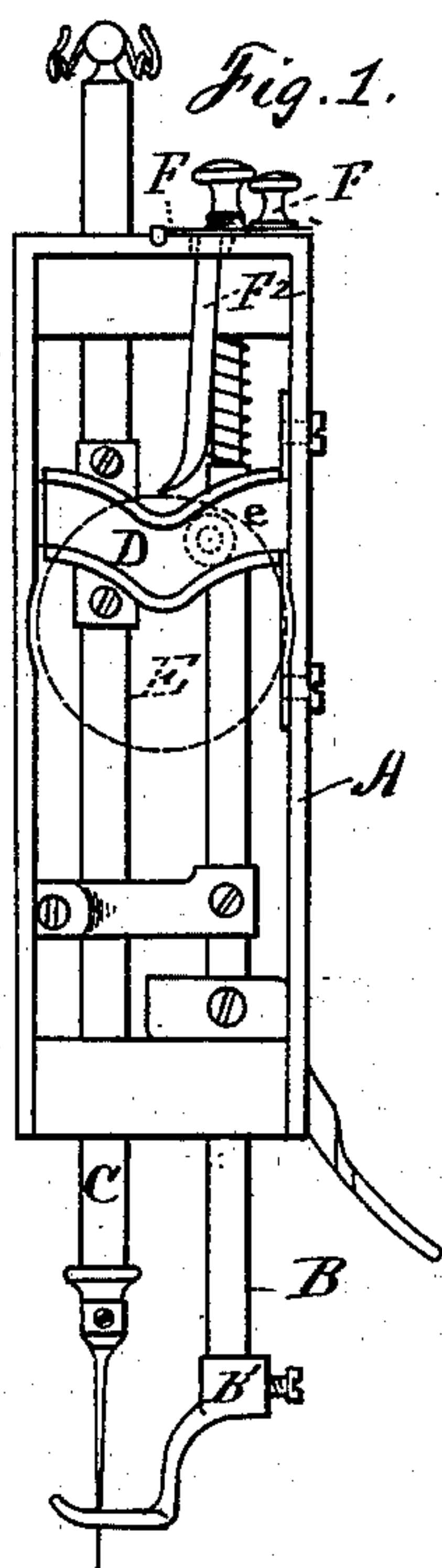
(No Model.)

D. L. KEELER.

TENSION FOR SEWING MACHINES.

No. 255,634.

Patented Mar. 28, 1882.



WITNESSES

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DAVID L. KEELER, OF GRAND RAPIDS, MICHIGAN.

TENSION FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 255,634, dated March 28, 1882.

Application filed July 11, 1881. (No model.)

To all whom it may concern:

Be it known that I, DAVID L. KEELER, of Grand Rapids, county of Kent, State of Michigan, have invented a new and useful Improvement in Tensions for Sewing-Machines; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

The object of my invention is to provide a simple and reliable combination and arrangement of devices by which the needle-thread may be given a proper tension and be relieved therefrom at the moment of the completion of a stitch, so that the stitch will not be drawn beyond a proper point in the fabric, and that thread for a new stitch may be drawn freely from the spool.

In the drawings, Figure 1 is a view of the interior of a sewing-machine head, the position of the driving-crank being indicated by dotted lines. Fig. 2 is an enlarged view of the tension-regulating devices.

A is the case of the sewing-machine head. B is a pressure foot bar; B', its presser-foot; C, the needle-bar; D, the needle-cam; E, the driving-head on the end of the driving-shaft. F is a spring-plate, the tension of which is regulated by a set-screw, F'. F² is an arm projecting down in the interior of the case contiguous to the periphery of the driving-head E. This periphery is not concentric with the shaft, but is slightly bulged at *e*, so that when the stitch is formed in the center of the fabric this swelled portion shall ride beneath the arm F², and in so doing will press it slightly and lift slightly the spring-plate F above.

The operation of the device is as follows: 40
The thread from the spool is passed beneath the plate F, and its general tension is regulated by the set-screw F'. At the instant, however, that the stitch is formed in the center of the fabric the pressure upon the arm F², as above 45
explained, releases the thread, so that at that instant the thread will draw freely from the spool to form another loop. This prevents the liability of breaking the thread at the instant that it is drawn into the center of the fabric. 50
Moreover, it prevents the thread from drawing through the fabric, which might be the case were the tension upon the thread uniform and a little too great. I have found the device to constitute a very effective tension. 55

I am aware that thread-clamps have been operated to release the thread by cams on rotary shafts and intermediate pins and other connections, and I do not claim such construction broadly. 60

What I claim is—

In a tension device, the combination of the spring-plate F, secured at one end upon the top of the machine-head, the arm F², projecting downward from said spring-plate, and the 65
disk E, fixed upon the driving-shaft, connected by a wrist-pin and cam-plate with the needle-bar, and having the bulge or cam *e* upon its periphery arranged to force arm F² upward, and thereby lift the spring-plate to release the 70
thread, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

DAVID L. KEELER.

Witnesses:

WM. WOODWARD,
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