

(No Model.)

T. A. MACAULAY.

TENSION RELEASE FOR SEWING MACHINES.

No. 273,562.

Patented Mar. 6, 1883.

Fig. 1.

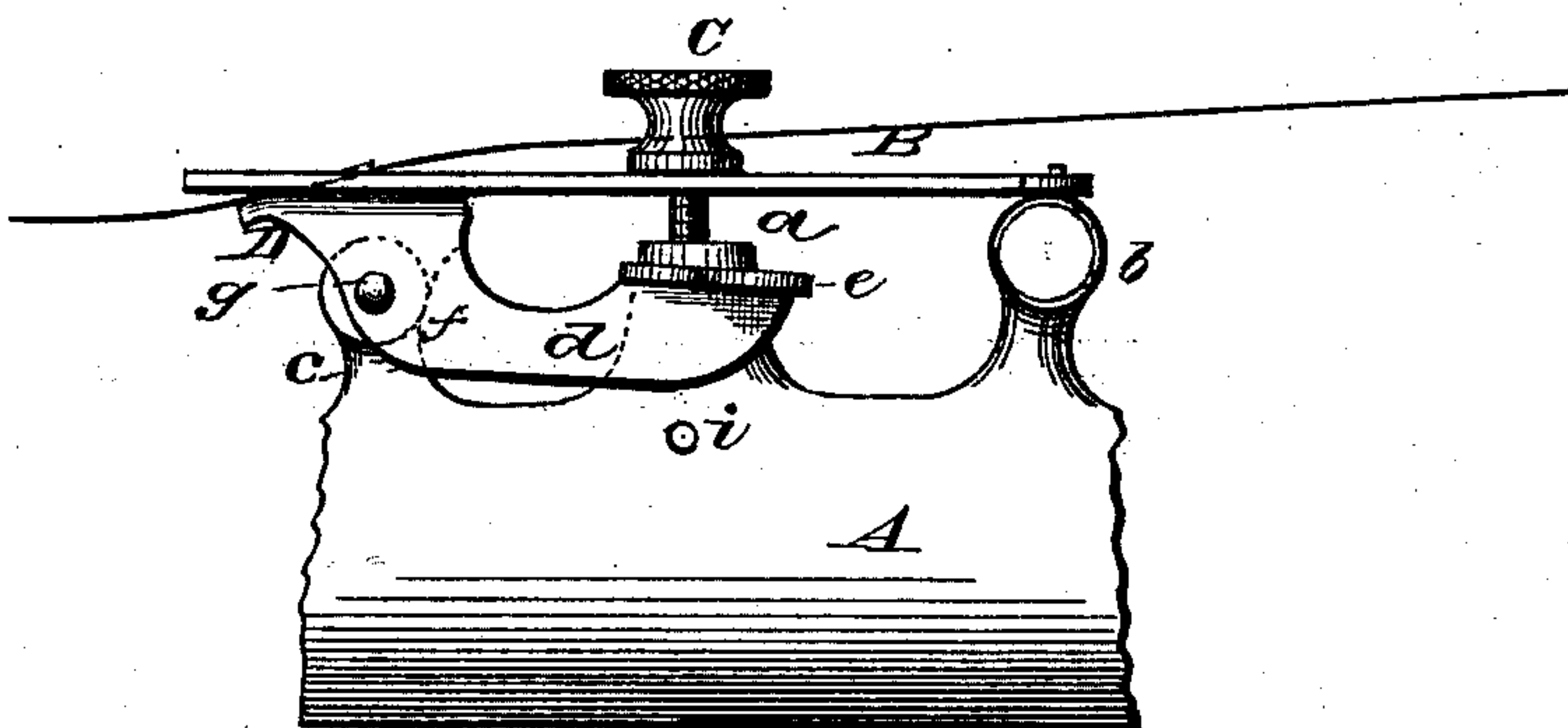


Fig. 5.

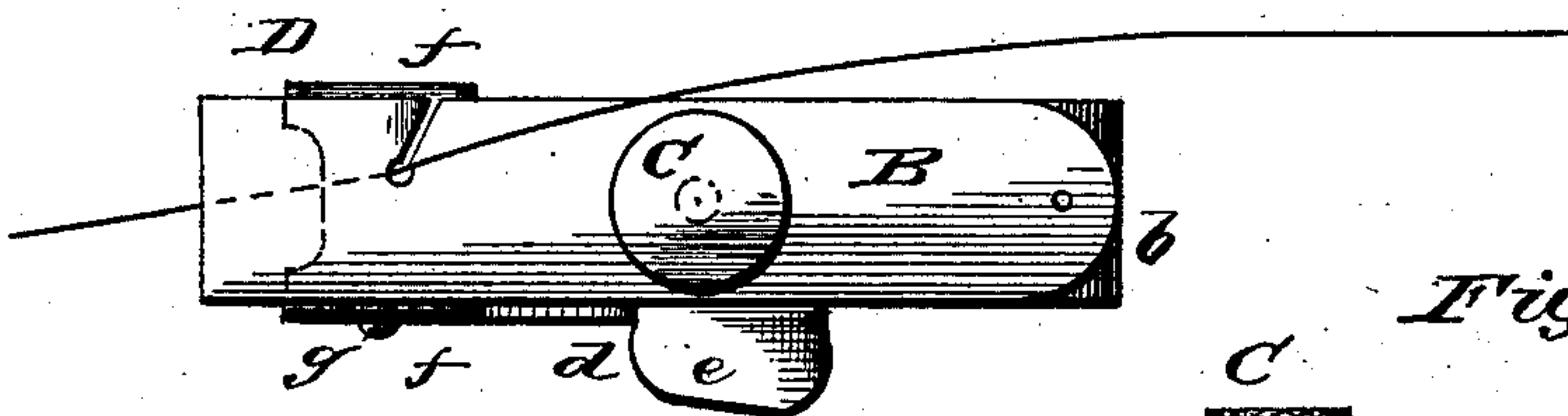


Fig. 2.

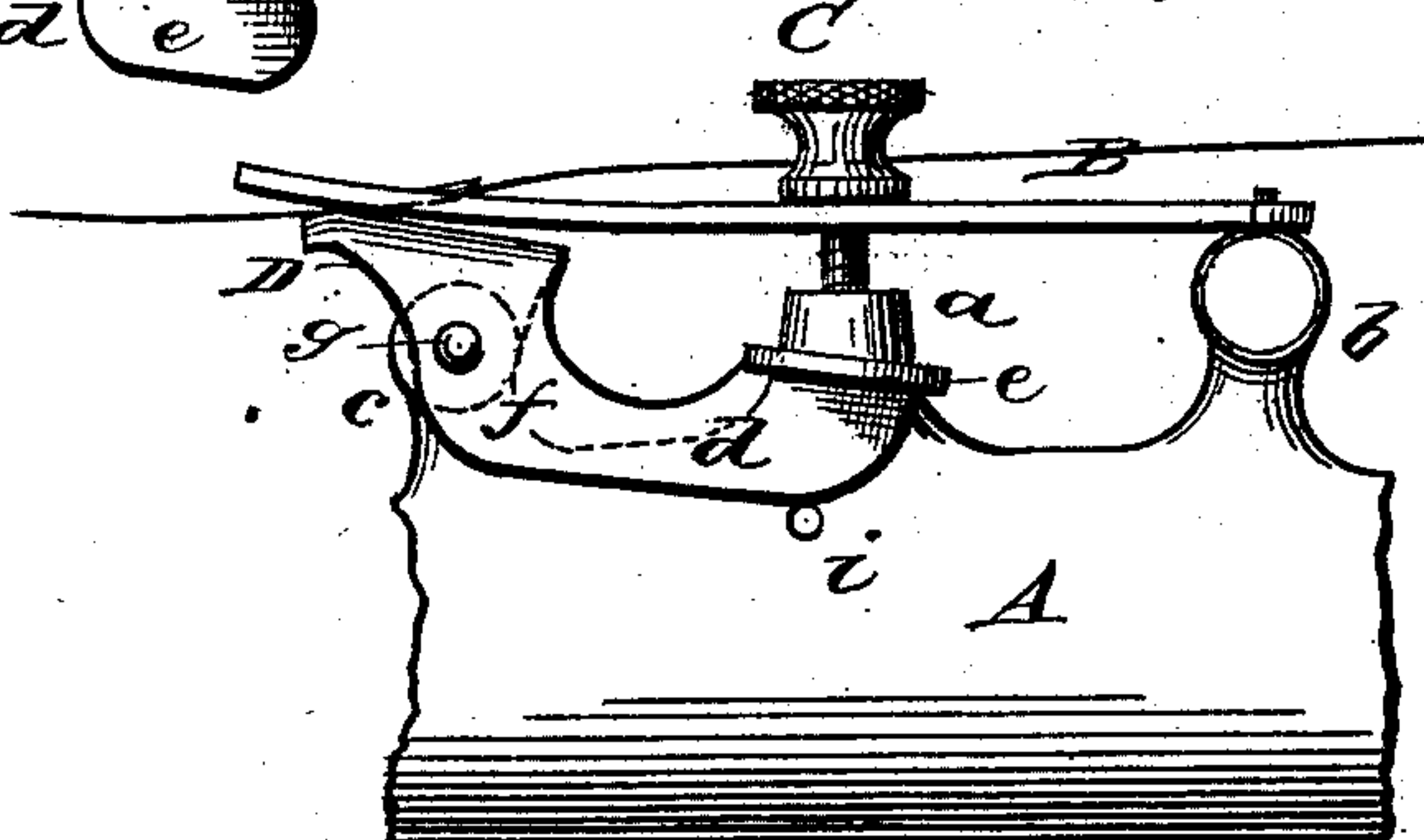


Fig. 4.

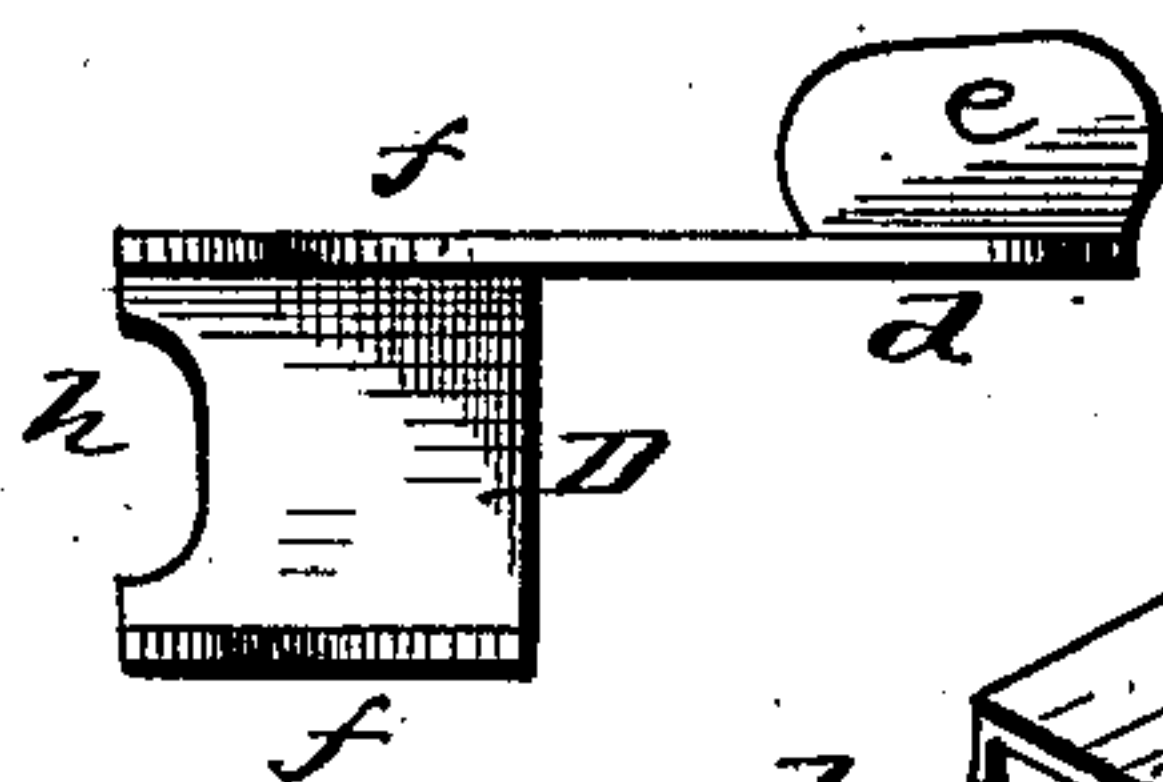
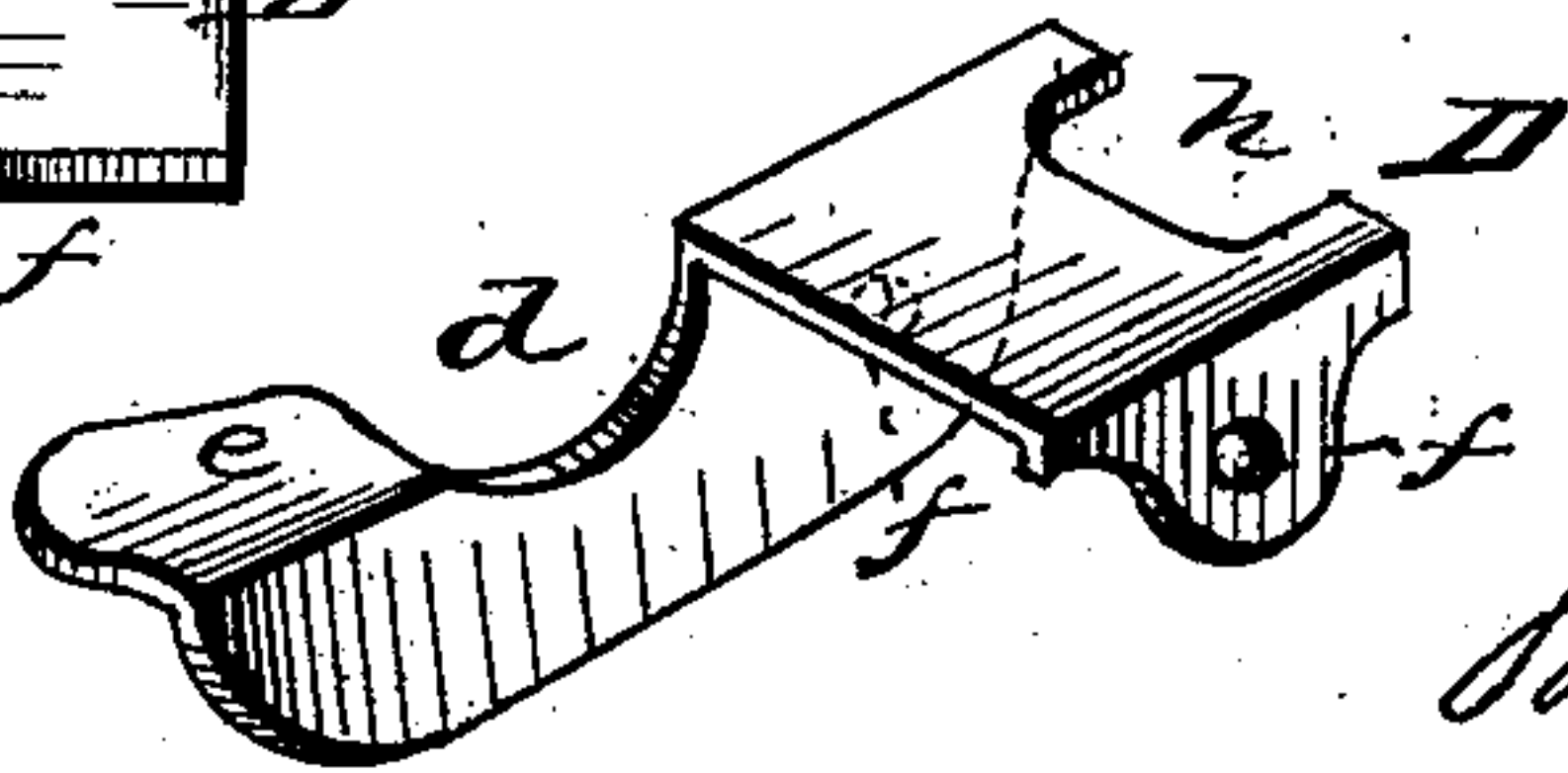


Fig. 3.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

THOMAS A. MACAULAY, OF NEW YORK, N. Y.

TENSION-RELEASE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 273,562, dated March 6, 1883.

Application filed August 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. MACAULAY, of the city, county, and State of New York, have invented an Improved Tension Device for Sewing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

In removing the sewed fabric or article from a sewing-machine, the usual practice is, first, to pull off from the tension a sufficient length of thread to enable the fabric to be withdrawn without drawing upon the thread, after which withdrawal to cut the thread. This operation of pulling the thread against the force of the tension often breaks the thread, and if the fabric should be drawn any farther than the length of thread previously set free there is again a liability to break the thread. By my improved tension device the tension may be released without strain or injury to the tension-spring, thereby allowing the thread to be pulled freely from the spool while removing the fabric from the machine, and without breakage.

In the accompanying drawings, Figure 1 represents a side view of my improved tension device as applied to the arm of a sewing-machine; Fig. 2, a similar view, but showing the parts of the tension device in position for releasing the tension, and thereby allowing the fabric to be withdrawn from the machine without hindrance from the tension and without liability to break the thread; Fig. 3, a top view, and Fig. 4 an under side view, of the notched and hinged tension-plate which forms one part of my invention; Fig. 5, a top view of the tension-plates and their adjuncts.

Like letters designate corresponding parts in all of the figures.

Let A represent a portion of a sewing-machine arm on which my improved tension device is mounted. An upper spring or elastically-yielding tension-plate, B, of any suitable form or construction, is secured to a boss or projection, *a*, of the arm A by a thumb-screw, C, the rear end of said plate bearing on another boss or projection, *b*, of the arm, while the other end of the plate presses down upon a counter-plate, D, between which and the

spring-plate the thread passes in the usual way, and is compressed with the requisite force to produce the proper tension by the thumb-screw C pressing down the middle of the plate, there being sufficient space between the plate and the attaching-boss *a* to allow all the downward curvature and pressure ever required. The lower or counter plate, D, is hinged or pivoted to another projection, *c*, of the arm A by means of ears or bearings *f f*, through which the pivot-pin *g* extends, as well as through the projection *c*, as shown, or otherwise, in a suitable or equivalent manner. One of the ears or bearings *f* is extended downward, as at *d*, (or a suitable projection otherwise extends down from the plate,) and is preferably bent round into a nearly horizontal position, as shown, suitable for reaching to and moving by the hand of the operator. The forward edge of the plate D is suitably rounded or curved, as indicated, to allow the plate, as it is rocked on its pivot, to bear upward against the spring-plate B and lift it somewhat, as shown in Fig. 2; and this edge of the plate D is notched, as shown in Figs. 3 and 4, at *h*, so that when the plate is turned into the position for lifting the plate B, as shown in the said Fig. 2, the thread lying centrally over the said plate D will be in the notch thereof, and consequently be entirely free from pressure and tension, the adjacent pressure-surfaces of the two plates then being separated. Thus at the time no impediment is offered to the drawing of the thread from its spool. On letting go the handle-projection *d* the spring-pressure of the upper plate, B, immediately brings back the two plates into parallelism and thread-compressing position, as shown in Fig. 1.

In this as would be in any spring tension-release it is important that a limit be placed to the extent to which the spring is retracted in releasing the tension. I have effected this purpose, and have represented, in connection with my tension-release, a stop, *i*, which limits the downward movement of the handle-lever *d*. Fig. 2 shows the said lever as depressed into contact with the stop, and of course it cannot be depressed any farther, and so no undue strain can come on the spring-plate B.

Any unessential changes in the foregoing

construction may be made, provided the essential device and its proper operation be retained. This application is a renewal and direct continuance of a part of my application for improvements in sewing-machines filed March 8, 1880, No. 4,539, and struck out of said application by amendment of even date with the filing of this application, as required by the Commissioner's decision.

10 What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a sewing-machine tension, the combination of a pivoted notched tension-plate, D, with a spring-counter-plate, B, and a suitable device for tilting the notched plate D to release the thread from tension, substantially as and for the purpose herein specified.

2. The combination of the pivoted notched tension-plate D, provided with the handle-lever *d*, the counter-plate B, and screw C, substantially as and for the purpose herein specified.

3. The combination of the pivoted notched tension-plate D, provided with a handle *d*, spring counter-plate B, and a stop, *i*, to limit the movement of the plate D, substantially as and for the purpose herein specified.

4. In combination with a counter-tension plate, B, a pivoted or rocking tension-releasing plate, D, provided with means, in connection with the said counter-tension plate, for permitting the release of the thread, and with a handle for operating the said releasing-plate, substantially as and for the purpose herein specified.

35 5. A tension-releasing plate, D, having a pivot or bearings for allowing it a tilting or rocking movement, and adapted to be applied to the arm or other part of a sewing-machine in operative connection with a counter-tension plate, and provided with means for permitting the release of the thread, and with a handle for effecting the release of the thread, substantially as and for the purpose herein specified.

45 6. In combination with a counter-tension plate, a pivoted-lever tension-plate provided

with means, in connection with the said counter-tension plate, for permitting the release of the thread, and with a handle for operating it to release the thread, for the purpose herein specified. 50

7. In combination with a counter-tension device and a projection, *c*, the pivoted tension-plate, D, having a lever, *d*, for operating the plate to release the thread, substantially as and for the purpose herein specified. 55

8. A lever tension-plate adapted for use with a counter-tension device, and having a handle for operating it to release the thread, substantially as and for the purpose herein specified.

9. In combination with a counter-tension device, a lever tension-release plate and a stop to limit the movement of the same, substantially as and for the purpose herein specified. 60

10. A tension-release plate having wings *f f* and handle *d*, pivoted to a support, *e*, in combination with a counter-tension plate and regulating device, substantially as and for the purpose herein specified. 65

11. In combination, a tension-release plate provided with a handle-lever, a counter-tension plate, and a regulating device, substantially as and for the purpose herein specified. 70

12. In a sewing-machine tension, the combination of a notched tension-release plate with a counter-tension plate and a regulating device, substantially as and for the purpose herein specified. 75

13. A tension-release adapted for use with sewing-machines, and provided with wings projecting from its face for attaching it to its support, and with a lever-handle integral therewith to operate it, substantially as and for the purpose herein specified. 80

The foregoing specification signed by me this 16th day of August, 1881.

THOS. A. MACAULAY.

Witnesses:

J. S. BROWN,
D. P. COWL.