

(No Model.)

J. F. HARDY.
TENSION FOR SEWING MACHINES.

No. 560,793.

Patented May 26, 1896.

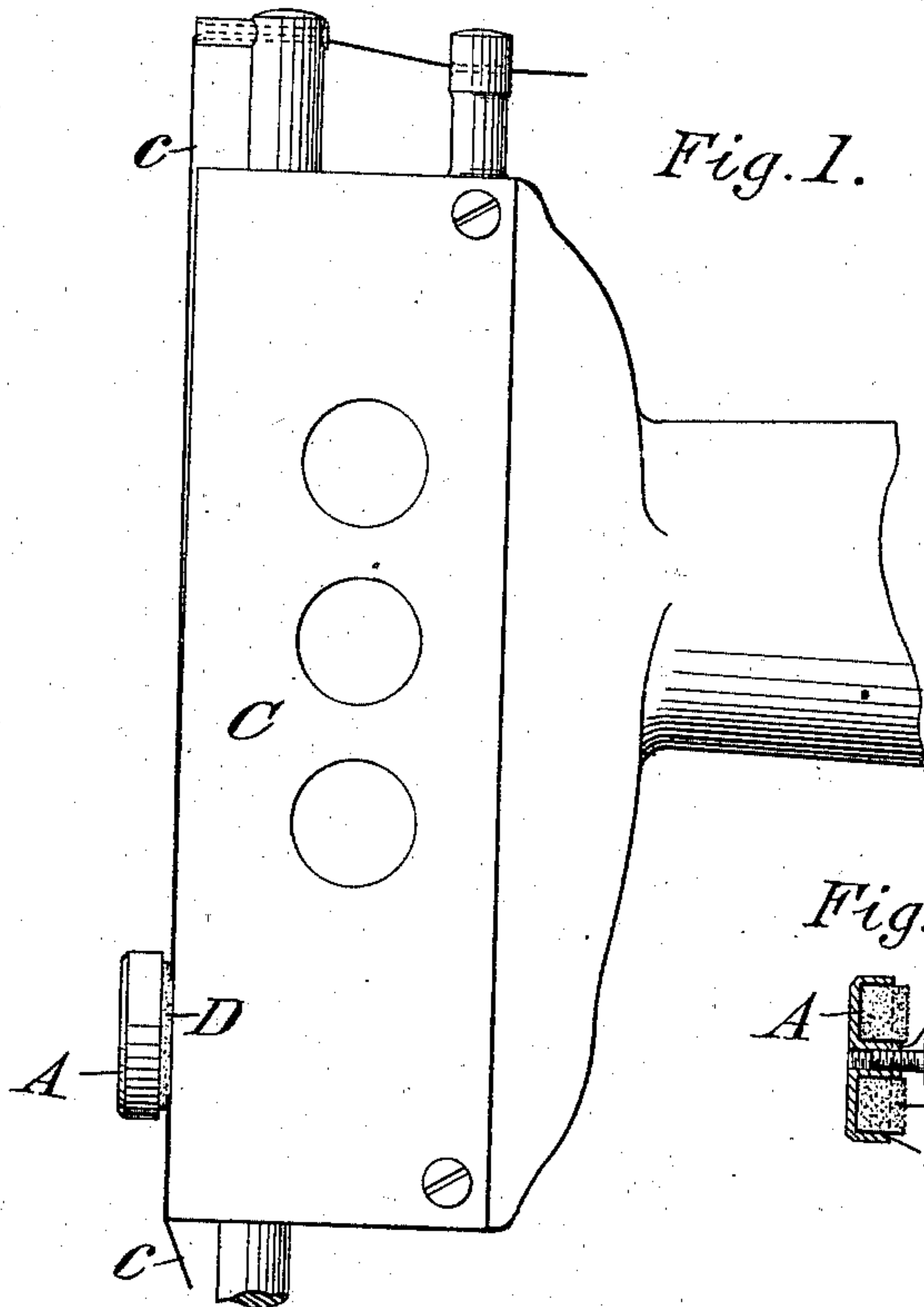


Fig. 1.

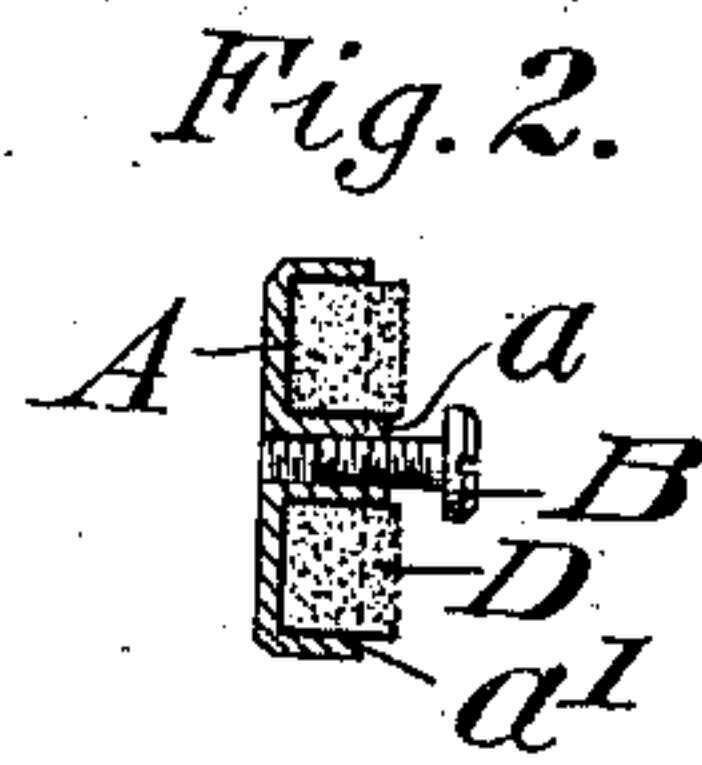


Fig. 2.



Fig. 3.



Fig. 4.

Witnesses:
C. E. Combs.
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UNITED STATES PATENT OFFICE.

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TENSION FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 560,793, dated May 26, 1896.

Application filed August 26, 1895. Serial No. 560,496. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. HARDY, of the city and county of New York, in the State of New York, have invented a new and useful
5 Improvement in Tensions for Sewing-Machines, of which the following is a specification.

My invention relates to an improvement in tensions for sewing-machines, in which the
10 thread, just before it is passed to the needle, is retarded in such a manner as to prevent it from rendering too freely under the sharp pull upon it of a rapidly-reciprocating needle, and at the same time permitted to yield read-
15 ily to the pull exerted upon it by the needle.

In the accompanying drawings, Figure 1 shows the head at the end of the overhanging arm on a sewing-machine in side elevation with the tension in position thereon. Fig. 2
20 is a view in detail, showing the tension device in transverse section. Fig. 3 represents the outside face of a tension device, and Fig. 4 the inside face.

The particular style of sewing-machine to
25 which the tension is applied is a matter of choice.

The tension device consists of a cylindrical cap A, provided with a central hub *a*, in which there is formed a screw-thread for the recep-
30 tion of a clamping-screw B. The inner end of the hub *a* projects toward the face of the machine-head C a little farther than the rim *a'* of the cap A, so that when the cap A is drawn toward the head C until the end of the
35 hub *a* engages the face of the head C there will be left a space between the edge of the rim *a'* and the face of the head C for the passage of the thread *c*. The interior of the cap A is filled with felt D, the inner face of which
40 projects flush with or a little beyond the inner end of the hub *a*, so that when the end of the hub *a* is drawn into contact with the face of the head C the felt D will rest with its face engaging the face of the head C with more or
45 less pressure. The thread *c* passes between the face of the felt D and the smooth metallic

face of the head C. It is caught by the fibers of the felt, which, like so many delicate fingers, tend to retard it and yet permit it to be drawn without undue hindrance. As distin-
50 guished from the tension in which two smooth surfaces are made to engage the thread, the felt has a tendency to adapt itself to the irregular form of the exterior of the thread, so as to hold it without pinching it, thereby pre-
55 venting its tendency to kink and at the same time prevent it from rendering the instant the pull from the needle ceases. The nature of the felt is also such that the tension will remain substantially the same, even though
60 the thread varies slightly in its size, as it will readily adapt itself to such uneven form without producing an objectionable pinch, which is so liable to render a seam uneven
65 by drawing certain of the stitches more tightly than others, and it prevents the still more objectionable annoyance of breaking the thread. It is not liable to break or produce sharp edges or get out of order, and when, for
70 any cause, it becomes worn the felt may be replaced by new felt at a very slight cost.

While I have mentioned felt as the material with which the cap is to be filled, I wish it to be understood that a mass of fibrous material
75 other than felt which will present a yielding fibrous surface to engage the thread may be employed instead of the felt, the object being to present numerous fibers, such as wood fibers, in intimate contact with the thread.

What I claim is—

80 The tension device, comprising the cap having a central hub extending inwardly farther than the outer rim of the cap, felt surrounding the said hub and extending flush with it to the exterior rim of the cap and
85 means for drawing the cap toward the face of the machine, substantially as set forth.

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Witnesses:

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