

(No Model.)

I. HEER.
THREAD TENSION DEVICE.

No. 605,101.

Patented June 7, 1898.

Fig. 1.

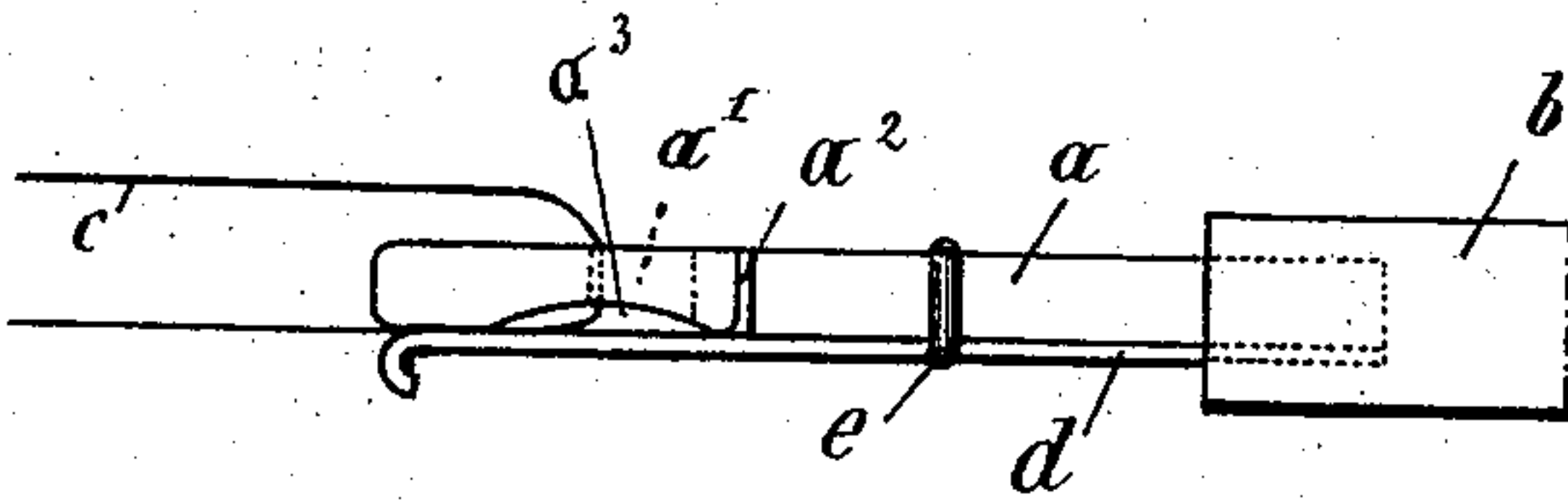
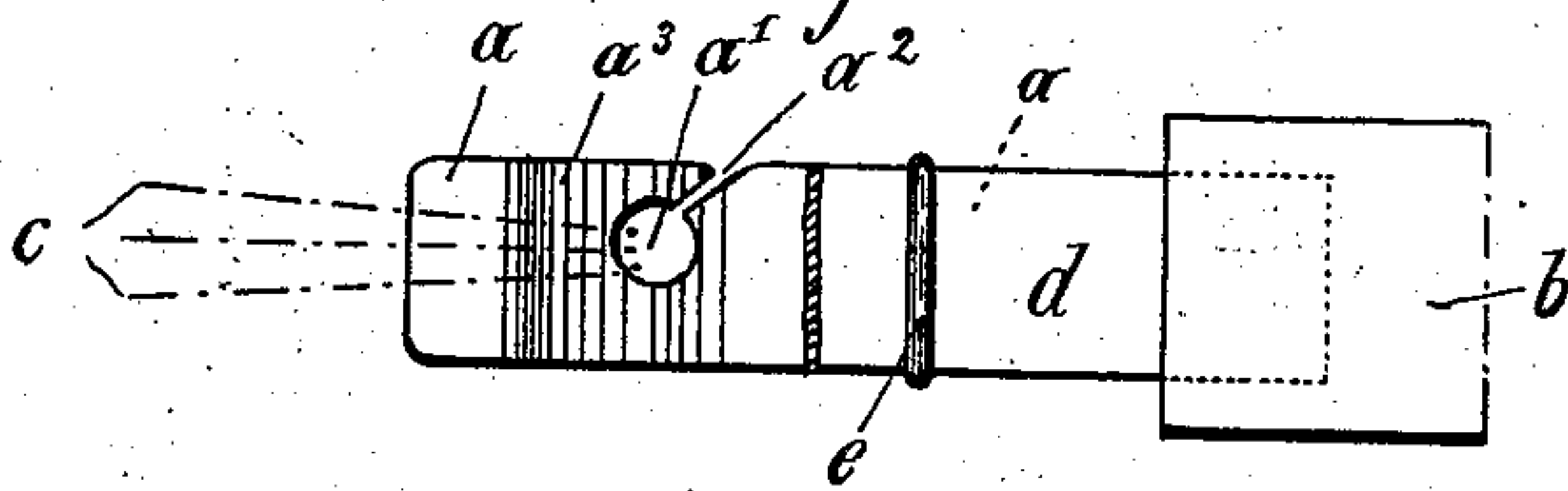


Fig. 2.



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UNITED STATES PATENT OFFICE.

ISAK HEER, OF ZURICH, SWITZERLAND.

THREAD TENSION DEVICE.

SPECIFICATION forming part of Letters Patent No. 605,101, dated June 7, 1898.

Application filed March 30, 1897. Serial No. 629,954. (No model.) Patented in France July 24, 1896, No. 258,320; in Switzerland August 26, 1896, No. 12,858; in Germany August 28, 1896, No. 92,002; in Italy September, 1896, LV, 42,290, and in Austria October 24, 1896, No. 46/4,272.

To all whom it may concern:

Be it known that I, ISAK HEER, a citizen of the Republic of Switzerland, residing at Zurich, in the canton of Zurich, Republic of Switzerland, have invented certain new and useful Improvements in Thread Tension Devices, of which the following is a specification.

Patents have been granted for this invention in Switzerland, No. 12,858, dated August 26, 1896; in Germany, No. 92,002, dated August 28, 1896; in France, No. 258,320, dated July 24, 1896; in Italy, LV, 42,290, dated September, 1896, and in Austria, No. 46/4,272, dated October 24, 1896.

This invention relates to improved means for use in textile machinery with a view to the maintenance of the threads at a regulated and uniform tension.

It is a recognized fact that in the manufacture of textile materials the maintenance of the threads at a regulated and uniform degree of tension during the progress of the various operations, particularly those of passing the weft-threads through the fabric by means of a shuttle in a weaver's loom, or the winding, "threading," or similar processes to which textile material or fiber is subjected, plays an important part in the attainment of excellence in the quality of the finished product. Many attempts have accordingly been made with a view to bringing thread tension as near to perfection as possible.

The objects of my invention are to so construct a tension device of the character described that its component parts shall be few in number, and simple in form, and capable of being readily assembled, and that its tension may be readily and easily adjusted. I accomplish these objects by the means hereinafter specified, and set forth more particularly in the claim.

A thread tension device constructed in accordance with the present invention consists, mainly, of a rigid flat bar formed with a guide-eye having a gap for the introduction of the thread or threads and a feather-spring adapted to exercise controllable pressure upon the said bar, the said spring affording the necessary frictional pressure upon the threads which pass through the eye of the bar.

Such being the nature of my invention the following is a complete description of same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, and Fig. 2 a plan of the device.

Like letters of reference refer to corresponding parts.

a represents a rigid flat bar which serves partly as support and partly as guide for the thread or threads. That portion of bar *a* which serves as support may be straight or curved in accordance with the character and construction of the machine to which it is to be attached. In the device illustrated in the drawings it is attached to a shank *b*. The portion of bar *a* serving as guide for the thread or threads is straight and has an eye *a'* for guiding one or more threads *c* and an open slit *a''* for admitting the thread or threads to eye *a'*.

Upon the face of the flat bar *a* the flat spring *d* is secured, the bar and spring jointly serving to apply tension to the thread or threads as they pass between the bar and spring. Where more than one thread is stretched, all the threads have thus an equal degree of tension applied to them.

In order to increase or diminish the degree of tension, the apparatus is fitted with a regulating or controlling device, preferably consisting of a loop or "keeper," such as *e*, embracing both the bar and the spring and capable of being shifted either backward or forward to the desired extent. When the keeper or runner *e* is shifted forward, the threads will be stretched more tightly, the reverse result ensuing when it is moved backward.

If where the thread emerges from the eye *a'* the edge of the latter be sharp, the thread is liable to be cut or broken, particularly if any comparatively thick or knotty part occur in it. In order to obviate this risk, the side of the bar *a* facing the spring is formed with a curving recess communicating with eye *a'*, so that the thread reaches the point at which the frictional tension is applied gradually instead of suddenly. Said curving recess is indicated by *a'''*. The same extends forward

from eye a' toward the free ends of spring d and bar a . The free end of said spring is bent in the form of a hook, so as to guard against the runner e becoming detached after
5 the parts have been properly assembled.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, what I claim is—

10 In a tension device for threads, the combination with the rigid bar a having eye a' and open slit a^2 , of the flat spring d secured fixedly at one end and adjustably at the other end

to the bar a and the keeper or runner e embracing bar and spring and capable of being 15 shifted along the same, and means for confining said runner in engagement with said bar and said spring, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in the 20 presence of two subscribing witnesses.

ISAK HEER.

Witnesses:

HERMANN KIRCHHOFFER,
H. LABBART.