July 10, 1923. 1,461,536

J. O. McKEAN

YARN TENSION DEVICE

Filed Oct. 21, 1921

Fig. 1.

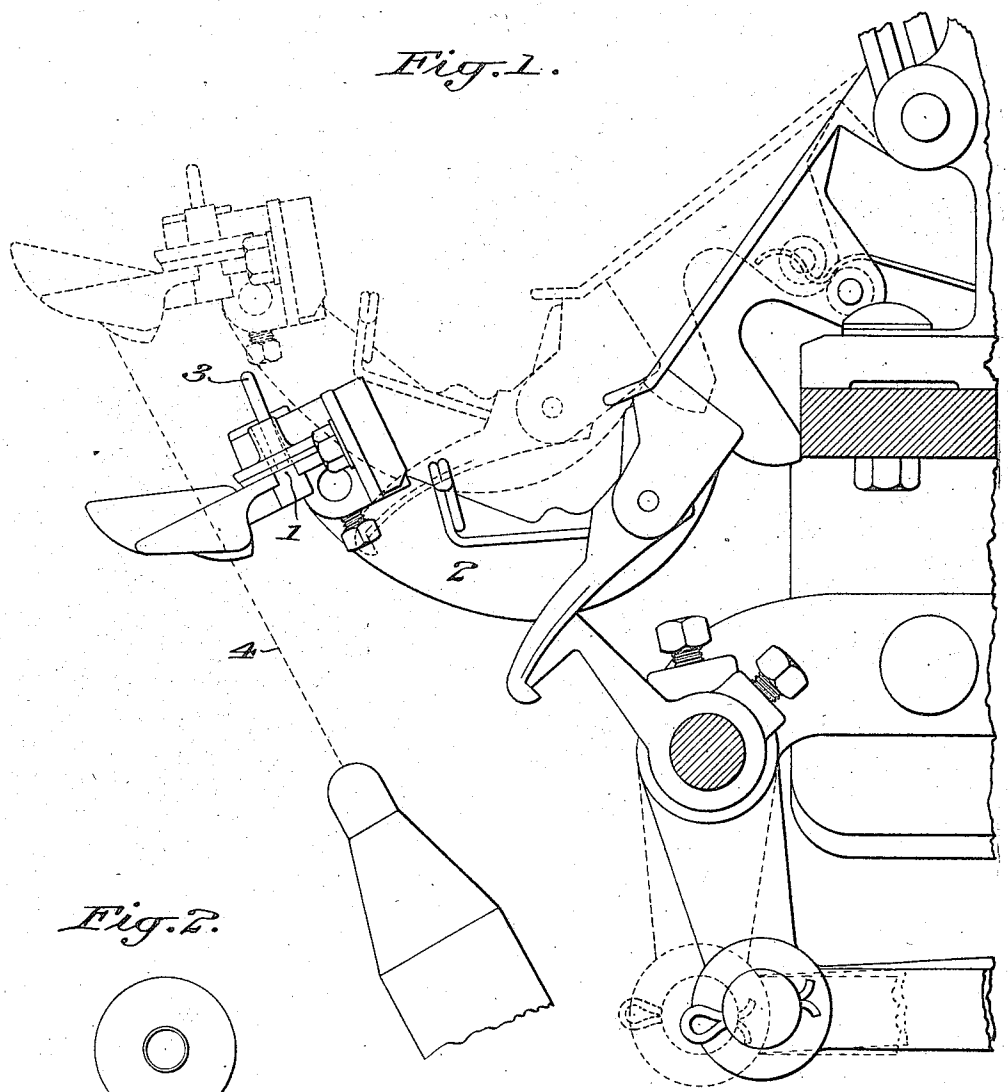


Fig. 2.

Fig. 3.

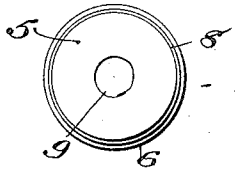


Fig. 4.

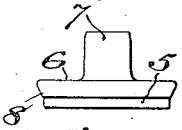


Fig. 5.

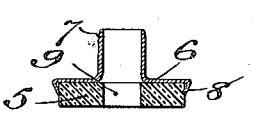


Fig. 6.

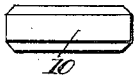
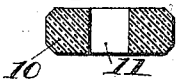


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN O. McKEAN, OF WESTFIELD, MASSACHUSETTS, ASSIGNOR TO FOSTER MACHINE COMPANY, OF WESTFIELD, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

YARN-TENSION DEVICE.

Application filed October 21, 1921. Serial No. 509,249.

To all whom it may concern:

Be it known that I, JOHN O. McKEAN, a citizen of the United States, and resident of Westfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Yarn-Tension Devices, of which the following is a specification.

In stop motions, in connection with which a tension device is used which includes a loosely mounted gravity operated tension disk, the disk has, so far as known, been made of cast iron or machine steel, presenting a hard metal yarn contact surface. Therefore, when the stop motion operates, the dropping of the arm which carries the tension device causes a sharp hammer blow of the hard metal yarn contact surface of the disk on the yarn located between the disk and its support, frequently cutting the yarn in two.

The object of my invention is to prevent this cutting action of the gravity operated tension disk, by providing a disk having a non-metallic surface contacting with the yarn, either by providing a built-up disk having an insert of non-metallic material, such as hard fibre, or by providing an integral disk composed of hard fibre.

Practical embodiments of my invention are represented in the accompanying drawings, in which—

Fig. 1 illustrates, in side elevation, the portion of a stop motion which carries the tension device, including my improved gravity operated loosely mounted tension disk, the parts being shown in dotted lines in their normal running position, and in full lines in their "knocked off" or "stopped" position.

Fig. 2 illustrates one form of the tension disk in top plan.

Fig. 3 illustrates the same in bottom plan.

Fig. 4 illustrates the same in side elevation.

Fig. 5 illustrates the same in vertical central section.

Fig. 6 illustrates another form of tension disk in side elevation.

Fig. 7 illustrates the same in vertical central section.

The tension device includes a suitable yarn support 1 carried by the swinging arm 2 of the stop motion, from which support 1 uprises a pin 3, as is usual. Loosely mounted on the pin 3 is a gravity operated tension disk which normally rests upon the yarn support 1. The yarn, indicated by 4, passes between the support 1 and the gravity operated tension disk.

In the built-up form of tension disk, illustrated in Figs. 1 to 5 inclusive, a non-metallic insert 5 is permanently secured to the face of a lateral flange 6 extending from a hollow sleeve 7. This is preferably accomplished by spinning the edge 8 of the flange 6 into the periphery of the insert 5. This insert is provided with a central hole 9 in alinement with the bore of the sleeve 7.

In the integral form of tension disk, illustrated in Figs. 6 and 7, the disk 10 is composed of non-metallic material, and it is provided with a centrally arranged hole 11 for loosely mounting the disk on the pin 3.

The non-metallic material which I have found suitable is hard fibre. By the term hard fiber disk I mean a disk composed of, for instance, compressed vegetable fibers which are preferably made by a process which comprises the addition thereto of chloride or zinc, and which hard fiber is of the general nature of the fiber used in connection with spigot washes and known as vulcanized fiber. By providing a hard fibre yarn contact surface for the tension disk, I have found that no amount of hammering blow, due to the operation of the stop motion, is sufficient to cut the yarn, thus rendering the tension disk particularly well adapted for use in connection with yarn tension devices which are mounted on stop motions where the tension devices are subjected to violent movements due to the operation of the stop motion.

It is evident that various changes may be made in the construction, form and material of the tension disks without departing from the spirit and scope of my invention; hence I do not wish to limit myself to the particular embodiments illustrated but

What I claim is:

1. A tension device for stop motions including a suitable yarn support carried by the stop motion drop arm, and a gravity operated non-metallic tension disc having substantially the softness of hard fibre, normally resting on said support.

2. A tension device for stop motions including a suitable yarn support carried by the stop motion drop arm, and a gravity op-

erated hand fibre tension disc normally resting on said support.

3. A tension device for stop motions including a suitable yarn support carried by the stop motion drop arm, and a gravity operated tension disc having a non-metallic surface having substantially the softness of hard fibre, normally resting on said support.

4. A tension device for stop motions including a suitable yarn support carried by the stop motion drop arm, and a gravity operated tension disc having a hard fibre surface normally resting on said support.

5. A tension device for stop motions including a suitable yarn support carried by the stop motion drop arm, a vertically disposed pin, and a gravity operated non-metallic tension disc having substantially the softness of hard fibre, loosely mounted on the pin and normally resting on said support.

6. A tension device for stop motions including a suitable yarn support carried by the stop motion drop arm, a vertically disposed pin, and a gravity operated hard fibre tension disc loosely mounted on the pin and normally resting on said support.

7. A tension device for stop motions including a suitable yarn support carried by the stop motion drop arm, a vertically disposed pin, and a gravity operated tension disc loosely mounted on said pin, said disc having a non-metallic yarn contact surface having substantially the softness of hard fibre, normally resting on said support.

8. A tension device for stop motions including a suitable yarn support carried by the stop motion drop arm, a vertically disposed pin, and a gravity operated tension disc loosely mounted on said pin, said disc having a hard fibre yarn contact surface normally resting on said support.

In testimony, that I claim the foregoing as my invention, I have signed my name this 13th day of Oct., 1921.

JOHN O. McKEAN.