H. KOCH AND H. MÜLLER.

REEL FRAME.

APPLICATION FILED APR. 21, 1920.

1,421,497. Patented July 4, 1922.

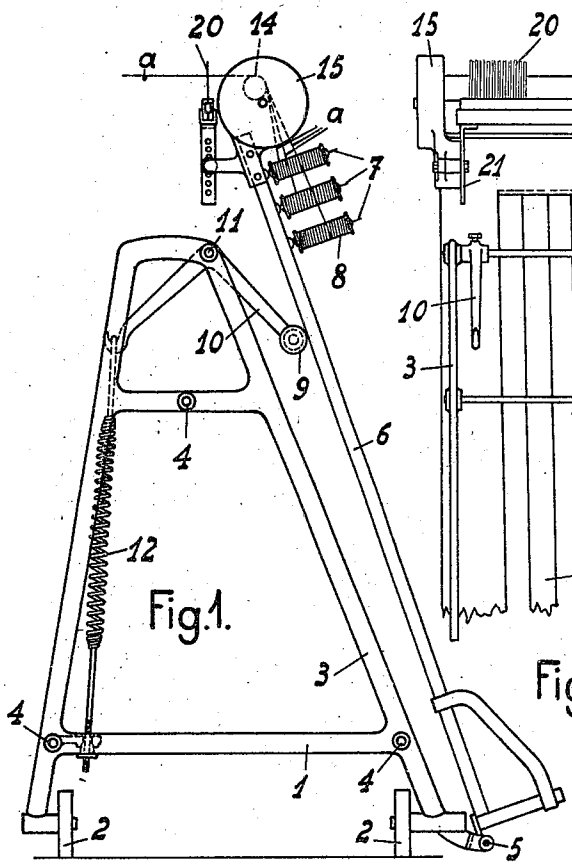


Fig.1.

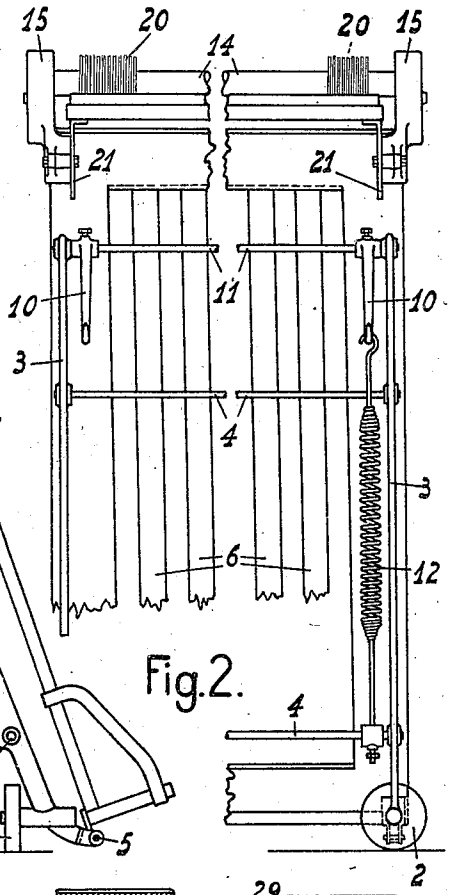
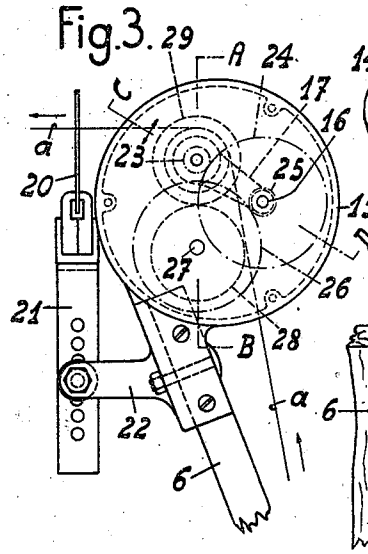


Fig.2.

Fig.3.



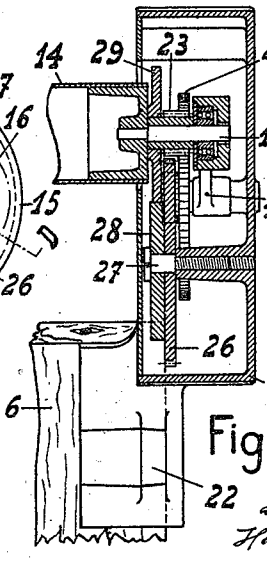


Fig.4.

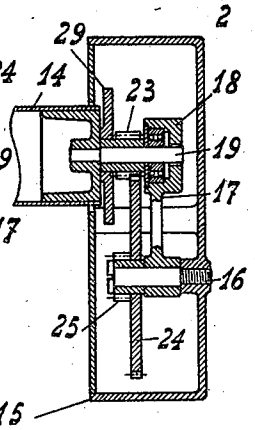


Fig.5.

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UNITED STATES PATENT OFFICE.

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REEL FRAME.

1,421,497. Specification of Letters Patent. Patented July 4, 1922.

Application filed April 21, 1920. Serial No. 375,574.

To all whom it may concern:

Be it known that we, HANS KOCH, engineer, a citizen of the Swiss Confederation, residing at Dietikon, Canton Zurich, Switzerland, and HANS MÜLLER, engineer, a citizen of the Swiss Confederation, residing at Dietikon, Canton Zurich, Switzerland, have invented new and useful Improvements in Reel Frames, of which the following is a description.

The present invention relates to a new and improved reel-frame such as are used in the textile industry to reel-off threads from a plurality of reels at the same time and to lead the same through a common reed.

One object of the invention is to provide an improved device which allows a great speed in unreeling without damaging and breaking the threads.

Another object of the invention is to provide an automatic shifting of the threads while passing the reed to prevent the threads to work cavities in the teeth of the reed by running all the time over one and the same spot.

Other objects of the invention relate to the provision of minor parts cooperating with the devices above noted and to details of construction, all of which will be more clearly set forth in the following specification.

With the above objects in view the invention resides in the parts and combination of parts hereinafter described and particularly set forth in the claims appended hereto.

In the accompanying drawing one form of construction is shown by way of an example in a diagrammatical manner.

Fig. 1 is a side elevation of the frame.

Fig. 2 shows parts thereof in a front view.

Fig. 3 illustrates in a side view the device for dislocating the roller over which the threads run.

Figs. 4 and 5 are sections taken on lines A—B and C—D of Fig. 3.

The new device comprises a frame 1 running on rollers 2 and consisting of shields 3 interconnected by bars 4. The frame 1 has at its lower end a bar 5 on which the reel-carrier 6 is rotatably mounted by suitable hinges. The upper end of carrier 6 is supported by rollers 9 rotatably mounted on the ends of two double armed levers 10. The levers 10 are fastened on a shaft 11 rotatably mounted in the frame 1, each lever 10 is connected by a coiled spring 12 to one of the bars 4 at the lower end of the frame 1. The springs 12 tend to hold the carrier in the position shown in Fig. 1. On the carrier 6 pins 7 are arranged in regular rows equally spaced apart in the well known manner (only three pins are shown in the drawing). On each pin 7 a reel 8 is rotatably mounted, the threads *a* of all the reels pass over a hollow roller 14 arranged above the carrier 6 in front of a reed 20. The roller 14 projects at each end into a casing 15 screwed on to the top end of the carrier 6. At each end the roller 14 is provided with a bolt 19 running co-axial to the roller and journalled in a bearing 18 forming part of a lever 17 pivoted on a stud 16 of the casing 15. To the bolt 19 a pinion 23 is fastened which pinion is in mesh with a spur wheel 24 rotatably mounted on stud 16. The gear 24 is rigidly connected to a small toothed gear 25 engaging a toothed gear 26 rotatably mounted on a bolt 27 screwed into a wall of the casing 15. Rigidly connected to said gear 26 is a disk 28 eccentrically to said bolt 27 and on the disk 28 rests a disk 29 loosely mounted on the pin 19. If the roller 14 is rotated by the threads *a* drawn from the reels 8 the rotary motion of the roller 14 is transferred to the gear 26 which lifts by the eccentric 28 the roller 14 up and down swinging with the levers 17 round the studs 16. As the roller 14 changes its position in vertical direction the threads *a* pass the reed 20 at different places and the threads are prevented from wearing cavities etc. in the teeth of the reed. The reed 20 is held by arms 21 adjustably mounted in a projection 22 of the casing 15.

If the threads are drawn at a great speed the carrier 6 will yield to any excessive pressure tensioning thereby the springs 12. Breaks of the threads are thus obviated.

A yielding support of the carrier 6 may be otherwise attained, the springs may be replaced by weights.

Instead of moving the roller up and down we may provide a device for moving the reed up and down while the roller 14 is left stationary.

Other changes in form and construction of parts may be made without departing from the spirit of our invention.

What we claim and wish to secure by Letters Patent is:

1. A reel frame comprising a frame, a reel carrier mounted for movement in response to the tension of the threads, a reed and a thread guiding roller carried by the reel carrier, and yieldable means tending to restrain the reel carrier from such movement.

2. A reel frame comprising in combination a frame, a reel carrier movably mounted on said frame springs acting on said carrier, a reed, a roller rotatably mounted for guiding the threads drawn from the reels means actuated by said roller to change the place of passage of the threads through the reed.

3. A reel frame comprising in combination a frame, a reel carrier movably mounted on said frame springs acting on said carrier, a reed, a roller rotatably mounted for guiding the threads drawn from the reels movable bearings for said roller a gearing actuated by said roller to move the bearings up and down substantially as shown and described and for the purpose set forth.

4. A reel frame comprising a frame, a reel carrier mounted on the frame for swinging movement, a reed and a thread guiding roller carrier by the reel carrier, a lever mounted on the frame and connected to the reel carrier, and yieldable means acting on the lever to cause the latter to yieldingly hold the reel carrier against the tension of the threads.

5. A reel frame comprising a frame, a reel carrier mounted for movement in response to the tension of the threads, a reed and a thread guiding roller carried by the reel carrier and adjustable yieldable means tending to restrain the reel carrier from such movement.

In witness whereof we affix our signatures.

HANS KOCH.
HANS MÜLLER.