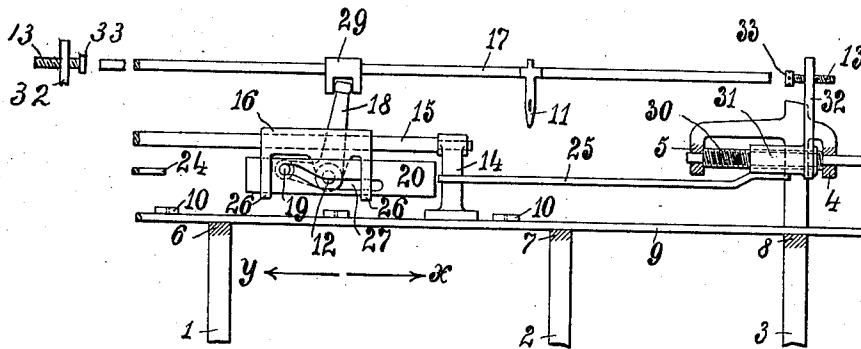


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 SPEED RETARDING DEVICE FOR THREAD GUIDE BARS.
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SPEED-RETARDING DEVICE FOR THREAD-GUIDE BARS.

1,023,694.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CARL WALTHER, a subject of the German Emperor, residing at Chemnitz, in the Kingdom of Saxony and
5 Empire of Germany, have invented certain new and useful Improvements in Speed-Retarding Devices for Thread-Guide Bars, of which the following is a specification.

In many cases in the construction of machines it happens that a heavy object continually moves to and fro on a rectilinear way. If this object at the end of its course runs against a stationary body a serious shock is caused and consequent damage results to one or both bodies.

The purpose of the present invention is to avoid this violent contact of parts by retarding the speed of the moving element in the last moment of its motion.

10 In the accompanying drawing an instance of the construction of the invention in a straight knitting frame is fragmentarily illustrated.

The object which is moved to and fro, and whose movement is to be retarded at the end of its traverse, is the thread guide bar of a knitting machine 17, to which the thread guides 11 are fixed. As is known the thread guide 11 must be continually
30 shifted to and fro in the two directions indicated by x and y . In the last moment of the motion the rod 17 runs with the right end against the cap 33 of the screw 13, and in its reverse movement its left end strikes
35 the cap of the screw 13'. But because, as is known, a knitting frame is very long, the left end of the mechanism could not be illustrated in full in the drawing.

The stationary parts of the frame of the machine are designated in the drawing by the numerals 1, 2, 3. In the bearings 6, 7, 8 of which the bar 9 which is the slur bar of a knitting machine can be shifted to and fro in the directions indicated by the arrows x ,
45 y . The parts 14 are fixed to the bar 9, of which in the drawing only one is illustrated. The bar 15 is fixed to the arm 14. The bar 15 must therefore make exactly the same motions as the reciprocating bar 9 which has
50 a constant traverse.

On the bar 15 rests a friction box 16, which is not rigidly connected with the bar 15, but sticks so fast on the bar 15, that it is taken along with it by friction. Only if
55 the friction box 16 is held fast will the bar 15 be able to continue to move alone. From

the friction box 16 an arm 18 extends upward which engages a catch 29, which is rigidly fixed to the bar 17. If the bar 9, therefore, is moved to and fro in the directions x , y , this motion is transferred to the rod 17 by the parts 15, 16, 18. But if the bar 17 has a variable movement, it encounters the stop 33, the friction box 16 then slips on the rod 15, and the bar 9 can continue to move.

The difference between the arrangement known hitherto and the new invention is essentially founded on the fact, that the arm 18 and the slide 16 hitherto formed a single rigid piece, whereas a new mechanism 12, 19, 20 is now provided, which serves for retarding the motion of the rod 17 at the end of its run, and is described as follows. The slide 16 is provided with two loops 26, in which the slide-bar 20 is movable to and fro. The friction box 16 is furnished with a journal 12, in which the rocking crank lever 18 can swing. The crank lever 18 is furnished with a pin 19, which engages the curve-shaped slot 27 of the slide-bar 20. To the right and to the left of the slide-bar 20 are arranged two rods 24, 25. If the slide 16 is moved to and fro in the direction of x , y , the slide bar 20 runs against the rod 24 to the left, and against the rod 25 to the right.

The screw 13 is adjustably fixed to the arm 32. The arm 32 and the rod 25 are fixed to a nut 31.

The mode of operation of the described mechanism is as follows. If the bar 9 is moved in the direction x to the right, the slide-bar 20 runs against the rod 25. The friction box 16 still continues to move with the same speed as the bar 9. But because the slide-bar 20 stands still, the pin 19 moves along the curve-shaped groove 27, and the lever 18 holds back the bar 17. The speed of the bar 17 is therefore retarded in this way. If the bar 17 runs with a very slow motion against the cap of the screw 33, the friction box 16 will slide on the bar 15, but the bar 9 will still continue to move.

Having now described my invention and in what manner the same is operated, what I claim is:

1. In a knitting machine, knitting devices including a reciprocating driver bar having a constant traverse, a thread guide bar, stops for said bar, means to vary the posi-

- tion of said stops to vary the strokes of said bar, a friction driven slide for reciprocating said guide bar from said driver-bar, a movable connection between said slide and said guide bar, and an additional stop carried by said stop carrying means to adjust said connection to permit the bar to lag behind the slide when the guide bar approaches the end of its traverse.
- 10 2. In a knitting machine, a slur bar having a constant reciprocating movement, a post on said bar, a horizontal bar carried by said post, a friction box on said horizontal bar, a slide bar 20 having a curved slot, a crank lever journaled in said friction box 15 whose lower end carries a pin engaged by said curved slot, a thread guide bar, a catch thereon engaged by the upper arm of said crank lever, an adjustable stop for said thread guide bar mounted on a nut movable 20 on a fashioning screw and another stop on said nut to limit the movement on said bar 20.
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."