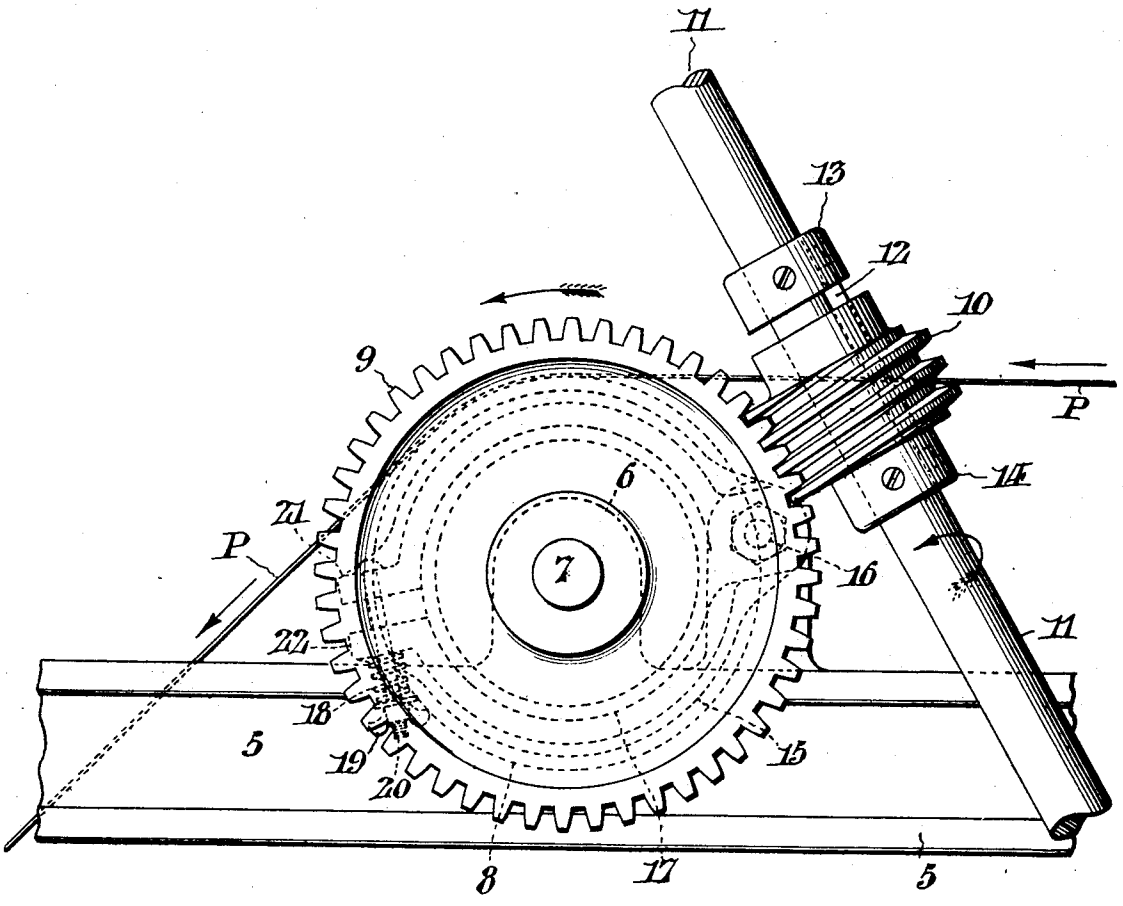
March 5, 1935. F. M. KAUFMAN 1,993,373

DOUBLE PILE FABRIC LOOM

Filed Nov. 10, 1933



WITNESSES:

John C. Bergner

Thomas W. Kerr Jr.

INVENTOR:

Frank M. Kaufman,

BY Fraser & Paul

ATTORNEYS.

Patented Mar. 5, 1935 1,993,373

UNITED STATES PATENT OFFICE

1,993,373

DOUBLE PILE FABRIC LOOM

Frank M. Kaufman, Merion, Pa., assignor to Collins & Aikman Corporation, Philadelphia, Pa., a corporation of Delaware

Application November 10, 1933, Serial No. 697,401

2 Claims. (Cl. 139—102)

This invention relates to looms such as are used in weaving double pile fabrics in which the pile is crossed transversely between two concurrently woven fabric layers and wherein the pile is subsequently cut to separate the two fabric layers. More specifically, my invention is concerned with means in connection with looms of the kind referred to for driving the rolls which feed the pile warps incident to the weaving.

In the operation of double pile fabric looms it is necessary upon failure or exhaustion of the weft, to reverse the drive for the purpose of finding a lost pick or ripping out so that the weaving may be resumed with preclusion of voids in the fabrics.

The aim of my invention is to provide a simple and reliable means whereby, upon initiation of the reversal in the drive of the loom, a definite amount of lost motion is permitted in the feed rolls for the pile warps, whereby the latter are slacked to facilitate the pick finding and the ripping out with consequent preclusion of the objectionable stop marks in the fabrics.

The drawing herewith shows a fragmentary view in side elevation of a loom conveniently embodying my improved drive means for the pile warp feed roll.

With more detailed reference to this illustration, 5 designates the frame of the loom, the same affording bearings 6 for the shaft 7 of the sand surfaced feed roll 8 whereby the pile warps P are drawn forwardly from the pile warp beam (not shown) as required incident to the weaving of pile fabric in the well known manner. Secured to the feed roll 8 at one end thereof is a toothed gear wheel 9 which meshes with a worm 10 on an inclined shaft 11. This inclined shaft 11 is driven normally in the direction indicated by the arrow thereon from the drive mechanism (not illustrated) of the machine, which mechanism may be of the usual reversible type. As delineated, the worm gear 10 is connected to the shaft 9 by a key or spline 12 with capacity for shifting longitudinally within the limits defined by a pair of collars 13 and 14 adjustably set in spaced relation on the shaft. The rotation of the feed roll 8 is yieldingly restrained by a brake means having the form of a split clamp band 15 which is anchored to the loom frame 5 at 16, and which bears on the circumferential surface of a drum 17 secured either to the roll or to the worm wheel 9. The braking pressure of the brake means is maintained by a spring 18 whereof the tension is regulatable by adjustment of a winged nut 19 on a threaded stud 20 joining the split ends 21, 22 of the clamp band 15.

During normal operation of the loom, the feed roll 8 is constantly rotated slowly counter-clockwise against the restraining action of the clamp band 15 through motion transmitted from the inclined shaft 11 by the worm 10 and gear wheel 9, the worm abutting all the while against the collar 14 on said shaft. If, in order to find a lost pick, or for the purpose of ripping out, the drive mechanism of the loom is reversed (with attendant reversal of the inclined shaft 11) the worm 10 will shift along the shaft 11 until it abuts against the collar 13 before reverse motion will be imparted to the feed roll 8. This action results from the holding of the gear wheel 9 through restraint imposed upon the feed roll 8 by the clamp band 15 with causation of a threading action between the worm and the teeth of the stationary wheel, whereby said worm is shifted upward on the shaft 11 until it abuts the collar 13 as above explained. In consequence, a definite amount of lost motion is permitted to take place between the feed roll 8 and the fabric take-up mechanism (not shown) of the loom before said mechanism is reversely driven so that the pile warps are slacked sufficiently to facilitate finding of the lost pick or ripping out as may be required. When the weaving is subsequently resumed, the slack in the pile warps is absorbed by the fabric take-up mechanism before the worm 10 slips back to the normal illustrated position to drive the feed roller 8.

I have thus provided a simple and reliable means for precluding the formation of stop marks in fabrics produced on double pile fabric looms.

Having thus described my invention, I claim:

1. The combination with the warp feed roll of a double pile fabric loom, of means to yieldingly restrain rotation of the roll in either direction, a toothed wheel on the roll, a drive shaft, and a worm on said drive shaft constantly in mesh with the toothed wheel, said worm having capacity for limited endwise sliding movement incident to reversal of the drive shaft, with provision of a corresponding amount of lost motion in the roll preparatory to impartation of reverse movement thereto.

2. The combination with the warp feed roll of a double pile fabric loom, of means to yieldingly restrain rotation of the roll in either direction, a toothed wheel on the roll, a drive shaft, and a worm on said drive shaft constantly in mesh with the toothed wheel, said worm being splined to the shaft with capacity for endwise sliding movement between stop collars adjustably set upon said shaft, whereby, upon initiation of reverse movement to the drive shaft, a definite amount of lost motion is permitted in the roll preparatory to impartation thereto of reverse movement.

FRANK M. KAUFMAN.