

C. H. COLLINS.
MATCHING DEVICE FOR WEAVING MACHINES.
APPLICATION FILED MAY 26, 1911.

1,053,279.

Patented Feb. 18, 1913.

2 SHEETS—SHEET 1.

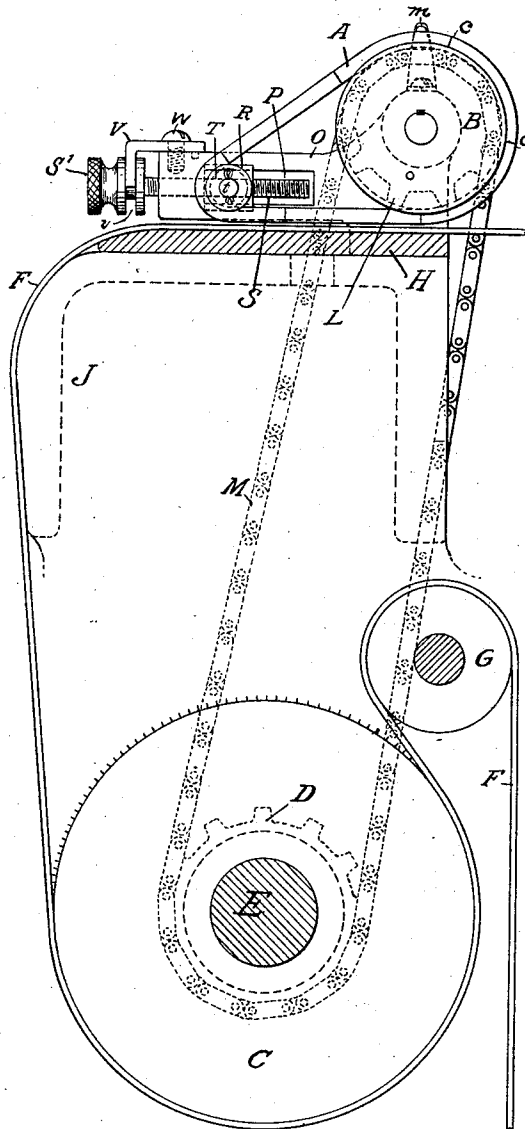


Fig. 1.

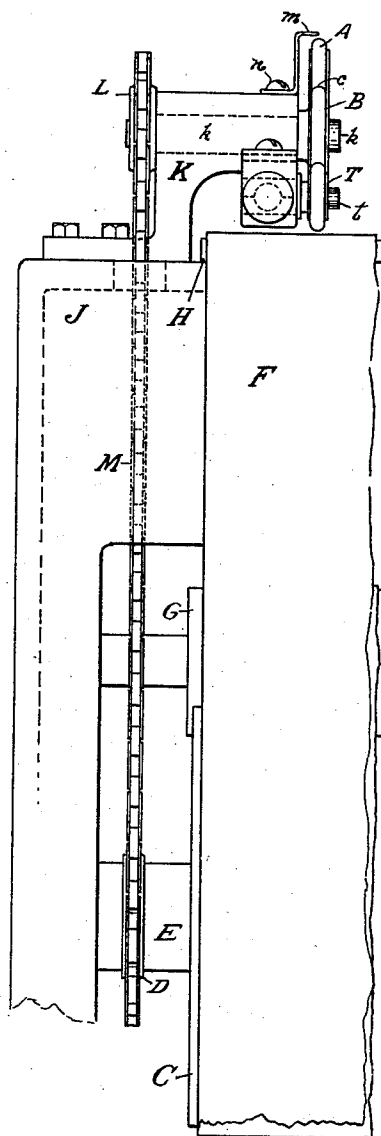


Fig. 2.

WITNESSES:
Lottie Prior.
Berlah Carle.

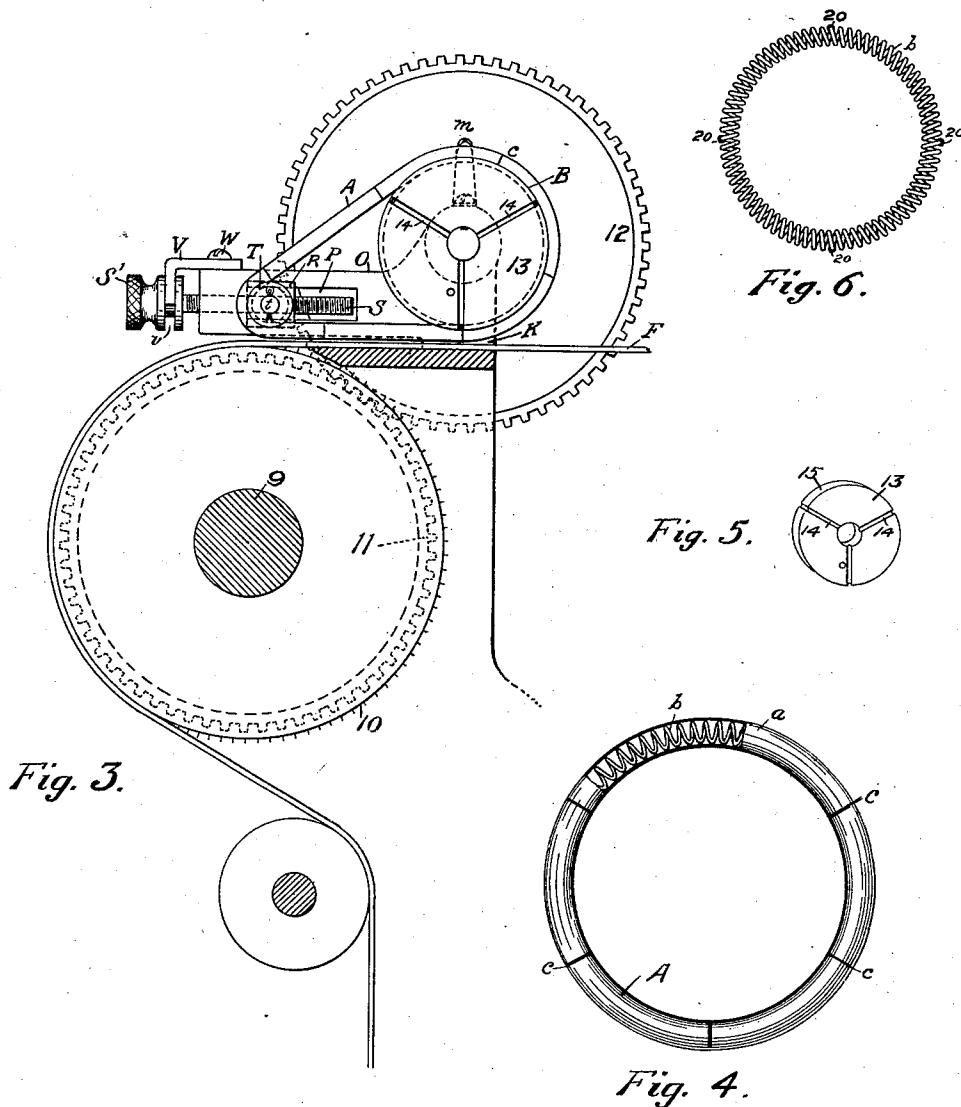
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UNITED STATES PATENT OFFICE.

CHARLES H. COLLINS, OF ALBANY, NEW YORK.

MATCHING DEVICE FOR WEAVING-MACHINES.

1,053,279.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed May 26, 1911. Serial No. 629,636.

To all whom it may concern:

Be it known that I, CHARLES H. COLLINS, a citizen of the United States of America, residing at No. 10 Jay street, in the city of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Matching Devices for Weaving-Machines, of which the following is a specification.

My invention relates to devices for matching carpets, rugs and articles containing patterns, and the object of my invention is to provide an adjustable means for indicating to the operator whether or not the pattern is being woven or constructed in proper relation in the general design; together with such elements and combinations as are hereinafter more particularly set forth and claimed.

I accomplish these objects by means of the mechanism illustrated in the accompanying drawings, in which:

Figure 1 is a front elevation of my invention. Fig. 2 is an end elevation of my invention. Fig. 3 is a front elevation of a modified form of my invention. Fig. 4 is a detail view, partly broken away, of the band, A. Fig. 5 is a perspective view of the cap adapted to be placed on the wheel, B. Fig. 6 is a plan of a modified form of band.

Similar letters refer to similar parts throughout the several views.

On a spike roller, C, I place a hub provided with a sprocket wheel, D, the spike roller being mounted in the usual manner upon a suitable shaft, E. The carpet, rug or other material, F, passes from the table, H, to and partially around the spike roller, C, to the roller, G in the usual manner. Mounted on the frame J, of the machine, I place the bracket, K, in which is mounted the sprocket wheel, L carrying a sprocket chain, M, passing over the sprocket wheel, D, on the shaft E, carrying the spike roller, C. On the shaft *k*, to which the sprocket wheel, L, is fastened, I place the wheel, B, which is mounted to revolve with the shaft, *k*, close to but separated from the carpet or other material, F, as shown in Figs. 1 and 2. Attached to the bracket, K, and extending above and preferably partially over the wheel, B, is an indicating arm, *m*. This may be made, as shown in Figs. 1, 2 and 3, of a thin metallic plate secured to the top of the bracket, K, by a screw, *n*, and bent

at right angles to the shaft, *k*, and then bent at right angles and extending over the periphery of the wheel. But I do not limit myself to any particular means of erecting a stationary indicating point. The bracket, K, is provided with the arm, O, the sides of which are open as at P, forming a way for the block, R, to move in a horizontal plane. Through the block, R, and for the purpose of moving the same within the way, P, I insert the threaded bolt, S. By the operation of the bolt meshing with threads in the block, R, I may move the block longitudinally, in a horizontal plane, to and from the wheel, B. To the block, R, I mount the wheel, T, running loosely on the spindle, *t*, extending into the block. Around the wheels, B and T, I place the expansible band, A, which may be constructed as illustrated in Fig. 4 of a rubber tubing, *a*, enveloping a spiral spring, *b*. On the tubing, *a*, I place a series of marks, *c, c*, equidistant from each other. The marks, *c, c*, are to be read by the operator in connection with the stationary arm *m*, for the purpose of determining whether the machine is weaving the pattern in proper time relative to the design to be formed, *i. e.*, whether it is making the pattern too slowly or too fast, or whether it is quite right, thus enabling the operator to change the speed of the yarn weaving in to correspond to the requirements.

It is apparent that the wheel, B, will rotate in unison with the spike roller, C, feeding the carpet, since it is operated by the sprocket wheel, D, on the shaft, E, to which the spike roller is secured. It is necessary to provide for adjusting the band A, on the wheel, B, because the length of the pattern is frequently changed. The spike roller changes because the spikes become worn and dull and those of one loom will sometimes operate differently from those of another. This makes it necessary to change the spike rollers so that all will act the same if any other matching device, driven from the spike roller shaft, is employed. It is for the purpose of being able to adjust my matching device to every possible change in the spike roller without changing that roller that I provide the expansible band and its connections. I have provided for adjusting the band, A, so that the indicating marks, *c, c*, would read properly in reference to the indicating arm *m*, when the speed of

the moving carpet, F, was changed. By placing the wheel, T, and extending the expansible band, A, over it as well as over the wheel, B, I may regulate the band, A, so that the marks, *c, c*, thereon will register with the indicating arm, *m*, when changed to conform to the spike roller, C. For the purpose of holding the bolt, S, in the desired position, I preferably use a locking bar, V, held in place by a suitable screw, W, the locking bar, V, fitting into the notch, *v*, in the bolt head, S', and preventing the movement of the bolt.

In Fig. 3, I show a modified form of my invention in which I place on the shaft, 9, carrying the spike roller, 10, the gear wheel, 11, meshing with the gear wheel, 12, on the shaft carrying the wheel, B. I mount the block, R, in the arm, O, of the bracket, K, as already described, and place the expansible band, A, around the wheels, B and T, as already stated. I simply do away with the use of the sprocket wheel and sprocket chain and substitute therefor the gear wheels, 11 and 12.

In Fig. 5, I show a perspective view of the cap, 13, which is provided with the marks, 14, extending from the center of the face of the cap to the edges and preferably across the flanged portion, 15, thereof. Of course I may divide the surface into fourths, or other divisions instead of thirds. These marks may be accentuated by placing a channel in the face and flanges of the cap, as shown in Fig. 5. This cap is of a size sufficient to pass over the wheel, B, and occupy the position shown in Fig. 3. This cap is used when the spike rollers all produce the same length of cloth in one revolution. It is not then necessary to use the expansible band, A, although in Fig. 3 I show them both in position for use. I may use for the band, A, the spiral spring, *b*, without the tube, in which case I mark the spring at equidistances, as at 20, 20, (see Fig. 6).

What I claim as my invention and desire to secure by Letters Patent is:

1. In a matching device for weaving machines, the combination of a wheel mounted to rotate close to the work to be matched; a lazy pulley; an expansible band passing over said wheel and pulley; a means for adjustably mounting said pulley in reference

to the said wheel; a spindle upon which said wheel is mounted; a bracket attached to the frame of the machine through which said spindle passes; a means connected with said spindle for imparting motion to said wheel in uniformity with the motion of rotation of the spike roller; a spike roller; a means for mounting the same, substantially as described.

2. In a matching device for weaving machines, a wheel; a means connected with the frame of the machine for mounting said wheel in such position that the wheel will rotate close to the work to be matched; a means for imparting a rotary motion to said wheel in unison with the rotary motion of the spike roller; a spike roller mounted in connection with the frame; a band comprising a tube of elastic material; a spiral spring in said tube; a lazy pulley; a means for adjustably mounting said lazy pulley; said band passing over said wheel and pulley.

3. In a matching device for weaving machines, a wheel; a spindle to which said wheel is keyed; a pulley; a block to which said pulley is mounted; a bolt by which said block is moved toward or from said wheel, depending upon the direction of the movement of the bolt; a bracket in which said block may be moved; a spike roller; a means for connecting the spike roller with said wheel; a band comprising an elastic tube; a spiral spring placed in said tube; said band placed around said wheel and said pulley.

4. A matching device for weaving machines comprising a wheel; a means for mounting the same so that it will rotate close to the work to be matched; a pulley; a means for adjustably mounting said pulley; an expansible band placed around said wheel and pulley; a means for locking said pulley in the desired position; a means for connecting the spike roller with said wheel; a means for mounting said spike roller; a spike roller.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES H. COLLINS.

Witnesses:

LOTTIE PRIOR,
FREDERICK W. CAMERON.