No. 870,345. PATENTED NOV. 5, 1907.

W. H. CLEGG.

CLOTH TAKE-UP MOTION FOR LOOMS.

APPLICATION FILED MAR. 5, 1906.

2 SHEETS—SHEET 1.

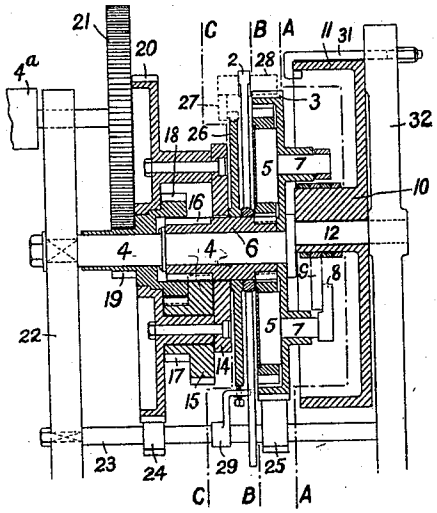


FIG. 1.

FIG. 2.

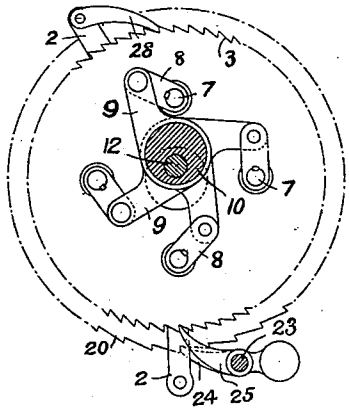
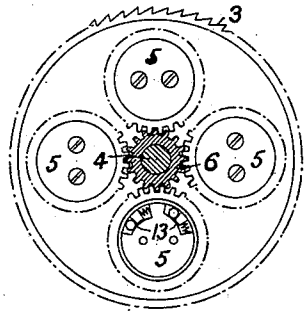


FIG. 3.



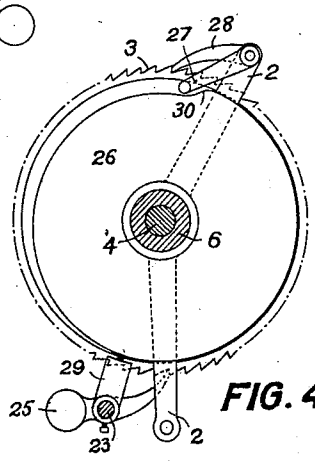


FIG. 4.

Witnesses

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CLOTH TAKE-UP MOTION FOR LOOMS.

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2 SHEETS—SHEET 2.

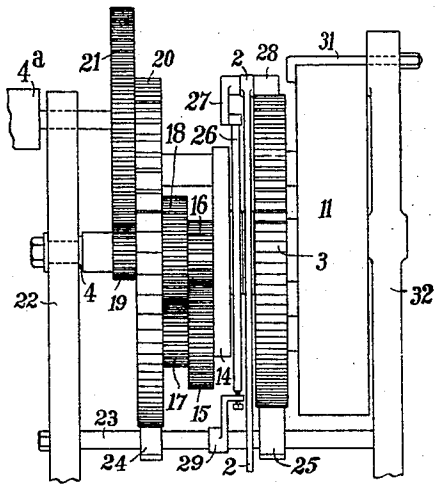


Fig. 5.

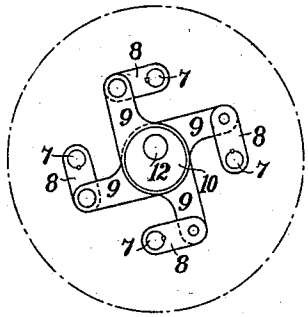


Fig. 7.

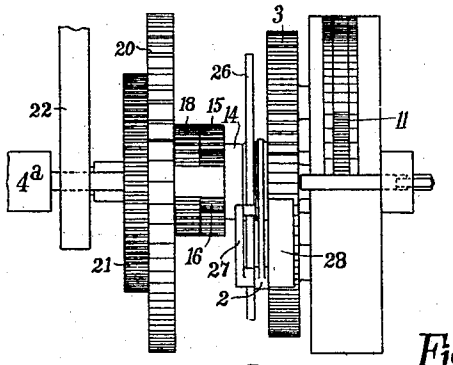


Fig. 6.

Fig. 9.

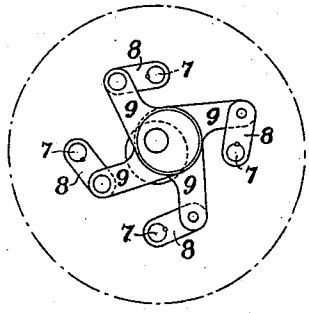
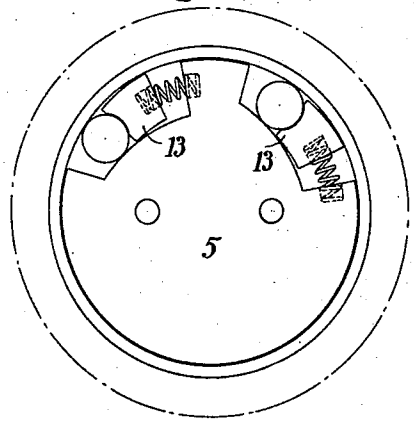


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM HENRY CLEGG, OF BURNLEY, ENGLAND.

CLOTH-TAKE-UP MOTION FOR LOOMS.

No. 870,345. Specification of Letters Patent. Patented Nov. 5, 1907.

Application filed March 5, 1906. Serial No. 304,358.

To all whom it may concern:

Be it known that I, WILLIAM HENRY CLEGG, a subject of the King of Great Britain, residing in Burnley, in the county of Lancaster, in the Kingdom of England, engineer, have invented certain new and useful Improvements in Cloth-Taking-Up Motions for Looms, for which application has been made in Great Britain, No. 5,128, dated 11th March, 1905.

This invention relates to means or mechanism for drawing through or taking up the cloth as it is woven in weaving looms.

The object of the present invention is to make a taking up mechanism that will weave any pick required without changing any wheels.

In order that the invention may be clearly understood, reference will be had to the accompanying drawings, in which:—

Figure 1 is a sectional elevation of the mechanism; Fig. 2 is a section taken on the line A—A looking to the left; Fig. 3 is a section of Fig. 1 on the line B—B looking to the right; Fig. 4 is a section of Fig. 1 on the line C—C looking to the right; Figs. 5 and 6 are elevation and plan view, respectively, of the mechanism as a whole; Figs. 7 and 8 are two diagrammatic views showing the adjustments hereinafter referred to; and Fig. 9 is an enlarged detail view of the free-wheel devices shown in Fig. 3.

2 represents a pawl carrier which acts upon the catch wheel 3, which by means of intermediate gear acts upon the draw or sand roller 4^a. The catch wheel 3 is mounted on a stationary shaft 4 and carries a plurality, say 4, of small pinions 5, which gear into a small pinion on the sleeve 6 loose on the shaft 4. These small pinions 5 have shafts 7 bearing in the catch wheel 3 and arranged as shown in Fig. 2 with cranks 8 connected to eccentric rods 9 working on an eccentric 10 which is part of a circular index plate 11, and mounted on an eccentric part 12 of the shaft 4. The eccentricity of the part 12 of the shaft and of the part 10 is such that by the index plate 11 being turned round on the part 12, the center of rotation for the eccentric rods 9 can be brought concentric with the shaft 4. The small pinions 5 are mounted on the shafts 7 as free wheels by means of the usual spring actuated roller and slot clutch, such as 13 (Fig. 3). Rotatably mounted on the sleeve 6 is a frame 14 which carries a pinion 15, which gears with teeth 16 on the sleeve 6. Integral with the pinion 15 is a smaller pinion 17, which gears with a further pinion 18 mounted on the shaft 4 which is provided with a further pinion 19. On the part connecting the pinions 18 and 19 and also rigidly connected to the frame 14 is a second catch wheel 20. The pinion 19 gears with the sand or draw roller wheel 21.

Connected to the frame of the loom 22, in which the shaft 4 is rigidly mounted, is a support 23 which carries two pawls 24 and 25, which engage with the two catch wheels 20 and 3 respectively. The pawl-carrier 2 is revolubly mounted on the sleeve 6 and actuated from any suitable part of the loom in the ordinary way. In close proximity to this pawl-carrier and revolubly mounted on the sleeve 6 is a cam 26, on the surface of which an arm 27 rigidly connected to the pawl 28 of the pawl-carrier slides. This cam is adjustable on the sleeve 6, and capable of being fixed in any suitable position by some such clamping device as that indicated as 29. The cam is provided with a shoulder 30 which can be advanced or set back so as to regulate the position in which the pawl 28 will engage with the teeth of the catch wheel 3 in the oscillation of the pawl-carrier, so that the catch wheel can be rotated one, two or more teeth as desired at each oscillation.

The circular or index plate 11 is capable of being clamped in any given position by means of a clamp 31 secured to any suitable fixed part of the loom, such as indicated by 32. This clamp 31 also acts as a stationary indicator, under which the index plate is moved.

The operation of the device is as follows:—The index plate is adjusted so that it shows the desired number of picks per quarter inch. This adjustment will alter the relative eccentricities of the part 10 and the shaft 4, and as small shafts 7 connected to the pinions 5 are concentrically arranged about the shaft 4, will also alter the eccentricity of the part 10 relative to these shafts 7 (see Figs. 7 and 8). On the pawl carrier being set in motion it will urge forward the catch wheel 3 a given amount for each oscillation, the amount being capable of regulation as described by means of the cam 26. The turning of the catch wheel 3 about the cam 10 will cause, as will be seen from Fig. 2, the oscillation of the shafts 7 to an amount corresponding to the position of the part 10. The pinions 5 being mounted as free wheels on the shafts 7 will only be moved forward in one direction (see Fig. 9), and in the present case as they gear with teeth on the sleeve 6, will force round this sleeve in advance of the catch wheel 3. The sleeve 6 communicates its motion by its teeth 16 to the reducing motion comprised by pinions 15, 17, 18 and 19, so that the draw or sand roller wheel 21 is given a slow forward motion. The second catch wheel 20 is normally held stationary by its pawl 24, but is capable, on the pawl 24 being released, of being rotated by hand, whereby motion can be communicated to the pinion 19 through pinions 15, 17 and 18, so that the sand or draw roller can be quickly adjusted by hand to any given position, and if required turned back in case any mispicks have been made in the loom. This second catch wheel is rendered necessary owing to the impossibility of moving the first catch wheel 3 backwards, which is prevented by the free wheel motions connected with the pinions 5.

It will be obvious that if it is desired to lessen the number of picks to the quarter inch in the cloth, the

motion of the draw or sand roller will have to be accelerated. When this is desired all that is necessary is to alter the circular index plate 11 so as to bring a higher number opposite the index 31, which action will increase the eccentricity of the part 10 relative to the shaft 4, and so increase the throw of the cam and the motion of the pinions 5.

I declare that what I claim is:—

1. In a cloth taking up motion for looms, a draw or sand roller, a central shaft, a catch wheel mounted on said shaft, a sleeve on said shaft, pinions concentrically mounted in said catch wheel and gearing with said sleeve, suitable gearing between said sleeve and said draw or sand roller, and means for rotating said pinions relative to said catch wheel.

2. In a cloth taking up motion for looms, a draw or sand roller, a central shaft, a catch wheel mounted on said shaft, a sleeve on said shaft, gearing between said sleeve and said draw roller, means for rotating said sleeve in advance of said catch wheel, and means for adjusting the relative motions of said catch wheel and said sleeve.

3. In a cloth taking up motion for looms, a draw or sand roller, a catch wheel, a shaft carrying said catch wheel, a plurality of pinions centrically mounted in said catch wheel, a sleeve on said shaft adapted to gear with said pinions, an eccentric portion on said shaft, an eccentric mounted on said eccentric portion, cranks and connecting rods between each of said pinions and said eccentric part, and means for adjusting the eccentric on the eccentric part of said shaft.

4. In a cloth taking up motion for looms, a draw or sand roller, a shaft, a catch wheel on said shaft, a pawl carrier adapted to rotate said catch wheel, a sleeve on said shaft, means for rotating said sleeve at varying speeds relative to the speed of said catch wheel, and gearing between said sleeve and said sand roller.

5. In a cloth taking up motion for looms, a draw or sand roller, a catch wheel, a shaft carrying said catch wheel, means for intermittently rotating said catch wheel, a series of pinions mounted in said catch wheel, a plurality of shafts one for each of said pinions, bearing in and centrically to said catch wheel pinions, means of engagement between said shafts and said pinions to make rotative connection in one direction only, and gearing between said pinions and said draw roller.

6. In a cloth taking up motion for looms, a draw or sand roller, a catch wheel, a shaft carrying said wheel, a sleeve on said shaft, adjustable differential gear between said catch wheel and said sleeve, reducing gear connected to said sleeve, and a draw roller wheel between the draw or sand roller and said reducing gear.

7. In a cloth taking up motion for looms, a draw or sand roller, a catch wheel, a second catch wheel, differential gear between said first and second catch wheels, and connections between said second catch wheel and said sand or draw roller.

8. In a cloth taking up motion for looms, a draw or sand roller, a catch wheel, a shaft carrying said catch wheel, an eccentric part on said shaft, an eccentric mounted on said eccentric part, a plurality of pinions mounted centrically in said catch wheel, shafts connected to said pinions, means for oscillating said shafts from said second eccentric, means for permitting rotation of said shafts in one direction relative to the pinions, a sleeve on said shaft gearing with said pinions, and a second catch wheel intermediate to said first catch wheel and said sand or draw roller, said second catch wheel being capable of rotation by hand.

9. In a cloth taking up motion for looms, a draw or sand roller, a catch wheel, adjustable differential gearing between said catch wheel and said sand roller, and means for turning said sand roller independently of said catch wheel.

10. In a cloth taking up motion for looms, a draw or sand roller, a catch wheel, adjustable differential gear between said catch wheel and said draw or sand roller, and means for registering the amount of adjustment of said differential gear.

In witness whereof, I have hereunto signed my name this 24th day of February, 1906, in the presence of two subscribing witnesses.

WILLIAM HENRY CLEGG.

Witnesses:
HUBERT PUMPHREY,
JOHN J. LEARY.