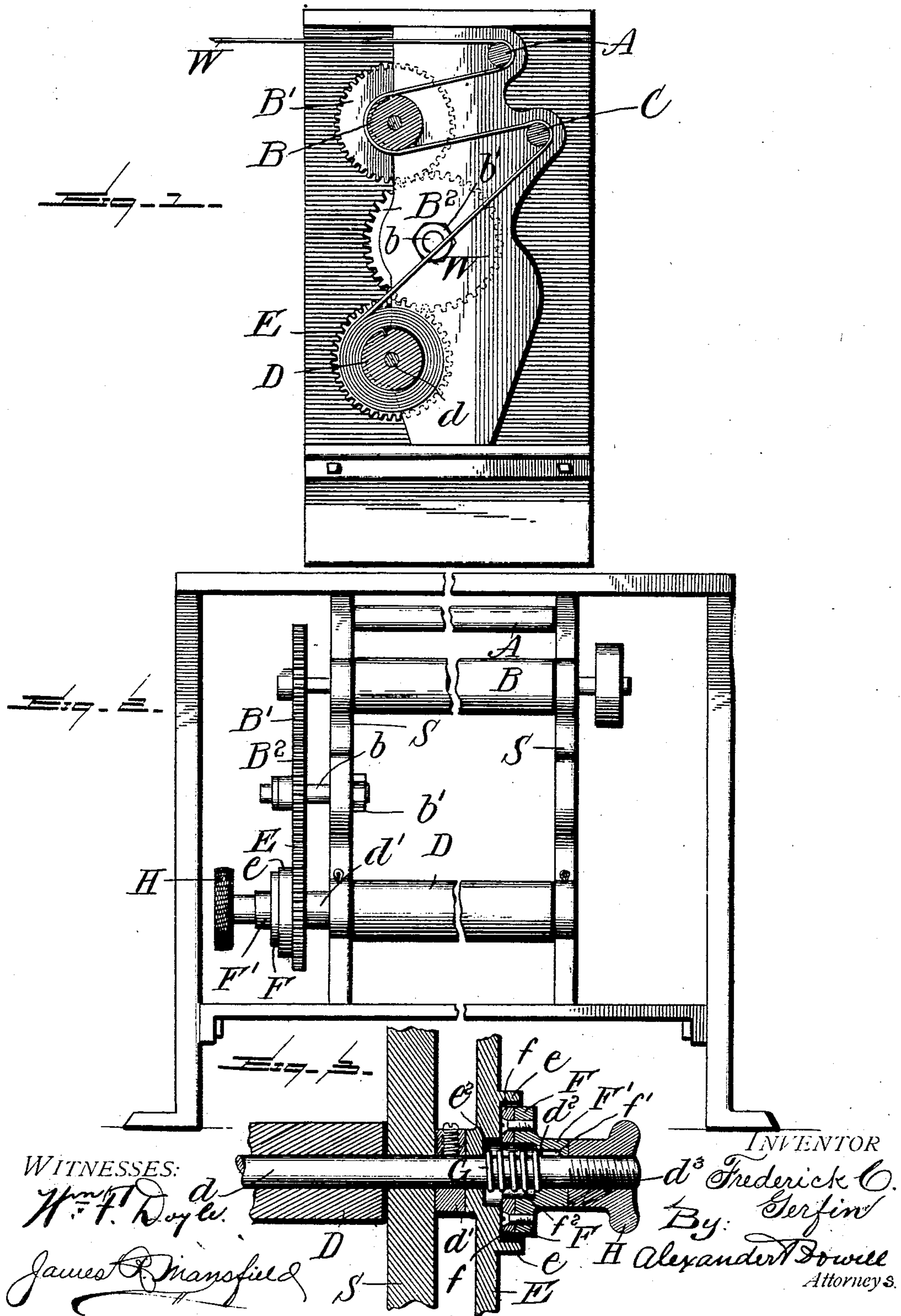


No. 704,314.

Patented July 8, 1902.

F. C. GERFIN.
TAKE-UP FOR LOOMS.
(Application filed Oct. 1, 1901.)

(No Model.)



WITNESSES:

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TAKE-UP FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 704,314, dated July 8, 1902.

Application filed October 1, 1901. Serial No. 77,188. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. GERFIN, of Columbia, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Take-Ups for Looms; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in take-up mechanisms for looms; and its object is to provide a very simple compensating device which can be readily attached to the take-up mechanisms of various kinds of looms without requiring any expensive alterations therein or additions thereto and which will hold the completed fabric securely against the warp tension and prevent annoying slipping of the fabric and dispense with the cumbersome contrivances commonly employed to actuate and hold the take-up roll. The tension on the warp-threads of the fabric tends to pull the fabric back from the take-up mechanism and is a great source of annoyance to the weavers, and many efforts have been made to prevent this. Another annoyance arises when the diameter of the take-up roll is increased by the fabric wound thereon, as then the latter roll will pull the fabric faster than the outfeed-roll will deliver it. To overcome this latter defect, friction-drives have been made; but these have been generally cumbersome and ill adapted to various makes of looms and expensive in application.

My present invention provides a very simple but effective device whereby the take-up roll is frictionally driven from the outfeed-roll and the friction devices can be adjusted at any time without stopping the loom.

The invention is particularly applicable to the "Mason" and "Swivel" looms, but is useful with other makes of looms.

The invention consists in the simple novel devices for driving the take-up roll from the outfeed-roll, as hereinafter claimed, and the accompanying drawings illustrate the same as applied to the take-up mechanism of a Mason loom.

In the accompanying drawings, Figure 1 is a detail vertical section through the take-up mechanism of a loom. Fig. 2 is a detail side elevation thereof. Fig. 3 is an enlarged longitudinal section through the adjustable friction device on the take-up roller.

In said drawings, A designates the guide-roller, over which the woven fabric W is led from the loom proper, (not shown,) thence to the outfeed-roll B, which is generally rough-surfaced, and is rotated by a ratchet or other step-by-step motion, (not shown,) just as is usual in such looms. From roll B the fabric is led over another guide C and thence to the take-up roll D, on which it is wound.

On one end of the shaft d of the take-up roll D is loosely mounted a pinion or gear E, which abuts against a collar d' on the roll-shaft. This pinion is preferably provided with an annular flange e , within which fits a disk F, whose inner face is provided with a leather or other suitable frictional surface f , adapted to contact with the face of wheel E within the annulus e . Disk F is supported on a hub F' , which is slidably mounted on the shaft d exterior to pinion E, but is keyed to the shaft, so that it cannot rotate thereon. As shown, a pin d^2 is tapped into the shaft and engages a keyway or slot f' in the hub. A coiled spring G is interposed between the pinion E and disk F and acts to force them apart, said spring being concealed within annular recesses $e^2 f^2$ of the pinion and disk, as shown. The separation or contact of the disk and pinion is controlled by a hand-nut H, which is tapped on the threaded outer end d^3 of shaft d , as shown, and by turning this hand-nut one way the disk can be positively forced toward the pinion, and by turning the hand-nut in the opposite direction the spring G is permitted to separate the disk and pinion.

The pinion E is driven from the outfeed-roll B by any suitable means; but I prefer to use a train of gears, as shown, to wit: a pinion B' on the outfeed-roll and an intermediate pinion B^2 meshing with both pinions B' and E, thus communicating motion positively from roll B to pinion E. From pinion E the

motion is communicated more or less power-
 fully to roll D through the friction-disk F,
 which in operation is adjusted so as to cause
 roll D to positively take up all the fabric fed
 5 forward by the outfeed-roll B, but will slip
 or yield if the tension on the fabric becomes
 too great between rolls B D, and thus auto-
 matically compensate for the enlarging di-
 10 ameter of the take-up roll as the fabric is
 wound thereon, while at the same time hold-
 ing the take-up roll securely against the
 backward pull of the warp tension.

Pinion B² may be journaled on a stud b,
 tapped through the adjoining standard S of
 15 the frame in which the rolls are journaled,
 and secured by a nut b' on its inner end, as
 shown.

In applying this device to Mason looms
 it is only necessary to thread the end of the
 20 take-up roll shaft and attach the collar d' and
 pin d² thereto. Then the parts E F G H can
 be readily placed on the shaft d. A hole can
 be tapped through standard S at the proper
 point and stud b fastened thereto and the
 25 pinions B B² placed in position.

Having thus described my invention, what

I therefore claim as new, and desire to secure
 by Letters Patent thereon, is—

The herein-described frictional take-up for
 looms comprising a take-up roll having a pro- 30
 jecting shaft threaded at its end, a collar
 fixed on the shaft, a pinion rotatably mounted
 on the end of said shaft between the collar
 and the threaded portion thereof, a frictional 35
 disk slidably mounted on the shaft exterior
 to the pinion but rotatable with the shaft, a
 hand-operated nut screwed on the threaded
 end of said shaft exterior to and engaging
 the hub of the disk, and a separating-spring 40
 placed on the shaft between the disk and pin-
 ion, said spring being confined in a recess in
 the disk; with the outfeed-roll, and gearing
 for driving said pinion from said outfeed-roll,
 substantially as and for the purpose specified.

In testimony that I claim the foregoing as 45
 my own I affix my signature in presence of
 two witnesses.

FREDERICK C. GERFIN.

In presence of—

C. E. LENIG,

F. P. D. MILLER.