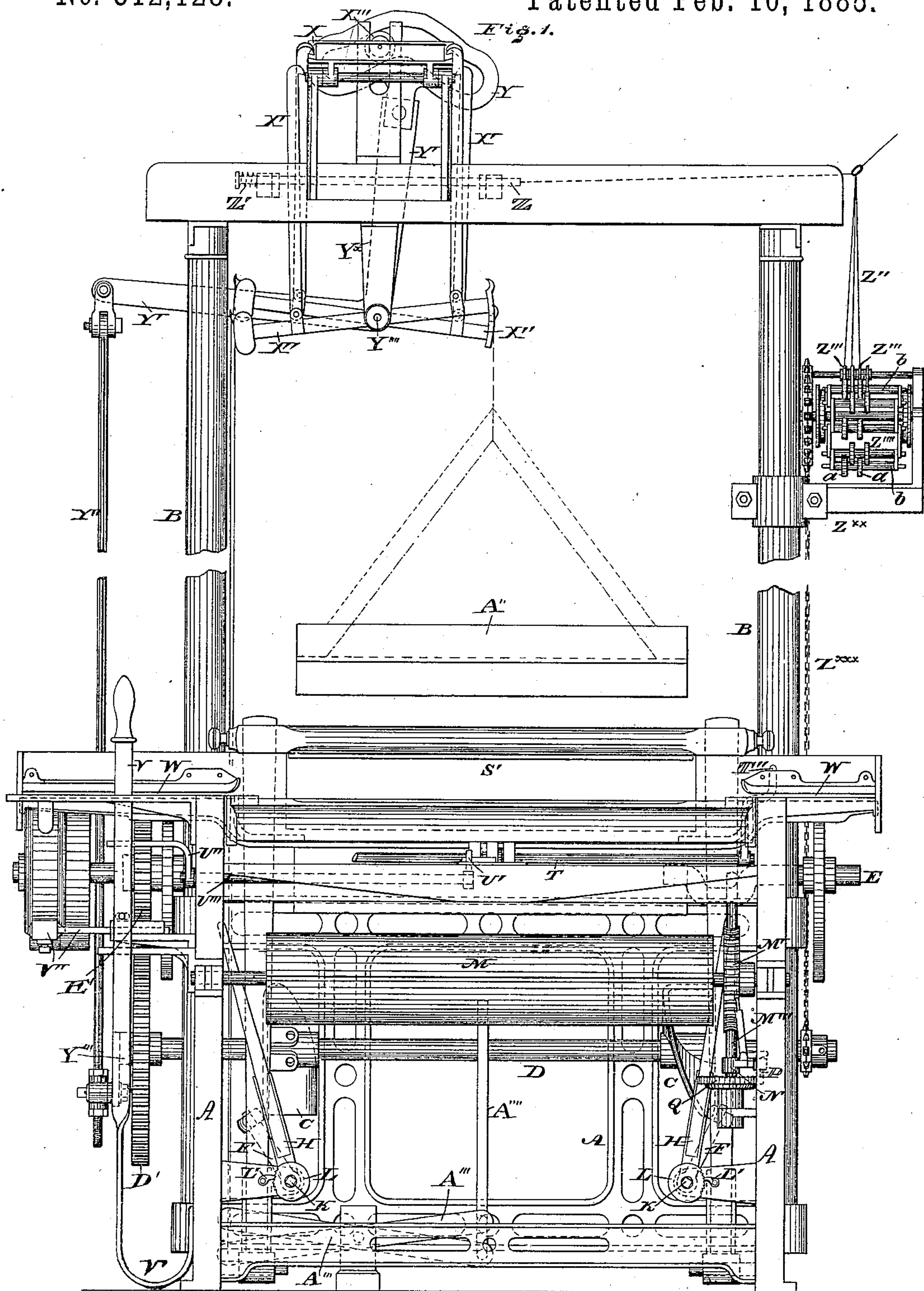


3 Sheets—Sheet 1.

TAKE-UP MECHANISM FOR LOOMS.

Patented Feb. 10, 1885.



WITNESSES:

L. Douville
W. F. Girches

-INVENTOR:

INVENTOR:
Fried. Kesseling,
BY *John A. Dieckersheim*
ATTORNEY.

(No Model.)

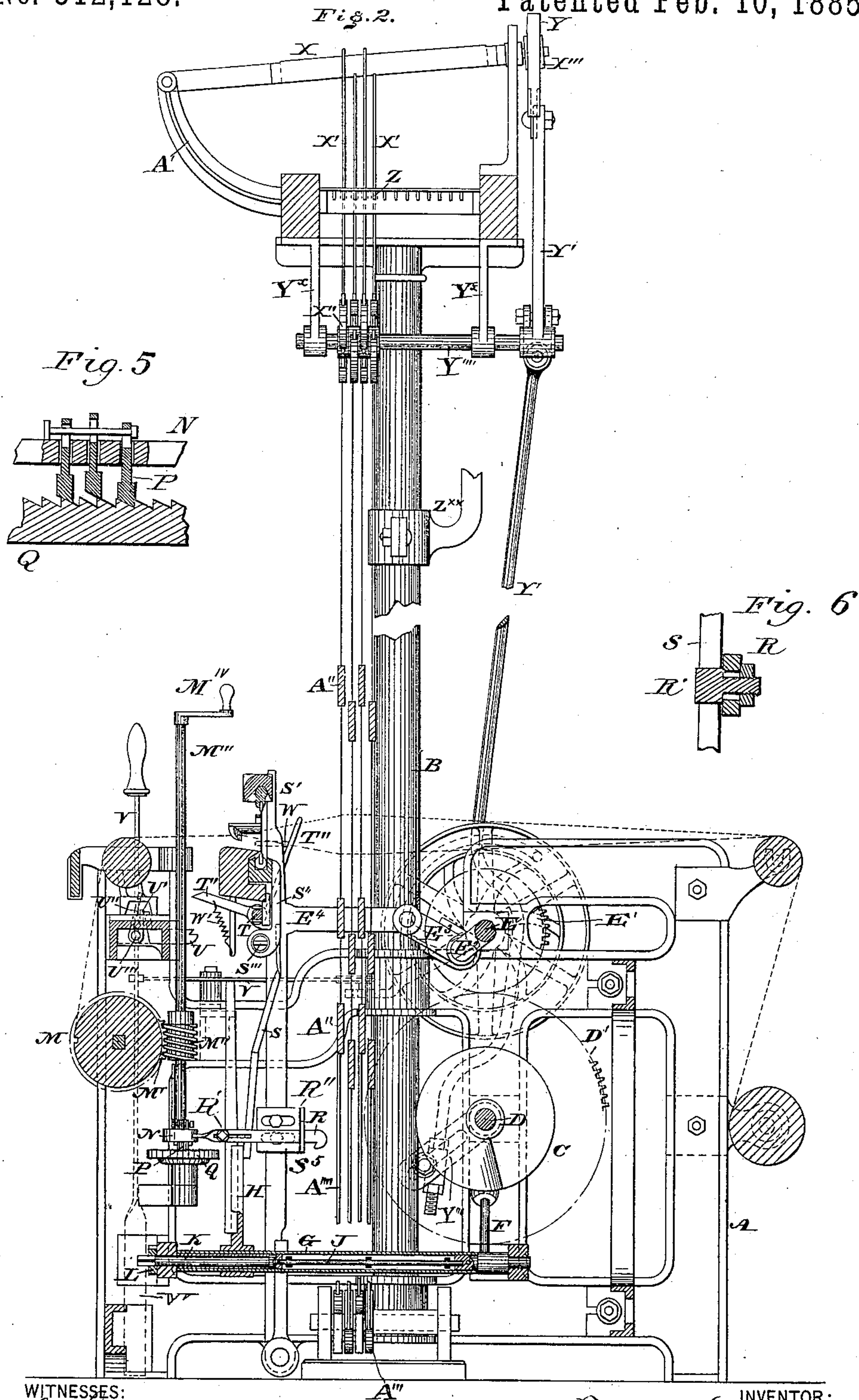
3 Sheets—Sheet 2.

F. KESSELRING.

TAKE-UP MECHANISM FOR LOOMS.

No. 312,128.

Patented Feb. 10, 1885.



WITNESSES:

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H. F. Kircher

INVENTOR:

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(No Model.)

3 Sheets—Sheet 3.

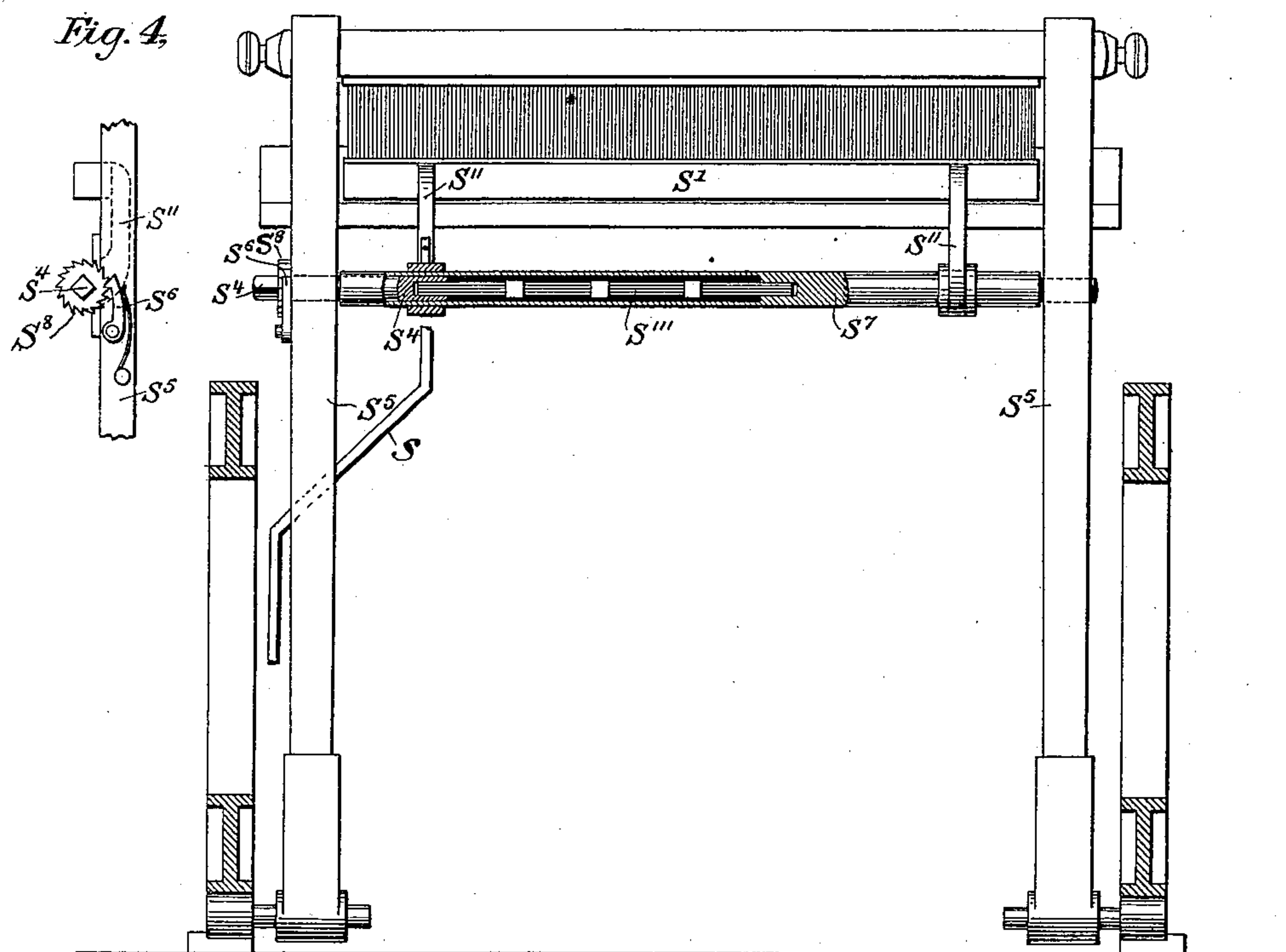
F. KESSELRING.

TAKE-UP MECHANISM FOR LOOMS.

No. 312,128.

Patented Feb. 10, 1885.

Fig. 3.



Friedrich Kesseling
Inventor

Witnesses

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N. H. Kenyon

UNITED STATES PATENT OFFICE.

FRIEDRICH KESSELRING, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR
TO J. C. MCCREERY, OF NEW YORK, N. Y.

TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 312,128, dated February 10, 1885.

Application filed August 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH KESSELRING, a citizen of Switzerland, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Take-Up Mechanisms for Looms, which improvement is fully set forth in the following specification and accompanying drawings, in which—

10 Figure 1 is a front view of a loom embodying my invention. Fig. 2 is a side view of the loom, with certain parts broken away and certain parts represented in section. Figs. 3 and 4 are detail views. Figs. 5 and 6 are sectional
15 views of details.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of novel take-up mechanism.

20 Referring to the drawings, A represents the frame of the loom, the upper part being supported by columns B, which rest upon the lower part of the frame.

M represents a drum or cylinder, on which the cloth or fabric is wound. To this shaft or cylinder is secured a worm-wheel, M', with which engages a worm, M'', on an upright shaft, M'''. A collar, N, is fitted loosely to the lower part of the shaft M''' and carries a
30 pawl, P, which engages with a ratchet-wheel, Q, the latter being firmly locked on the shaft M''' at its lower end. Said shaft is firmly mounted in the frame A at its lower and upper ends. The upper end of this shaft M''' is
35 represented as broken away in Fig. 1. It is surmounted by a handle, M'', as shown in Fig. 2. The pawl P is shown in detail in Fig. 5. It has three teeth having play up and down independently of each other through the collar
40 N. These teeth are one behind the other, and are arranged, as shown in Fig. 5, at a little greater distance apart than are the teeth of the ratchet-wheel Q. Any one of them taking against a tooth of the ratchet-wheel will
45 turn it when motion is given in the proper direction to the collar. Thus the effect of a much finer ratchet is attained, while the teeth are still large enough to be firmly taken against by the pawl and so to transmit the
50 power required without danger of the pawl slipping off.

To the collar N is connected a hooked arm, R, the hook of which is adapted to be taken against by an arm or part, R'', of the lay on the backward stroke of the latter, if the hook lies
55 in its path, whereby rotary motion is imparted to said collar N in one direction. The motion in the opposite direction is occasioned by an arm, S, which is connected with one of the supporting-arms S'' of the reed-frame S', the
60 latter being supported by means of the said arms S'', secured on the supporting-shaft S' and held in position by a torsional spring, S'''. Equivalent means may be used in lieu of the
65 spring S''' for holding the reed-frame in position. The torsional spring which holds the reed-frame in its normal position I prefer to use, and to provide it with a ratchet and pawl, the object whereof is to adjust the tension of
70 said spring. This is shown in Figs. 3 and 4, which are detail views of the torsional spring S''' and connected parts. S''' is the square
75 torsional spring. One end is seated in a square recess in the plug S⁴, which plug is mounted in the frame of the lay S⁵ and held fast by the
80 pawl S⁶, taking into the teeth of a ratchet, S⁸, mounted and keyed fast on the plug and held fast by the pawl in any position to which it may be initially turned, this giving the initial
85 tension to the spring. The other end of the spring S''' is seated in a square recess in the body of the partly-tubular shaft S', (which is partly solid for that purpose,) which
90 shaft S' is mounted as a sleeve on the plug S⁴ at one end, and has a reduced portion fitting in the frame of the lay at the other end, and which shaft carries securely locked on it
95 the arms S'', which carry the reed-frame S'. To one of the arms S'' is securely fastened the arm S. The lay, pivoted at the base of the loom, is driven in the well-known way from
100 the shaft E by means of the cranks E², the links E³, and the rigid arms E⁴ of the lay. As the lay moves forward and beats up, the reed-frame is caused to yield to the resistance offered by the fabric, owing to its pivotal connection with the lay, and motion is imparted to the arm S. This engages with a stud or projection, R', on the arm R, (shown in section in Fig. 6,) and rotates the collar N forward, whereby the pawl is moved over the ratchet into position to engage with and turn the lat-

ter on the return motion of the arm R, occasioned by the arm or part R' of the lay engaging with the hook of the arm R. The rotation of the ratchet Q is imparted to the shaft M''' and worm M'', whereby the cylinder or cloth-beam M is rotated, and the cloth or fabric consequently wound thereon. The rate of this rotation will manifestly depend entirely upon the distance which the arm R is thrown forward by the engagement of the arm S with the stud or projection R' at each beat of the lay, (the said stud being first properly adjusted as to its distance from the hook of the arm R;) and this will depend upon the resistance offered by the fabric to the forward motion of the reed-frame, increasing as that increases and diminishing as that diminishes. The rate of the take-up motion is thus automatically determined by the ability or inability of the reed-frame to make its full stroke in beating up. By my arrangement the reed-frame is controlled by one single spring, not by two separate springs, as heretofore, and the tension of that single spring is adjustable, whereby the fabric is evenly battened up across the entire width of the goods, and with a compactness that can be regulated at will.

My improved take-up motion also possesses the advantage that there can be no backward motion of the cloth-beam, and that without a special locking device, the worm M'' readily operating the worm-wheel M', but the worm-wheel being unable to operate the worm. Thus the strain of the fabric is held by the frame of the machine.

I do not here claim the shuttle-driving mech-

anism shown in the drawings, since the same is claimed in a pending application (Serial No. 132,422, filed by me May 22, 1884) for an improvement in shuttle-driving mechanism for looms; nor do I make any claim to the Jacquard mechanism shown in the drawings.

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

1. The combination of the cloth-beam M, worm-wheel M', worm M'', shaft M''', ratchet-wheel Q, pawl P, collar N, and hooked arm R, having stud R', with the lay and reed-frame of a loom, the reed-frame being pivoted on the lay, and having a device to hold it in position, and an arm, S, adapted to take against the stud R', and the lay being adapted to take against the hook of the arm R, substantially as and for the purposes set forth.

2. The combination of the cloth-beam M, worm-wheel M', worm M'', shaft M''', ratchet-wheel Q, pawl P, collar N, and hooked arm R, having stud R', with the lay and reed-frame of a loom, the arms S'', shaft S', torsional spring S''', plug S⁴, and the arm S, substantially as and for the purposes set forth.

3. The combination of the cloth-beam M, worm-wheel M', worm M'', collar N, shaft M''', ratchet-wheel Q, pawl P, and hooked arm R, having stud R', with the lay and reed-frame of a loom, the arms S'', shaft S', torsional spring S''', plug S⁴, ratchet S⁸, pawl S⁶, and the arm S, substantially as and for the purposes set forth.

FRIED. KESSELRING.

Witnesses:

JOHN A. WIEDERSHEIM,
A. P. GRANT.