No. 609,272. Patented Aug. 16, 1898.

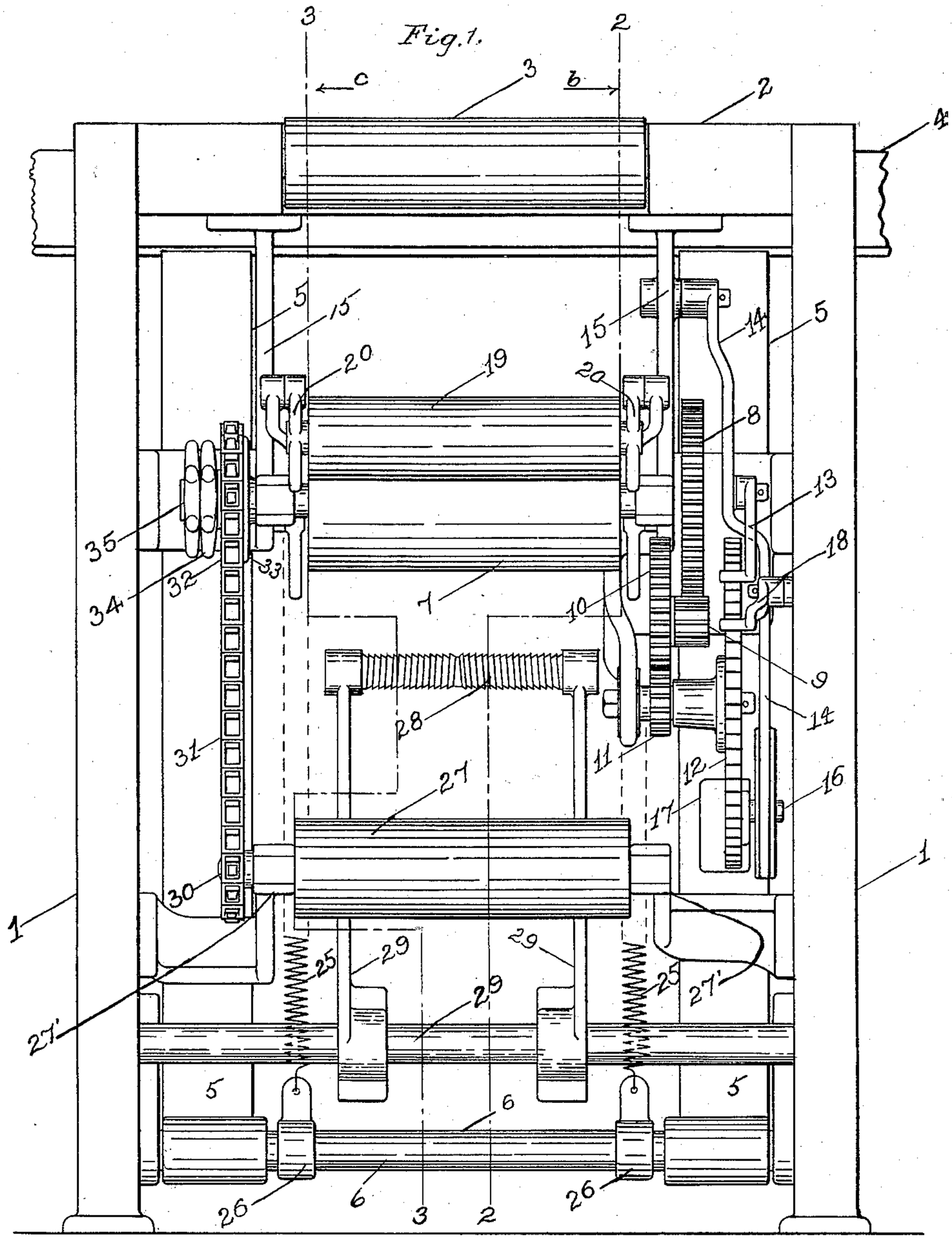
G. GOODLINE & H. WYMAN.

TAKE-UP MECHANISM FOR LOOMS.

(Application filed Jan. 24, 1898.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



Witnesses
Jos. T. Cyr.
Edw R. Parker

Inventors:
George Goodline
Horace Wyman
by J. L. Dewey Attorney

No. 609,272. Patented Aug. 16, 1898.

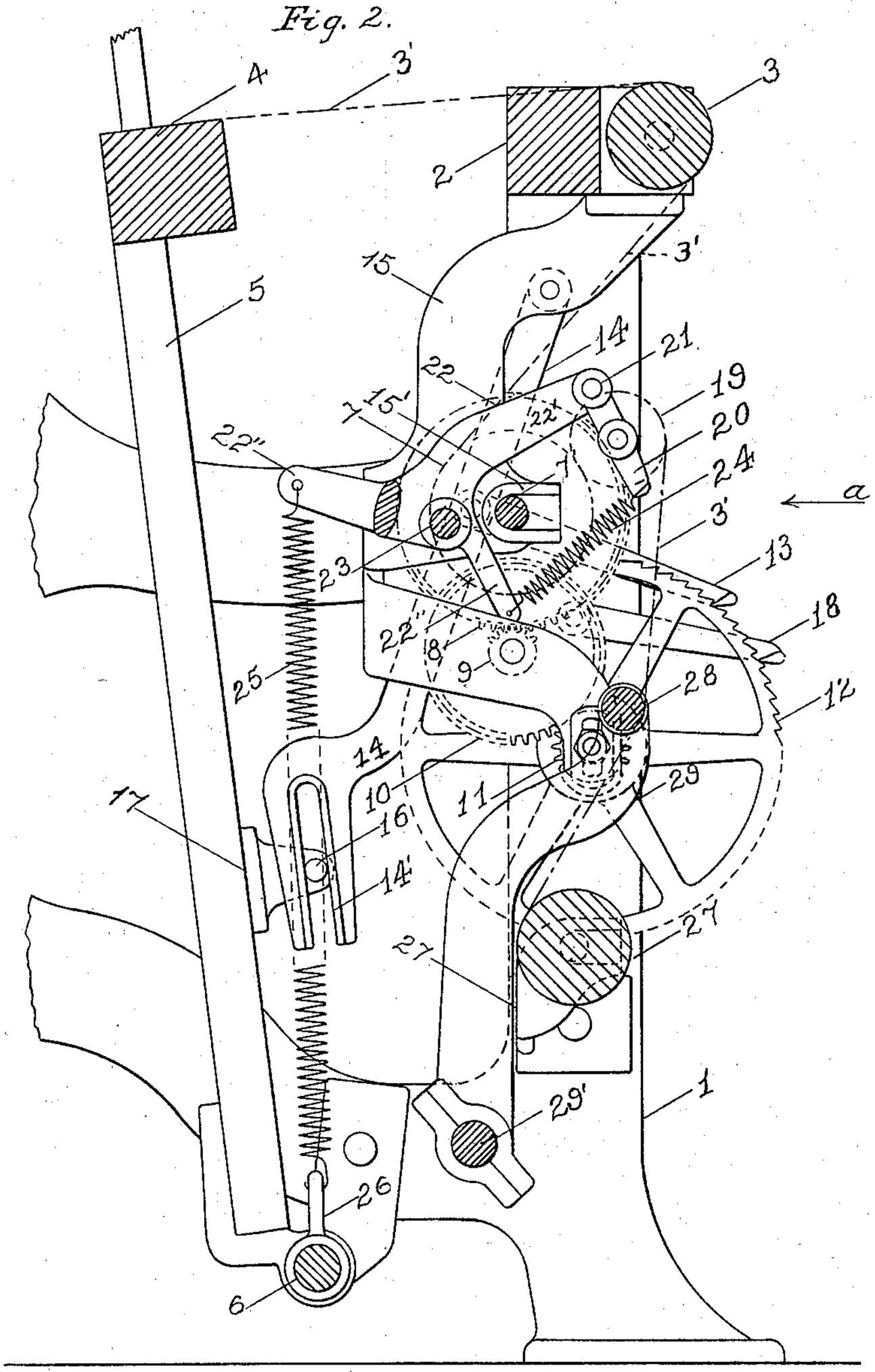
G. GOODLINE & H. WYMAN.

TAKE-UP MECHANISM FOR LOOMS

(Application filed Jan. 24, 1898.)

(No Model.) 3 Sheets—Sheet 2.

Fig. 2.



Witnesses
Jos. T. Byrn.
Edw. R. Baker

Inventors
George Goodline
Horace Wyman
by J. L. Dewey. Attorney

No. 609,272. Patented Aug. 16, 1898.

G. GOODLINE & H. WYMAN.

TAKE-UP MECHANISM FOR LOOMS.

(Application filed Jan. 24, 1898.)

(No Model.) 3 Sheets—Sheet 3.

Fig. 3.

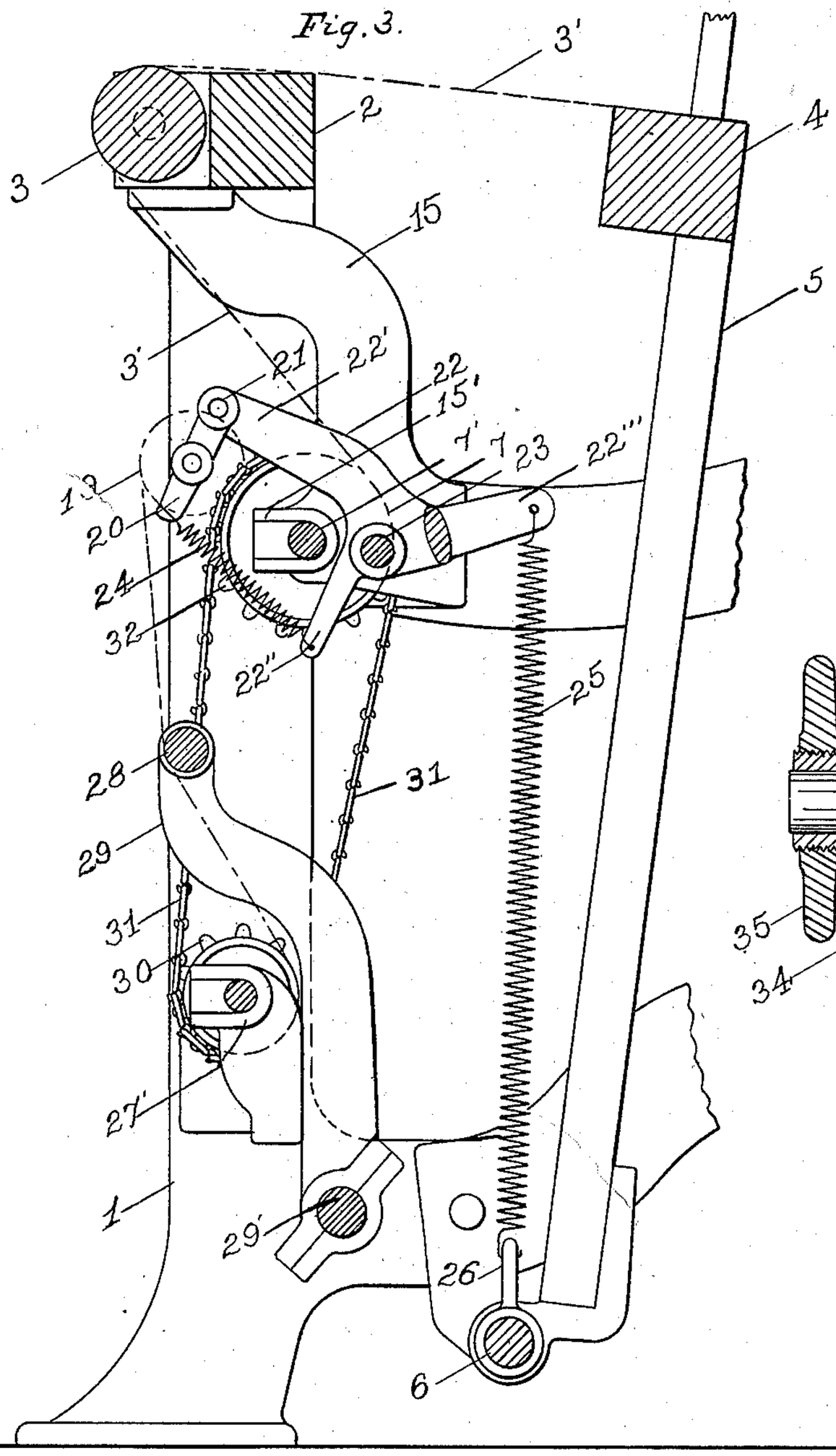
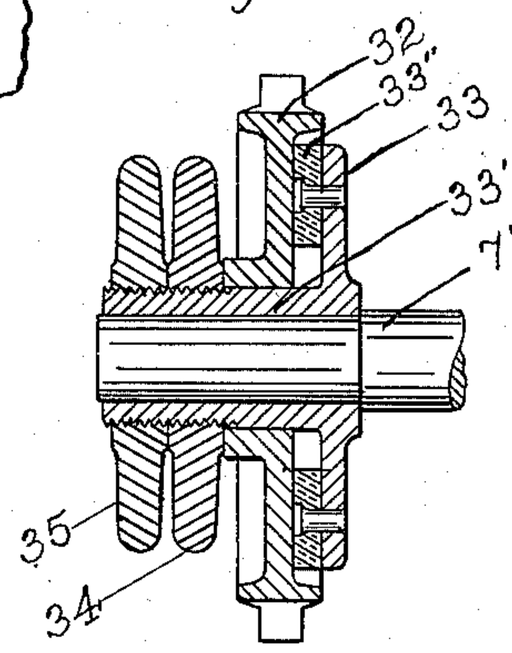


Fig. 4.



Witnesses
Jos. T. Cyr.
Edw. R. Parker

Inventors
George Goodline
Horace Wyman
by J. L. Dewey Attorney

UNITED STATES PATENT OFFICE.

GEORGE GOODLINE, OF PATERSON, NEW JERSEY, AND HORACE WYMAN, OF WORCESTER, MASSACHUSETTS, ASSIGNORS TO THE CROMPTON & KNOWLES LOOM WORKS.

TAKE-UP MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 609,272, dated August 16, 1898.

Application filed January 24, 1898. Serial No. 667,742. (No model.)

To all whom it may concern:

Be it known that we, GEORGE GOODLINE, residing at Paterson, in the State of New Jersey, and HORACE WYMAN, residing at Worcester, in the State of Massachusetts, citizens of the United States, have invented certain new and useful Improvements in Take-Up Mechanism for Looms, of which the following is a specification.

Our invention relates to the take-up mechanism of looms, adapted to be applied to and used upon looms for weaving delicate fabrics, as fine cotton, silks, &c., in which no filling stop-motion is ordinarily used, owing to the delicate nature of the material. Our improvements may also be used on looms for weaving other classes of material, if desired.

The object of our invention is to provide an improved take-up mechanism of simple and effective construction and operation; and our invention consists in certain novel features of construction of our take-up mechanism, as will be hereinafter fully described.

Referring to the drawings, Figure 1 is a front view of the take-up mechanism, looking in the direction of arrow *d*, Fig. 2. Fig. 2 is a section on line 2 2, Fig. 1, looking in the direction of arrow *b*, same figure. Fig. 3 is a section on line 3 3, Fig. 1, looking in the direction of arrow *c*, same figure; and Fig. 4 is a sectional detail of the friction mechanism for the take-up roll.

In the accompanying drawings, 1 are the loom sides; 2, the breast-beam, having a roller 3 located at its front side, over which the woven fabric 3′ passes; 4, the lay; 5, the lay-swords, secured at their lower ends on the rocker-shaft 6 in the usual way.

7 is the take-up roll, which is revolved through a system of gears 8, 9, 10, and 11, driven by a ratchet-wheel 12, which is moved, as here shown, at every stroke of the lay by a pawl 13, pivoted at its inner end on an arm 14, pivoted at its upper end on the take-up stand 15, and provided at its lower end with a slot 14′, into which extends and travels a pin or roll 16 on a stand 17, secured to the front side of one of the lay-swords 5. (See Fig. 2.) A second pawl 18, pivoted on the frame, engages the ratchet-wheel 12 to hold the same after it has been turned by the pawl 13. All of the above parts may be of the ordinary construction in this class of looms.

The revolving roll 19, termed a "carrier-roll," extends on the outside of the take-up roll 7 and is supported at each end in an arm or lever 20, which is pivotally supported at its upper end by pins 21 upon arms 22′ of the swinging frame 22, mounted upon the pins 23, supported in the take-up-roll stand 15.

A spiral spring 24 is attached at one end to the lower end of the lever 20 and at its other end to the downwardly-extending arm 22″ on the swinging frame 22 and acts to press the carrier-roll 19 against the take-up roll 7.

To the rearwardly-extending arm 22‴ of the swinging frame 22 is secured one end of a spiral spring 25. The other end of said spring is secured to a collar 26 on the lay-shaft 6.

The action of the springs 25 (there is a spring at each end of the swinging frame 22) is to rock the frame and raise the carrier-roll 19 if the fabric 3′ passing over the roll 19 is not drawn down by the action of the lower winding-up roll 27, to which winding-up roll 27 the fabric 3′ passes from the carrier-roll 19 after it has passed over the spreading-roller 28, supported in the upper ends of stands or arms 29, secured upon the cross-rod 29′. The spreader-roller 28 is provided with right and left hand grooves to spread the fabric as it passes over said roller.

The winding-up roll 27 is mounted in bearings 27′ on the loom-frame and has secured on one end thereof a sprocket-wheel 30, around which a chain 31 passes to a sprocket 32, loose on the hub 33′ of the disk or plate 33, fast on the end of the shaft 7′ of the take-up roll 7. A friction collar or surface 33″ is secured upon the outer surface of the plate 33, as shown in Fig. 4. The sprocket-wheel 32 is pressed against the friction-collar 33″ on the plate 33 and is held in frictional engagement to turn therewith by a nut 34, turning on the screw-threaded hub 33′ of the plate 33. A check-nut 35 is used to hold the nut 34 after it is adjusted.

The sprocket-wheel 32 of the take-up roll 7 is of greater diameter and has a greater num-

ber of sprocket-teeth than the sprocket-wheel 30 of the winding-up roll 27, so that the winding-up roll 27 may revolve at greater speed to wind up the fabric and take up any slack in the fabric between the take-up roll and winding-up roll; but as soon as the slack is taken up, then the tension of the fabric passing over the carrier-roll 19 will draw down said roll until the arms 22′ of the oscillating frame 22 come in contact with the projecting flanges 15′ on the take-up-roll stands 15, which act as stops to prevent any further downward movement of the carrier-roll 19. The winding-up roll 27 cannot now wind up the fabric any faster than it is delivered from the take-up roll, and the speed of said winding-up roll as the wound-up cloth increases in diameter thereon must decrease, and through the friction-driven sprocket-wheel 32 and the sprocket-chain 31 this is provided for, the sprocket-wheel 32 turning independently of the take-up-roll shaft 7′.

The advantages of the chain connection between the take-up roll and the winding-up roll and the frictional connection of the chain sprocket-wheel with the shaft of the take-up roll will be readily appreciated by those skilled in the art.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a loom, the combination with the take-up roll, means for revolving the same, the carrier-roll which bears against the take-up roll and is supported in arms pivoted on a swinging frame, and said swinging frame, and springs connected therewith for raising the frame and carrier-roll, and for holding said roll against the take-up roll, and a winding-up roll, of a sprocket-chain connection between the winding-up roll and the take-up roll, the sprocket-wheel of the take-up roll being frictionally connected with said roll, substantially as shown and described.

2. In a loom, the combination with the take-up roll, means for revolving the same, the carrier-roll which bears against the take-up roll, and is supported in arms pivoted on a swinging frame, and said swinging frame, and springs connected therewith for raising the frame and carrier-roll, and for holding said roll against the take-up roll, and a winding-up roll, of a sprocket-chain connection between the winding-up roll and the take-up roll, the sprocket-wheel of the take-up roll being frictionally connected with said roll, and of greater diameter and provided with a greater number of sprocket-teeth than the sprocket-wheel of the winding-up roll, substantially as shown and described.

GEO. GOODLINE.
HORACE WYMAN.

Witnesses:
J. C. DEWEY,
M. J. GALVIN.