

No. 710,379.

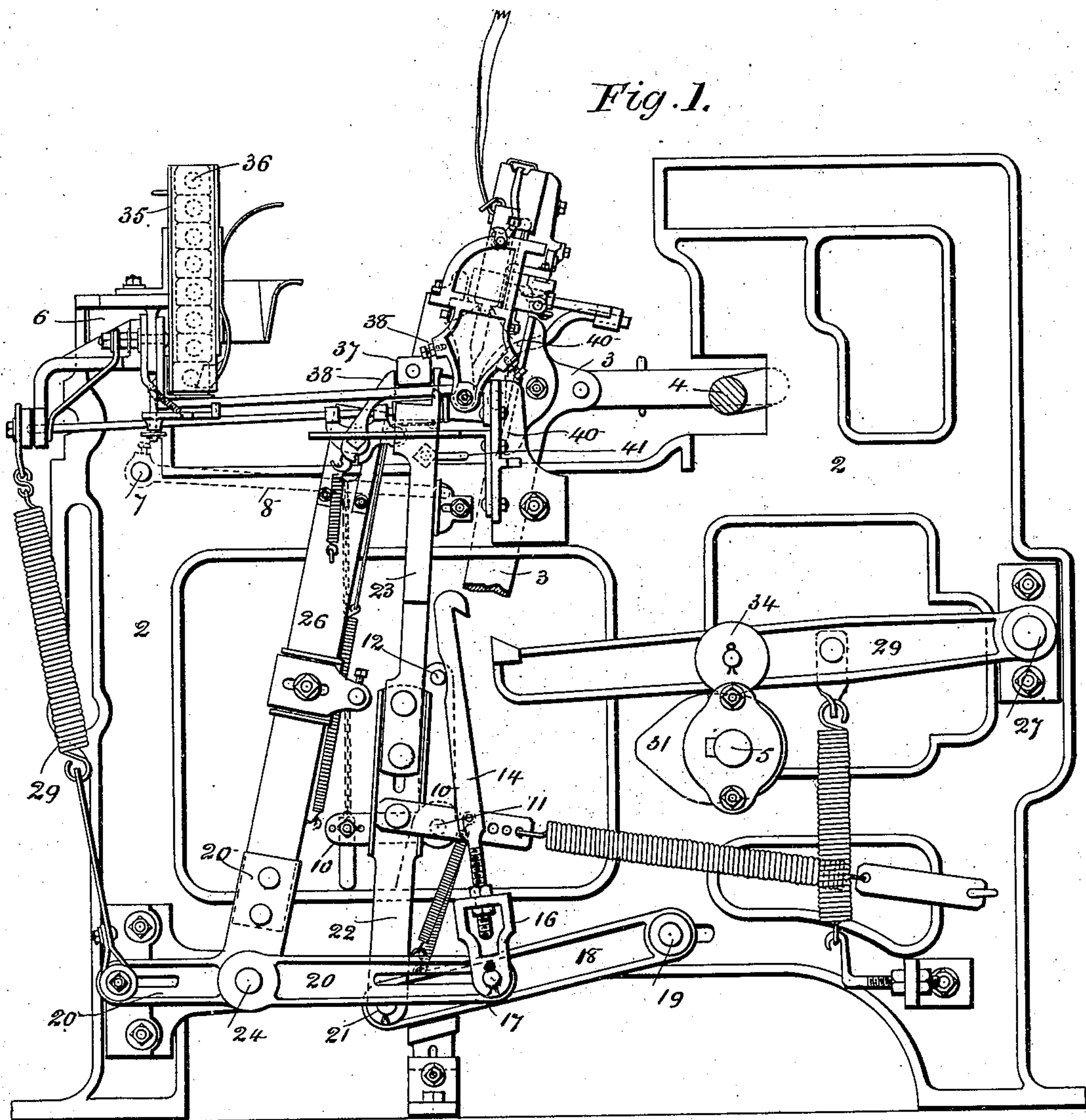
Patented Sept. 30, 1902.

R. TALBOT & W. ROSSETTER.
WEFT REPLENISHING MECHANISM FOR LOOMS.

(Application filed Jan. 7, 1902.)

(No Model.)

3 Sheets—Sheet 1.



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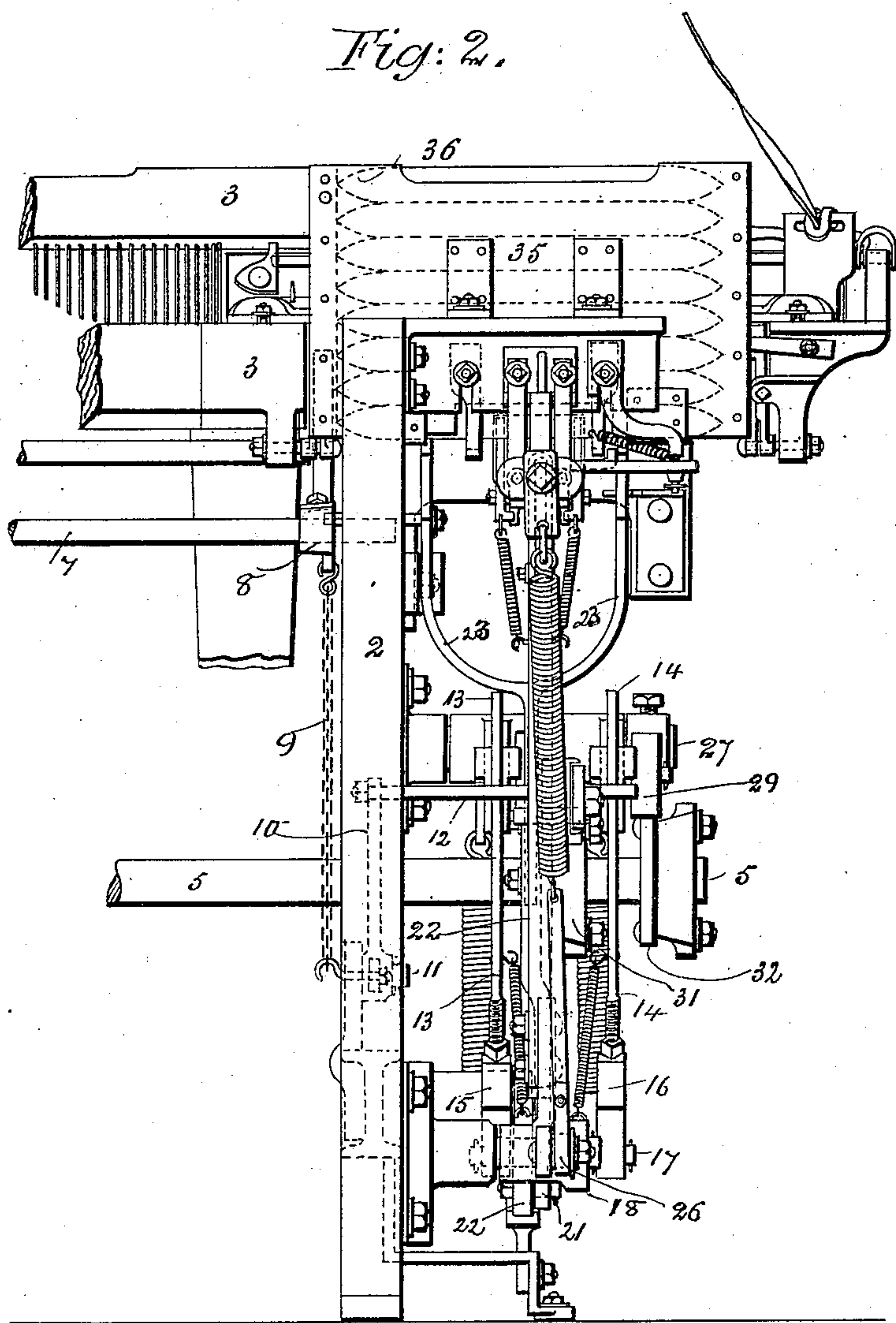
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Fig. 2.



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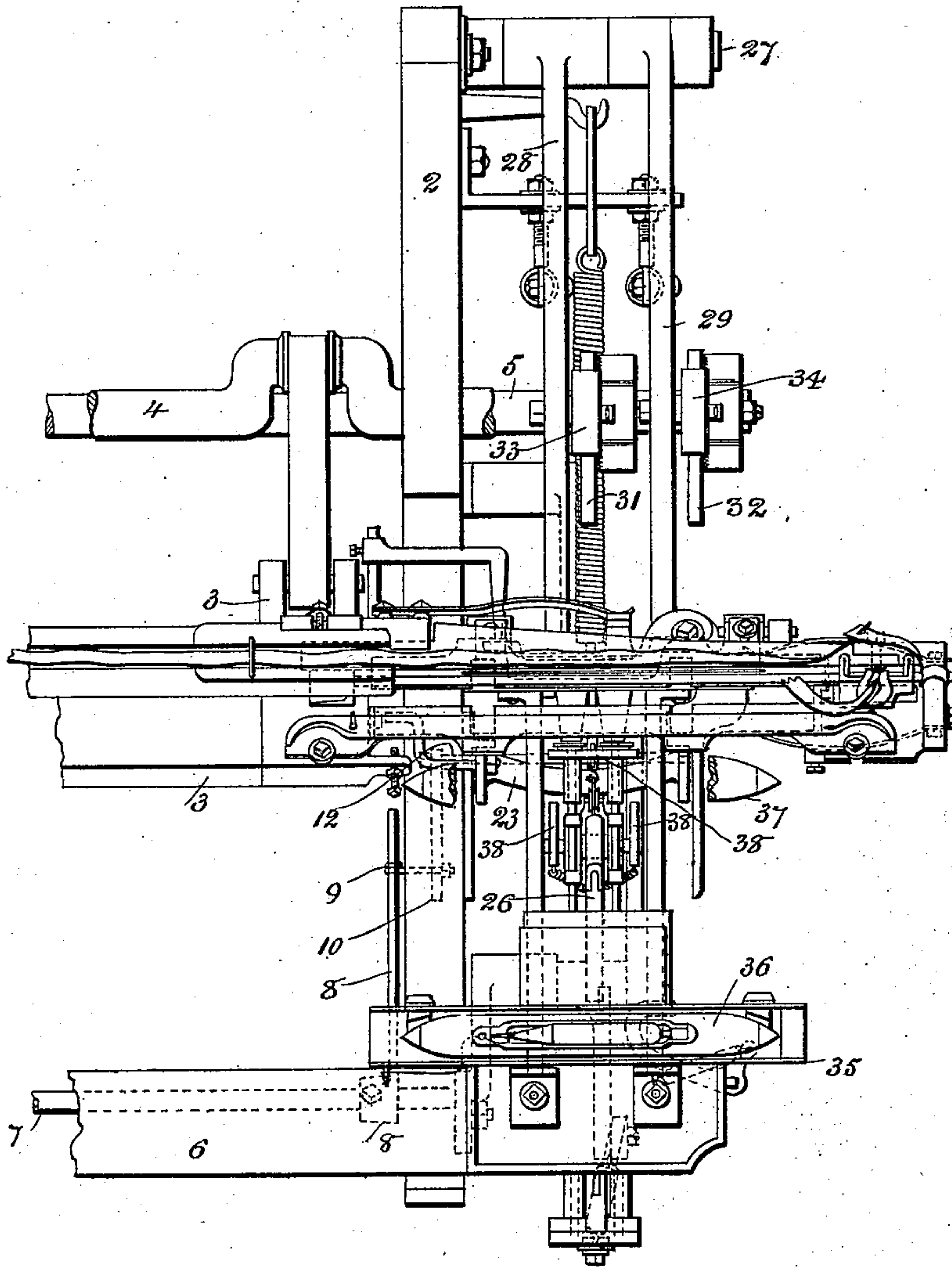
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3 Sheets—Sheet 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

RICHARD TALBOT AND WILLIAM ROSSETTER, OF BLACKBURN, ENGLAND,
ASSIGNORS TO BLACKBURN LOOM AND WEAVING MACHINERY MAKING
COMPANY, LIMITED, OF BLACKBURN, ENGLAND.

WEFT-REPLENISHING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 710,379, dated September 30, 1902.

Application filed January 7, 1902. Serial No. 88,778. (No model.)

To all whom it may concern:

Be it known that we, RICHARD TALBOT, of 3 Hardman street, and WILLIAM ROSSETTER, of 47 Hancock street, Blackburn, in the county of Lancaster, England, have invented certain new and useful Improvements in Weft-Replenishing Mechanism for Looms, of which the following is a specification.

Our invention relates to improvements in those automatic shuttle-changing motions of looms for weaving in which the following parts are employed: a receptacle for full shuttles mounted upon the breast-beam of the loom, a reciprocating carrier to pick up and carry a full shuttle from the bottom of the receptacle and hold it ready and push it into the shuttle-box as the lathe begins to return from its rearmost position, the bottom of the shuttle-box being formed in two parts held together by a spring.

The defect in certain automatic shuttle-changing motions is that hitherto the weft-fork has to pull down positively a slide on the lathe against the resistance of a powerful spring, and as the slide catches and actuates the pusher for forcing the full shuttle up into the box a very heavy strain is thus thrown upon the weft-fork, which is liable to break down.

The object of our invention is to avoid this strain and to give the weft-fork as little or less work to do than in any ordinary loom without an automatic shuttle-changing motion, and we accomplish this object and make the automatic change of shuttles more positive and certain by improved connections from the weft-fork stop-motion for bringing into action the motion for lifting and inserting a new shuttle and ejecting the spent one from the shuttle-box and for actuating the shuttle-carrier.

In the accompanying three sheets of drawings, Figure 1 is an end elevation, and Fig. 2 a front elevation, of one end of a loom to which our improvements are applied; and Fig. 3 is a plan view of Fig. 2.

In the drawings, 2 denotes the loom-frame; 3, the lathe; 4, the crank-shaft; 5, the tappet-shaft, and 6 the breast-beam of the loom, which is fitted with the usual weft-fork (not

shown) and transverse holding catch-rod or finger-rod 7. Upon the finger-rod 7 we secure an arm 8, connected by a chain 9 to an elbow-lever 10, pivoted at 11 upon the loom-frame, and to the other arm of this lever 10 is bolted a rod 12, which lies behind two vertical arms 13 14, each provided with a hook at its upper end and connected adjustably at the bottom to separate brackets 15 16, of which the bracket 15 is pivoted to a lever 18, fulcrumed at 19 on the loom-frame, and the bracket 16 is pivoted by a stud 17 to a lever 20. To the extremity of the lever 18 is pivoted at 21 the end of an upright arm 22, forked at the top 23, the extremities of the fork standing normally immediately under the spare shuttle in the carrier, ready to push it upward into the shuttle-box. The lever 20 is fulcrumed on a fixed stud 24, and to one arm of the lever 20 is bolted a vertical arm 26, which forms part of the shuttle-carrier, which thus oscillates upon the stud 24.

To the back of the loom-frame at 27 we pivot the levers 28 29, carrying antifriction-bowls 33 34, which lie over two cams 31 32, mounted on the tappet-shaft 5 and by which the levers 28 29 are actuated. The levers 28 29 have turned-up ends for engaging the hooked arms 13 14 when they are moved into the path of the said levers by the rod 12 and connections from the finger-rod 7 of the weft-fork stop-motion.

There is the usual receptacle 35 for full shuttles mounted upon the breast-beam 6 of the loom. In Fig. 1 the receptacle is shown with eight full shuttles 36, while another full shuttle 37 is shown gripped in the carrier-jaws 38, mounted upon the top of the vertical arm 26 and immediately above the forked end 23 of the upright arm 22. After the vertical arm 26 has been moved back positively to the shuttle-receptacle 35 it is returned to the position shown in Fig. 1 by a coiled spring 39, connected at one end to the three-armed lever 20.

When the loom is at work, the principal parts of the automatic shuttle-changing motion remain at rest until the weft fails or breaks, when the weft-fork stop mechanism causes the finger-rod 7 to turn upon its axis

in the ordinary manner, thereby raising the free end of the arm 8 and simultaneously by the chain 9 moving the elbow-lever 10, which by the rod 12 pushes the hooked arms 13 14 into the path of the oscillating levers 28 29, which engage with and lift the hooked arms 13 14, (one, say 13, slightly before the other,) whereby the upright arm 22, with its pusher-fork 23, is raised, and the lathe returning from its rearmost position a slide 40 thereon comes in contact with a stud 41 on the arm 22, and so guides the pusher 23 and forces the shuttle 37, then resting upon it, against the two pieces which form the bottom of the shuttle-box, presses these pieces apart and carries the shuttle into the shuttle-box, and simultaneously lifts and ejects the spent shuttle, which falls away clear of the lathe. Immediately after the arm 22, with its fork 23, has been raised and the shuttles changed, as described, the second hooked arm 14 is raised by its oscillating lever 29 and, through the three-armed lever 20, turns back the arm 26 of the empty carrier to the shuttle-receptacle 35, from which the jaws 38 pick up a full shuttle 36 and the arm 26 is at once returned by the spring 39 to the position nearly under the shuttle-box when the lathe is in its rearmost position, as shown in Fig. 1.

What we claim, and desire to secure by Letters Patent of the United States, is, in the automatic shuttle-changing motion of a loom for weaving—

1. In combination, a shuttle-receptacle, the lathe, a shuttle-box thereon, a reciprocating shuttle-carrier, a forked rod for raising the shuttle from the shuttle-carrier to the shuttle-box, a hooked arm for operating the said forked rod, a second hooked arm connected with the reciprocating shuttle-carrier for operating the same, a pair of oscillating levers for operating the hooked arms, the tappet-shaft, cams thereon for operating the oscillating levers and means for throwing the hooked arms into the path of the oscillating levers, substantially as described.

2. In combination, a shuttle-receptacle, the lathe, a shuttle-box thereon, a carrier for the shuttle comprising an arm 26, means for raising the shuttle from the carrier into the shuttle-box comprising the arm 22 carrying a fork, levers 18 and 20 connected respectively with the arms 22 and 26, hooked arms 13 and 14 connected respectively with the levers 18 and 20, oscillating levers 28 and 29, means for operating the same, and means for throwing the hooked arms into the path of the said oscillating levers, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

RICHARD TALBOT.
WILLIAM ROSSETTER.

Witnesses:

FRED BOOTHMAN,
W. HALSTEAD.