

(No Model.)

2 Sheets—Sheet 1.

F. J. GALLAGHER.  
LOOM.

No. 468,133.

Patented Feb. 2, 1892.

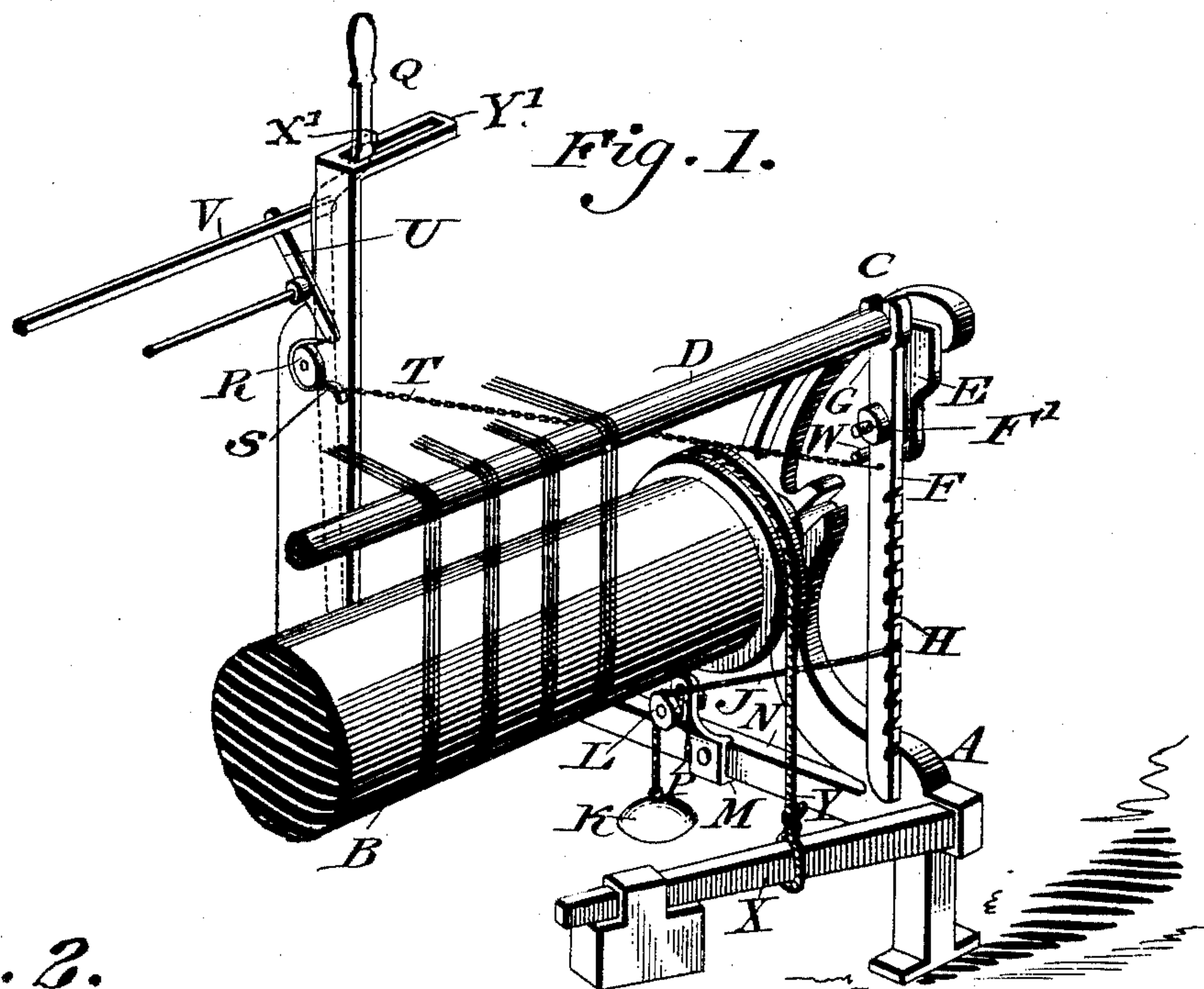
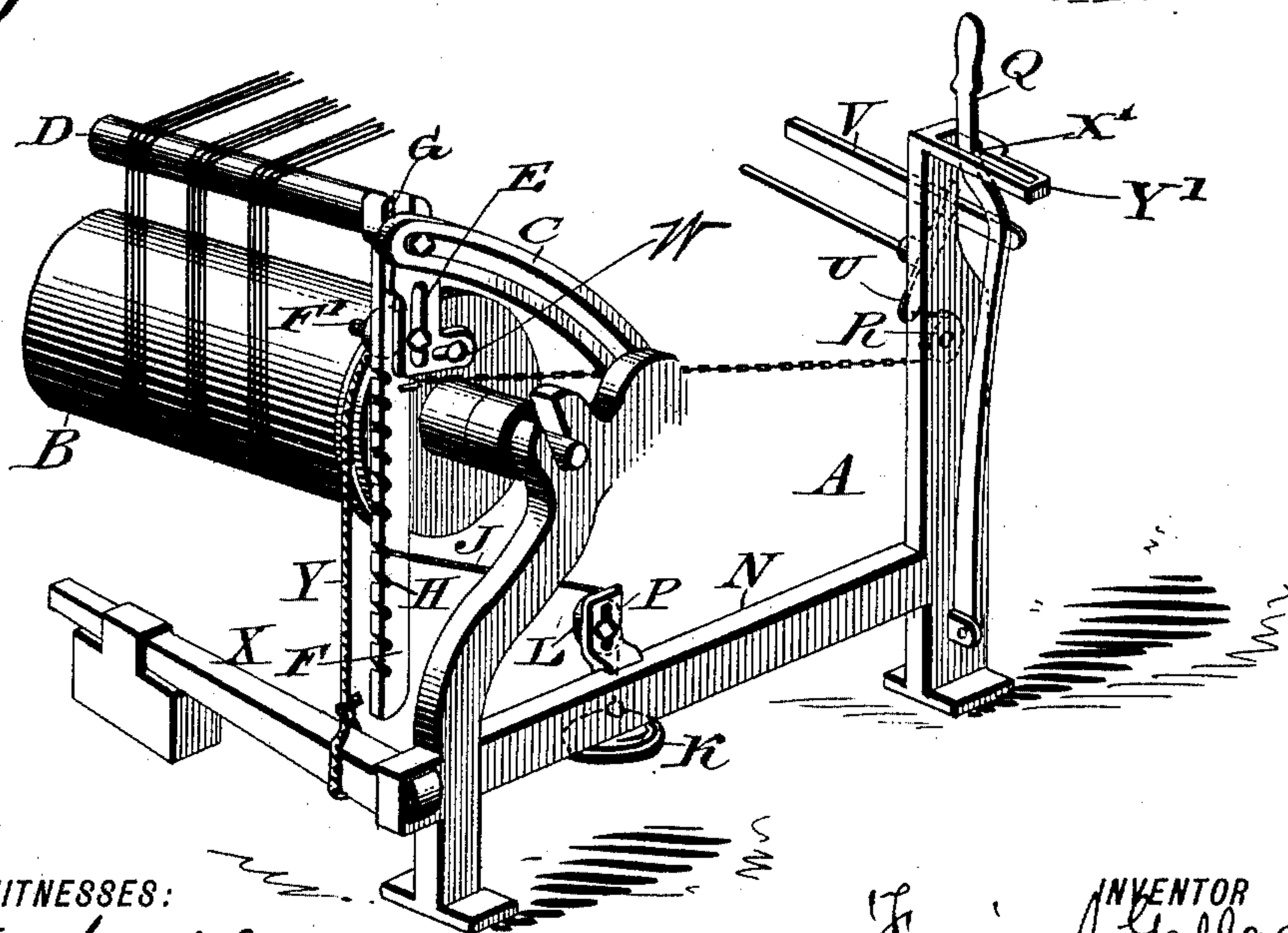


Fig. 2.



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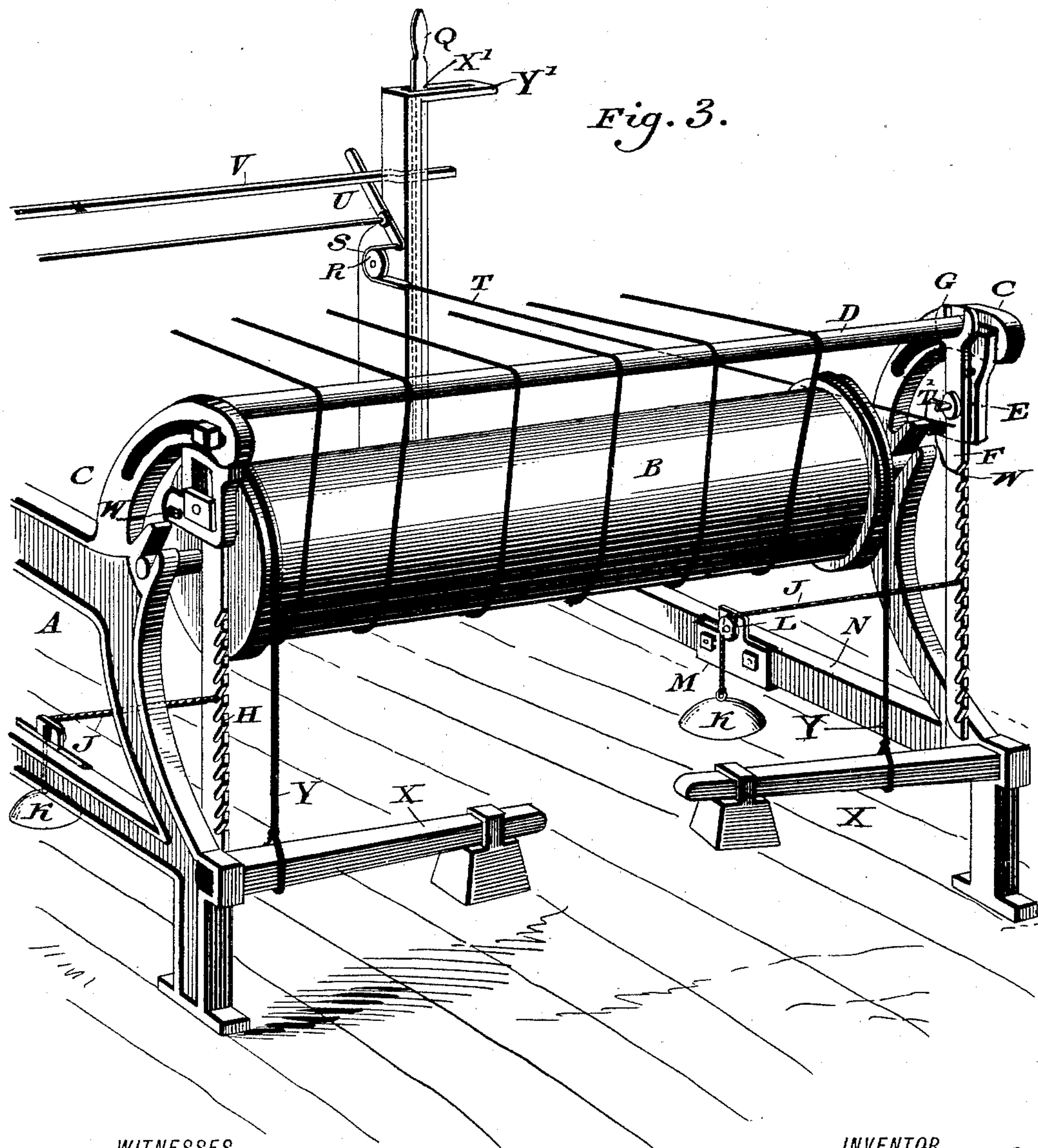
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# UNITED STATES PATENT OFFICE.

FRANCIS J. GALLAGHER, OF PHILADELPHIA, PENNSYLVANIA.

## LOOM.

SPECIFICATION forming part of Letters Patent No. 468,133, dated February 2, 1892.

Application filed March 13, 1890. Serial No. 343,729. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS J. GALLAGHER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Looms, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in tension-rollers for warp-threads; and it consists of the construction and arrangement of the parts, as will be more fully hereinafter set forth, and pointed out in the claims.

It further consists of the combination of parts herein set forth.

Figure 1 represents a perspective view of portions of a loom, showing the features of my invention. Fig. 2 represents a perspective view of the same parts on the opposite side from that shown in Fig. 1. Fig. 3 represents a perspective view of the loom embodying my invention.

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

Referring to the drawings, A designates a portion of the frame of a loom in which the warp-beam B is journaled. Secured on the slotted arms C at the ends of the looms are the hangers E, each having adjustably secured thereto a lever or arm F, pivoted at F' in a slot, and having a forked or bifurcated upper end G to receive the journal of the tension-roller D, around which the warp-threads are passed. The slots in arms C permit a united adjustment of the hangers E and tension-roller D to raise and lower said tension-roller against and away from the warp-threads. The lower end of each of the levers F has the notches H therein for the attachment of a cord J, which passes around a pulley L, mounted on a plate M, properly secured to the frame, said cord having on its end the weight K. The plate M is provided with flanges, which embrace the top and bottom of the cross-bar N of the frame, and has a slot in which the pulley L is adjustably secured.

On the front of the loom is journaled a pulley R, around which is passed a leather or other suitable strap S, connected at one end by a chain or cord T to one of the arms F, and has its other end fastened to a pivoted lever U, which is adapted to come in contact

and thereby move a lever or rod V, engaging the shipping-lever Q.

The warp-beam B is provided with the usual device, consisting of weighted levers X, connected to ropes Y, passing around the heads of said beam, for preventing the slack or looseness in the warp-threads.

The operation is as follows: When the lay beats against the fabric, a jerk on the tension-roller is produced, which often causes the warp-threads to break; but owing to the roller having a bearing in the forked end of the pivoted arms or levers F the said roller is allowed to yield, the levers F rocking on their bearings at F'. The weight K and cords J tend to keep the arm F in contact with a stop-pin W on the hanger E, thereby bracing the said arm F, so that the roller D is prevented from oscillating under ordinary pressure. As will be readily seen, any slight increase of the tension of the threads for any reason will cause the roller D to swing the arms F without necessarily operating the strap S and lever U a sufficient distance to move the shipping-lever. If, however, the shuttle should in its passage become entangled in the shed, so that the tension is greatly increased, the pressure on the upper end of the arm F will cause the lower end H thereof to draw the chain T, so as to move the strap S and the lever U with the cross-rod V a sufficient distance to displace the shipping-lever from the shoulder X' in the slotted projection Y' of the frame, and thereby shift the belts and stop the working of the machine. Springs may, if desired, be employed instead of the weights K.

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

1. A loom having a frame with hangers adjustable in end arms thereof, a tension-roller, arms having forked upper ends embracing said roller, pivoted to said hangers, weighted cords attached to the lower ends of said arms, a shipping-lever, and mechanism between said shipping-lever and one of said arms and adapted to operate said lever, said parts being combined substantially as described.

2. The combination of a frame with arms at one end, a tension-roller, pivoted arms having forked upper ends embracing said roller,



tension devices on the lower ends of said pivoted arms, stops limiting the movement of the pivoted arms in one direction, a shipping-lever, and mechanism, substantially as described, connected with one of the pivoted arms for operating the said shipping-lever, substantially as described.

3. In a loom, a frame with slotted arms at one end, a tension-roller, pivoted arms having upper forked ends embracing said tension-roller and lower ends with tension devices, a shipping-lever, a transverse rod for operating said shipping-lever, a pivoted lever for operating said rod, a pulley, and a strap  
15 working on said pulley and connected at one

end with one of the said pivoted arms and at the other end with the rod-operating lever, said parts being combined substantially as described.

4. The combination of a tension-roller having oscillating bearings, a shipping-lever, a transverse rod, and a lever having mechanism connected with said oscillating bearings and adapted to operate said transverse rod and thereby said shipping-lever, substantially as  
20 described.  
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