

(No Model.)

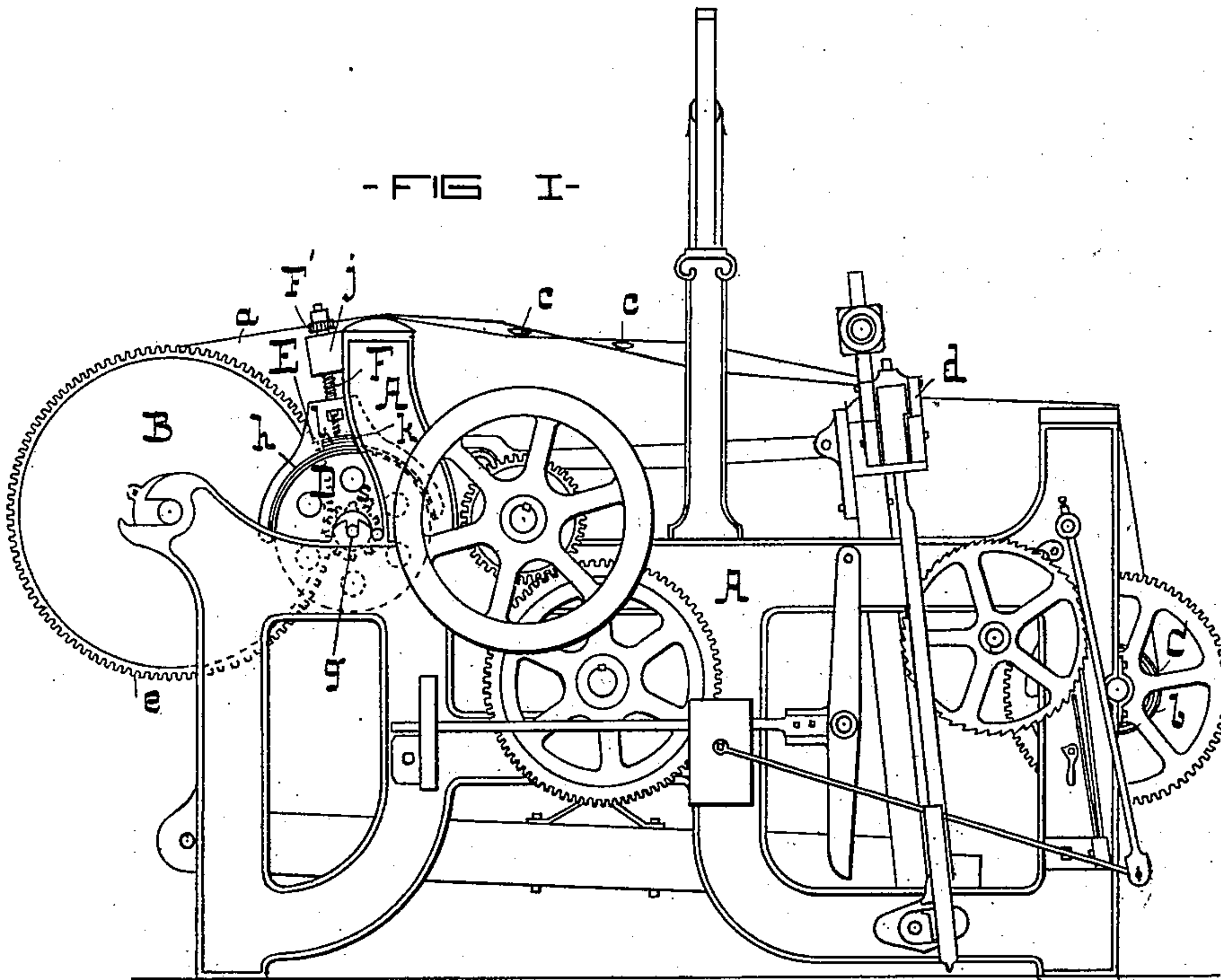
W. B. GAMBRILL & P. RUSSEL.

LET OFF MECHANISM FOR LOOMS.

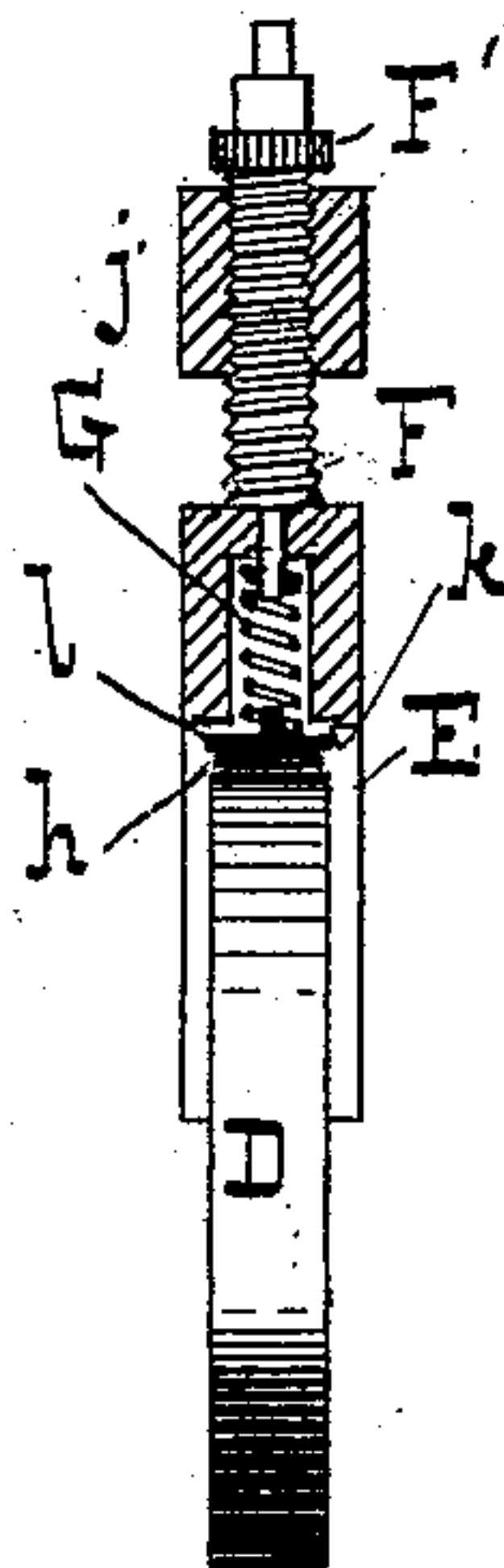
No. 332,887.

Patented Dec. 22, 1885.

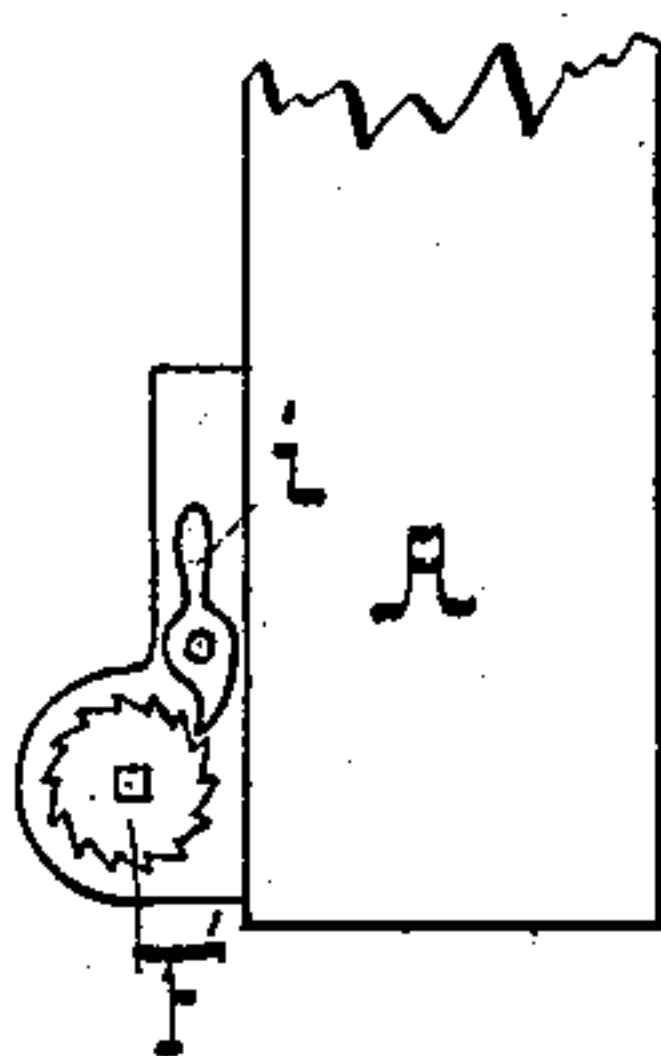
- FIG I -



- FIG III -



- FIG II -



- WITNESSES -

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UNITED STATES PATENT OFFICE.

WILLIAM B. GAMBRILL AND PHILIP RUSSEL, OF WOODBERRY, MARYLAND.

LET-OFF MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 332,887, dated December 22, 1885.

Application filed June 2, 1884. Serial No. 133,497. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM B. GAMBRILL and PHILIP RUSSEL, both of Woodberry, in the county of Baltimore and State of Maryland, have invented certain Improvements in Let-off Mechanisms for Looms, of which the following is a specification.

The object of this invention is to effect in a loom a regular and constant tension of the warp yarns or threads, and to enable the decreasing size of the roll of yarn on the beam to be compensated for, whereby the desired number of picks may be at all times given to the half-inch of cloth.

Our invention consists of a certain improvement in let-off mechanism for looms, as hereinafter described. If the warp-beam of a loom gives too much tension to the warp-yarn, the cloth is found with an increased number of picks to the half-inch, and if the tension of the yarn is reduced below the required point the cloth is made thin or with a reduced number of picks. Now, it is evident that with a full beam the threads are more easily unrolled than when the supply of thread on the said beam is nearly exhausted.

Our invention consists, therefore, in applying to the warp-beam tension-regulating devices, which are under control of the attendant, and may be regulated by him so as to give the desired number of picks under all circumstances.

In the further description of our invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figure I is an exterior side view of the main parts of a loom provided with our improvements. Figs. II and III are views of parts of the invention.

A is the frame of the loom, and B the yarn-beam on which the threads *a*, which constitute the warp, are wound.

C is the cloth-roller on which the cloth *b* is rolled. The lease-rods are denoted by *c c* and the shuttle-box by *d*. The lay forces the filling to the cloth-making point, and draws more warp from the beam. The beam has a circular rack, *e*, which engages with a pinion (shown in dotted lines at *s*) on a shaft, *g*, and on this shaft is secured a friction-pulley, D.

E is a friction-block, the inner edge of which is curved to fit the periphery of the pulley D, and it is lined with leather or other suitable material, *h*, to increase the friction between the parts. The pressure on the friction-block E is regulated by means of a screw, F, which passes through a lug, *j*, fastened to the frame A. The screw F has a ratchet-wheel, F', and pawl *i*, to prevent a backward movement of the screw caused by the jarring of the machine.

In a recess, *k*, in the block E is situated a curved plate, *l*, which bears against the leather lining *h* of the said block.

G is a spring confined between screw F and the plate *l*. The object of the plate and spring is to make the pressure of the block E on the pulley D to some extent yielding. Supposing the loom to be in operation and the beam filled with yarn, the friction-block E is forced into contact with the friction-pulley until such friction is obtained as will give the proper number of picks to the half-inch of cloth. The manufacture of the cloth is continued until there are indications that the number of picks are being increased, when the screw F is slackened and the resistance which the beam offers to the unwinding of the warp reduced until the proper number of picks is re-established.

In the foregoing we have not described all the parts of the loom or their operation, but only such as are necessarily affected by the operation of the invention.

We claim as our invention—

The yarn-beam B, having the circular rack *e*, shaft *g*, pinion *s* on the shaft *g*, in gear with the said circular rack, and friction-pulley D on the shaft *g*, combined with the loom-frame having the threaded lug *j*, projecting from and forming a part thereof, screw F, which passes through the said threaded lug, curved block E, resting on the friction-pulley and provided with the recess *k*, curved plate *l*, situated in the recess *k*, and spring G, substantially as and for the purpose specified.

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Witnesses:

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