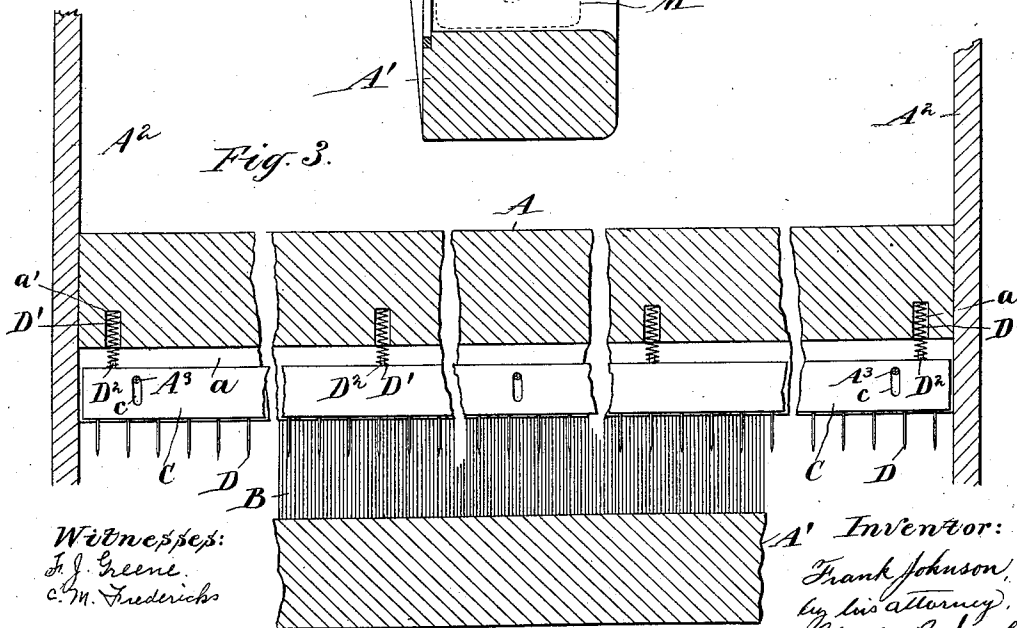
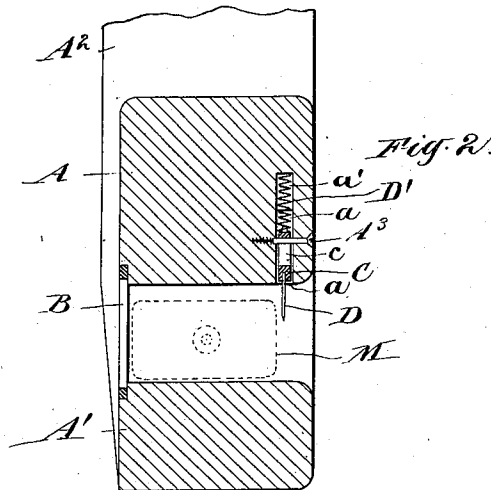
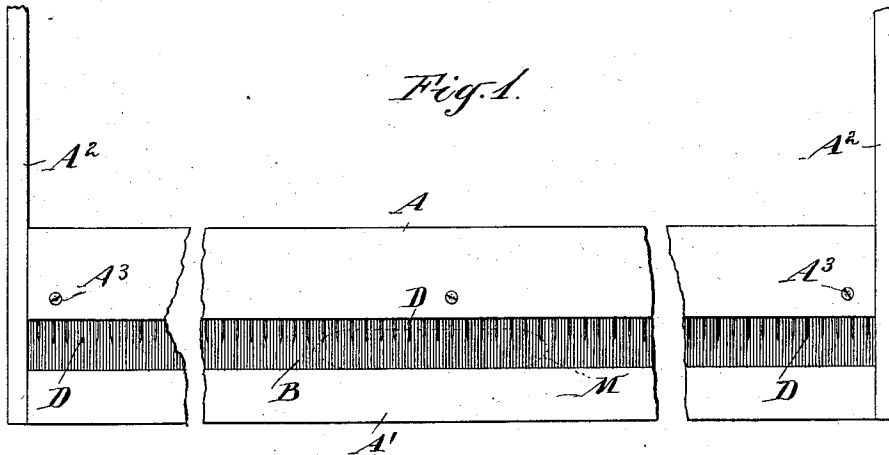


F. JOHNSON.
SHUTTLE GUARD.
APPLICATION FILED APR. 8, 1911.

1,019,050.

Patented Mar. 5, 1912.



UNITED STATES PATENT OFFICE.

FRANK JOHNSON, OF NEW YORK, N. Y.

SHUTTLE-GUARD.

1,019,050.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Application filed April 8, 1911. Serial No. 619,689.

To all whom it may concern:

Be it known that I, FRANK JOHNSON, a citizen of the United States, residing in the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful Improvement in Shuttle-Guards, of which the following is a specification.

The invention relates to looms for weaving wire fabrics of the character used in paper-making, and known as Fourdrinier cloth, and particularly to the lay structure of such looms.

The object of the invention is to provide means, as a series of pins carried by the lay and interposed between the warp wires of the upper portion of the shed, for guiding the shuttle in its traverse along the lay and thus preventing injury to the fabric by the escape of the shuttle from its path, such guiding means being yieldingly mounted to avoid distortion of the warp wires due to the harsh action thereon of the relatively fixed pins usually employed.

The invention consists in certain novel features and details of construction and arrangement by which the above object is attained, to be hereinafter described.

The accompanying drawings form a part of this specification and show an approved form of the invention.

Figure 1 is a front elevation of a portion of the lay and reed thereon. Fig. 2 is a vertical section on a larger scale, taken transversely of the lay. Fig. 3 is a corresponding vertical section taken longitudinally of the lay and partly in elevation.

Similar letters of reference indicate the same parts in all the figures.

A is the upper member or lay-cap of the lay, and A¹ the lower member or lay-beam, supported by the swords A² A² pivoted above as in the usual types of overhung looms of this character.

B is the reed through which extend the warp wires, not shown, operated by heddles and harness in any approved manner as will be understood.

A longitudinal groove *a* is produced in the under face of the lay-cap near the forward edge, in which is received a strip C, which may be of wood or other light material, aluminum being preferred as possessing the requisite lightness, strength and stability of form, carrying a series of downwardly projecting pins D adapted to extend

between the warp wires of the upper portion of the open shed, and forming with the lay members and reed a partially inclosed path for the shuttle, indicated by dotted lines at M, in which the shuttle is positively guided. The strip C fits loosely in the groove *a* and is free to rise and sink therein, guided by screws or studs A³ inserted from the front of the lay-cap and extending through vertical slots *c* in the strip. The latter may rise to an extent permitted by the slots and sink by gravity, thus affording the required yielding quality, but to insure the descent of the strip, recesses *a*¹ *a*¹ are bored in the lay-cap from the groove *a* in which light helical springs D¹ D¹ are inserted abutting at their lower ends against the upper edge of the strip and held in position on the latter by inclosing short studs or bosses D² D² thereon. Thus equipped the contact of the pins with the warp wires either in the act of opening the shed, or in the swing of the lay, is softened sufficiently to permit the taut wires to accommodate themselves to the pins without distortion, breakage or other damage, the tension of the springs being so slight as to permit the strip to yield to such contact by lifting momentarily while the engaged wire or wires escape to one side or the other of the contacting pins, and thus avoid or materially lessen the danger of injury to the delicate fabric caused by harsh unyielding contact of the fixed pins when such are employed.

Although the strip is shown and described as a single member extending the entire length of the lay-cap, it will be understood that it may be of two or more sections each yieldingly mounted, arranged end-to-end to form the whole, and other modifications may be made in the forms, proportions, and arrangements of parts as may be found necessary or desirable in adapting the invention for service under various conditions or with various types of looms.

I claim:—

1. In a loom, a lay-beam, reed, and lay-cap, the latter having a longitudinally extending groove in its lower face, a strip received in said groove with liberty to rise and sink therein, and having vertical guiding slots, studs in said lay-cap extending through said slots, recesses in said lay-cap above said groove and strip, and springs mounted in said recesses and tending to

hold said strip yieldingly in the downward position, all substantially as and for the purpose herein set forth.

2. In a loom, a lay-beam having upper
5 and lower members, the upper member being provided with a longitudinal groove in its under face near its forward edge, a strip
10 received in said groove, pins projecting downwardly from said strip and adapted to extend between the warp wires of the
15 upper portion of an open shed, said strip being mounted for free vertical movement in said groove, limiting and guiding means
extending through said groove and through
the groove acting upon the upper face of
the strip.

3. In a loom, a lay-beam having upper
20 and lower members, the upper member being provided with a longitudinal groove in its under face near its forward edge, a strip

received in said groove, pins projecting
downwardly from said strip and adapted
to extend between the warp wires of the upper
portion of an open shed, said strip being
25 mounted for free vertical movement in said groove, limiting and guiding means
extending through said groove and through vertical slots in the strip, springs in the
groove acting upon the upper face of the
30 strip, and a reed, said pins forming with the lay members and reed a partially inclosed path for the shuttle and said pins
when projected extended below the upper
face of the shuttle.

In testimony that I claim the invention
above set forth I affix my signature, in presence of two witnesses.

FRANK JOHNSON.

Witnesses:

CHARLES R. SEARLE,
FLORENCE J. GREENE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."