(No Model.)

A. AINLEY.

PICKING MECHANISM FOR LOOMS.

No. 599,676. Patented Mar. 1, 1898.

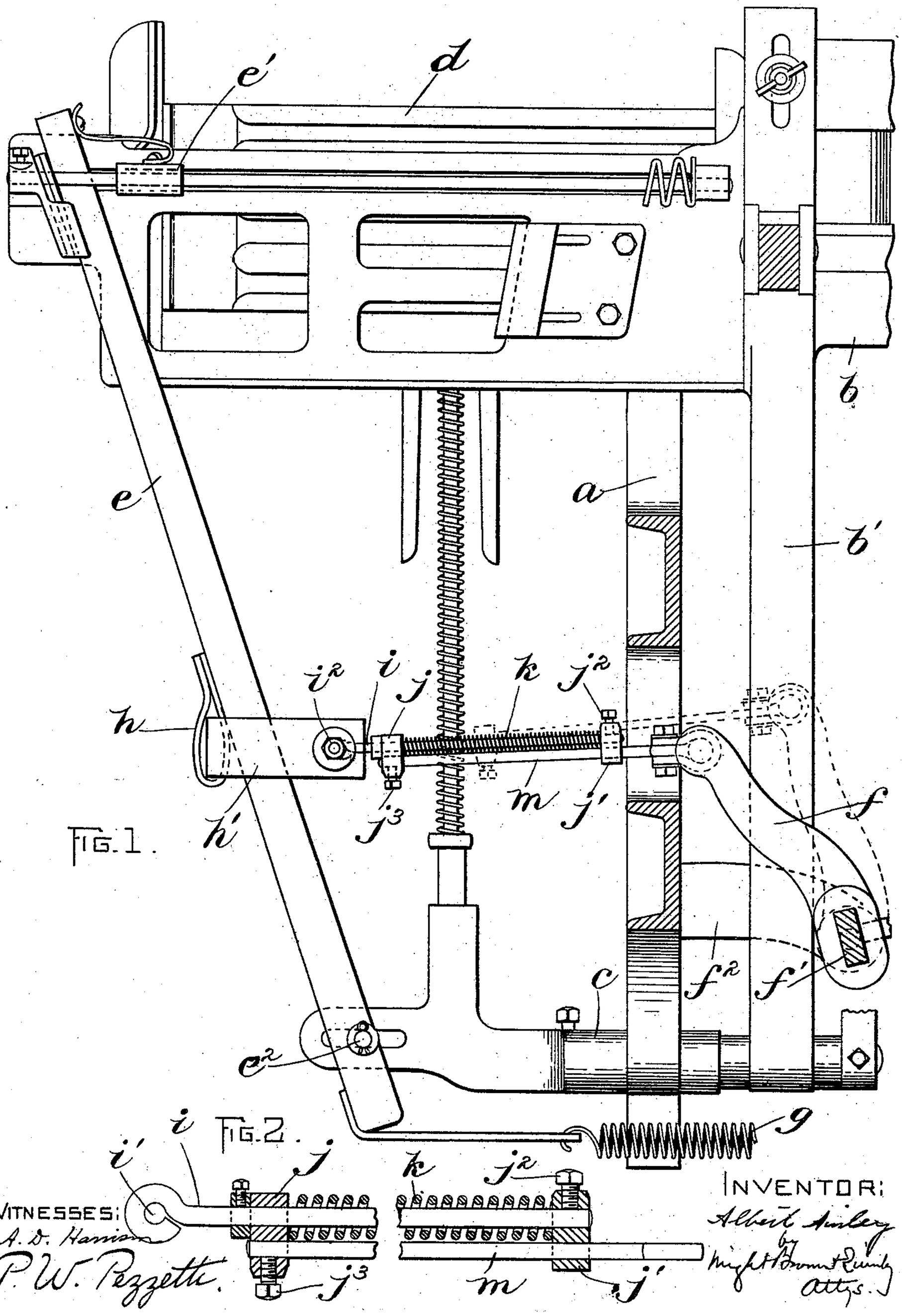

FIG. 1.

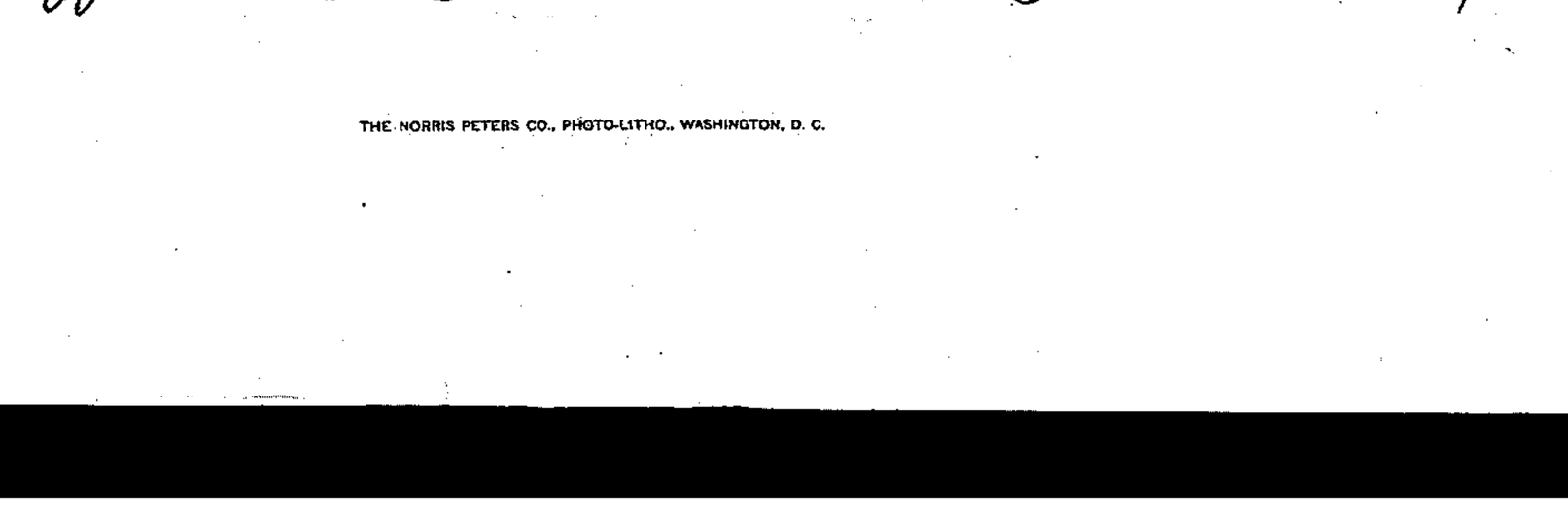

FIG. 2.

WITNESSES:
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UNITED STATES PATENT OFFICE.

ALBERT AINLEY, OF PLYMOUTH, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO H. EARL MABBETT, OF SAME PLACE.

PICKING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 599,676, dated March 1, 1898.

Application filed May 17, 1897. Serial No. 636,893. (No model.)

To all whom it may concern:

Be it known that I, ALBERT AINLEY, a subject of the Queen of Great Britain, residing at Plymouth, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Picking Mechanism for Looms, of which the following is a specification.

In the operation of looms it not infrequently happens that the shuttle becomes wedged or obstructed in the shuttle-box so firmly as to resist the stroke of the picker which would throw the shuttle across the loom. When this occurs, it usually causes a breakage of the picker-staff or of some of its actuating parts, because of the unyielding construction of these parts as ordinarily found in looms.

My invention has for its object to provide a yielding operating mechanism for the picker-staff by virtue of which breakage of the parts is obviated in case of obstruction offered to the picker.

A further object of the invention is to diminish the destructive or wearing effects due to the normal operation of the picking mechanism.

The invention consists in the improvements which I shall now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents, in side elevation, the picking mechanism and adjacent parts in a loom embodying my improvements. Fig. 2 represents, in vertical section, on a larger scale, the particular features constituting my invention.

The same reference characters indicate the same parts in both figures.

Referring to the drawings, the letter *a* designates a portion of the framework of the loom; *b*, the lay or batten; *b'*, one of the lay-swords supporting the lay *b*, and *c* the rock-shaft on which the lay oscillates. *d* designates the shuttle-box, *e'* the picker, and *e* the picker-staff, which is pivoted at e^2 to the rock-shaft *c*, is actuated by the crank-arm *f*, and is retracted after its shuttle-throwing stroke by a spring *g*, connected with the heel of the picker-staff. All of these parts are constructed and arranged to operate as usual.

In place of the usual rigid connecting piece or rod which is ordinarily used to connect the oscillating crank-arm *f* with the picker-staff *e* I provide an improved yielding connection constructed as follows: By means of straps or loops *h* and *h'* a rod *i* is attached to the picker-staff *e* at a suitable point above its pivot e^2, the said rod having an eye *i'*, through which passes a bolt i^2 on the strap *h'*. The rod *i* passes through apertures in two blocks or collars *j j'* and is rigidly secured to the farther block *j'* by means of a set-screw j^2. A second rod *m* is arranged below the rod *i*, passes through other apertures in the blocks *j j'*, being secured at one end to the block *j* by a set-screw j^3 and at the other end to the crank-arm *f* by means of a pivotal connection. A spring *k*, surrounding the bar *i*, is interposed between the blocks *j j'*, which constitute abutments therefor.

The arm *f* is supported on a shaft *f'*, which is journaled in a bracket f^2 on the frame *a*. A cam operates to trip the arm *f* in the usual manner, thereby swinging the picker-staff *e* and throwing the shuttle. The spring *k* is of sufficient stiffness to overcome the inertia of the picker-staff and shuttle, and the whole mechanism normally operates as though there were a rigid connection between the arm *f* and the picker-staff *e*, except that the spring *k* diminishes the destructive wear caused by impact of the picker-staff and by the rapid changes in the direction of movement. It will readily be seen, however, that should the picker become obstructed through wedging of the shuttle or other cause the spring *k* will yield and permit the full travel of the crank-arm *f*, while the picker-staff is restrained. In this way breakage of the parts is prevented, the loom being stopped by the usual knock-off mechanism before the arm *f* has made its next stroke.

The tension of the spring *k* may be regulated by changing the distance between the blocks or collars *j j'*.

From the above description it will be seen that I have accomplished the objects of my invention, as hereinbefore stated, and provided an improved resilient connection which may be applied to any loom having a picking mechanism similar to that above described.

I claim—

1. In a mechanism of the character specified, the combination of a picker-staff pivoted

at one end, a shaft, an oscillating crank-arm rigidly secured to said shaft for actuating said picker-staff, and a resilient connection between said arm and said picker-staff, the said connection including a spring adapted to remain substantially unyielding when said crank-arm impels the picker-staff, but adapted to yield when said picker-staff is obstructed, as set forth.

2. In a mechanism of the character specified, the combination of a picker-staff pivoted at one end, a shaft, an oscillating crank-arm rigidly secured to said shaft for actuating said picker-staff, and a resilient connection between said arm and said picker-staff, comprising a rod connected with the picker-staff and having an abutment, a rod connected with the crank-arm and having an abutment, and a spring interposed between said abutments and surrounding one of said rods.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 13th day of May, A. D. 1897.

ALBERT AINLEY.

Witnesses:
ALLEN LOFT,
GEO. MABBETT.