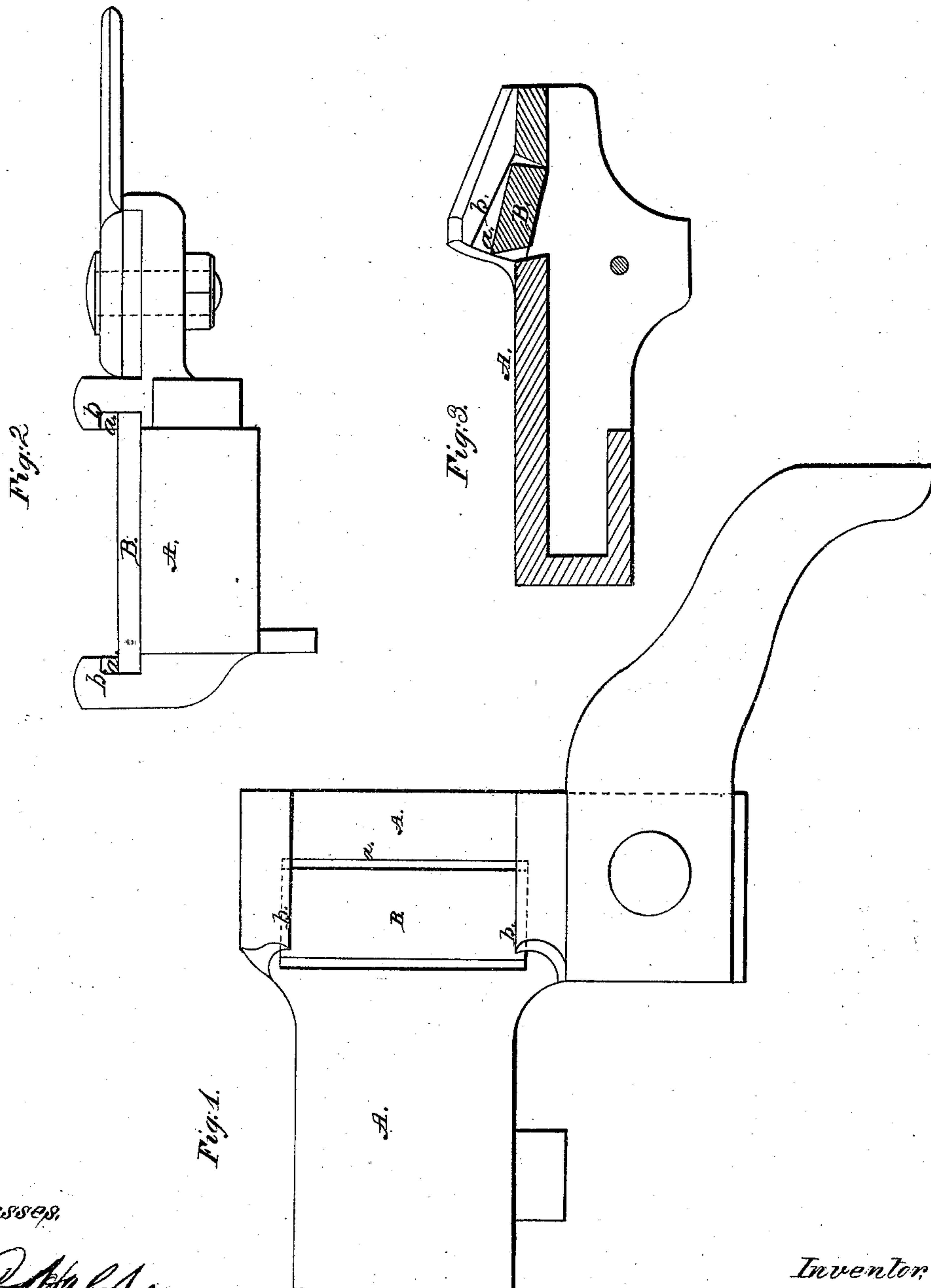


G. Drayer.
Loom Stop Motion.

N^o 39,723.

Patented Sept. 1, 1863.



Witnesses,
F. A. Hall,
Frederick Curtis.

Inventor,
George Drayer

UNITED STATES PATENT OFFICE.

GEORGE DRAPER, OF MILFORD, MASSACHUSETTS.

IMPROVEMENT IN STOP-MOTIONS FOR LOOMS.

Specification forming part of Letters Patent No. 39,723, dated September 1, 1863.

To all whom it may concern:

Be it known that I, GEORGE DRAPER, a resident of Milford, in the county of Worcester and State of Massachusetts, have made a new and useful Improvement in the Stopping Mechanism of a Loom; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a front elevation, and Fig. 3 a longitudinal section, of my invention in its construction and application to the arm or that part of a loom which serves to operate the "shipper."

My invention has reference to that part of a loom which is intended to arrest the operations of the loom whenever a shuttle, during its flight across the race-beam, may fail to pass properly into the shuttle-box toward which it may be directed. It is well known that such a failure is apt to be productive of injury to the warps as well as to the loom unless the loom be stopped in its action in time to prevent such consequences.

Looms are usually provided with a shaft applied to the lay, and extending nearly its whole length, and having a finger or projection at each end. Each of these fingers rests against one of the shuttle-binders. From the said shaft there also projects what is usually termed a "protector" or "dagger." The fingers of the shaft are respectively pressed against the shuttle-binders by springs. In entering either shuttle-box the shuttle will press against and move the binder thereof, so as to cause the finger next adjacent to such binder to be moved in a manner to turn or rotate the shaft a little, and thereby raise the dagger more or less. The dagger while so raised is elevated sufficiently to pass just clear of the frog or abutment of the shipper-actuator, while the lay may be moving either backward or forward, and provided the shuttle may have properly passed into its box; but in case the shuttle should not have properly entered a shuttle-box, the dagger will remain down in a lower position—that is, such a one as would cause it to be forced endwise against the frog when the lay may be in the act of moving backward or toward the breast-beam. The movement of the dagger against the frog will cause the shipper actuator to be forced against the shipper in manner to press it away

from the device by which it may be held in position. Under such circumstances the shipper will be moved by its spring so as to produce a movement of the driving-belt from the fast to the loose pulley of the driving-shaft of the loom, thus effecting the stoppage of the loom. The frog, as heretofore applied to the shipper-actuator, has been stationary relatively to it. Under these circumstances the frequent impacts of the dagger against the frog have a tendency to wear it, and particularly at the upper part of its front edge, where it is liable by reason of such wear to become more or less rounded and injured. Such a wearing away of the frog is likely to cause the dagger to slip off the frog, and thus not properly force back the shipper-actuator.

My invention is intended to prevent such wear of the frog or to obviate the difficulty arising therefrom; and it consists in the application and construction of the frog and its supports in such a manner as not only to cause the frog to rise, but be stopped or arrested in its rise during the impact of the dagger, the whole being substantially in manner and for the purpose as hereinafter described.

In the drawings, A denotes the shipper-actuator as provided with a frog, B. This frog is movable within the actuator, and consists of a piece of metal having the form of a trapezoid in its cross-section, as shown in Fig. 3. It is placed within a seat or recess, *a*, made within the body of the actuator, and has its rear edge abutting against the rear part of such recess. The said recess is provided with stopping-lips *b b*, which rise against and above the two ends of the frog and project toward one another and over the frog, as shown in the drawings. These lips serve to arrest the upward movement of the frog under an impact of the dagger. That edge of the frog against which the dagger is to operate stands a little inclined to the direction of movement of the dagger, in order that immediately on the frog being struck by the dagger such inclination of the edge will serve to facilitate the upward movement of the frog relatively to the dagger. By the frog so moving upward and against the lateral extensions of the stopping-lips the upper part of its front edge, or that part against which the dagger first impinges, will be elevated so far before any movement of the shipper-actuator can take place as to prevent

the percussion of the dagger required to effect such movement from doing injury to said upper part. As soon as the dagger may depart from the frog, the latter, by the action of gravity, will be caused to fall into its lowermost position.

I do not claim a frog as usually employed with and applied to a shipper-actuator; but

What I do claim as my invention or improvement is—

The application and construction of the frog and its supports in such manner as not only to cause the frog to rise, but to be stopped in its rise under impact or operation of the dagger, the whole being substantially as and for the purpose as hereinbefore described.

GEORGE DRAPER.

Witnesses:

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F. P. HALE, Jr.