

C. Miller.
Loom.

N^o 56,976.

Patented Aug. 7, 1866.

Fig: 1.

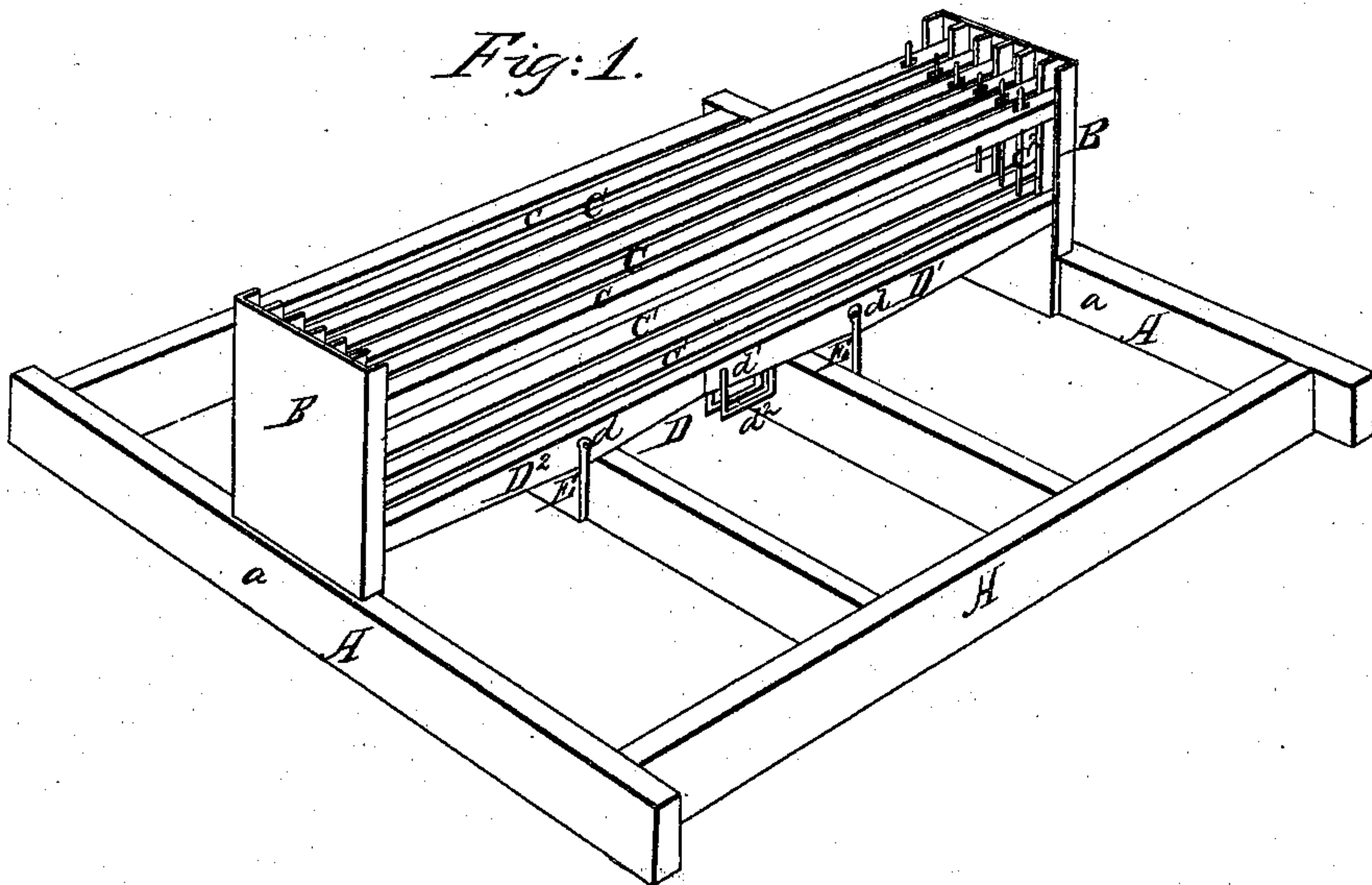
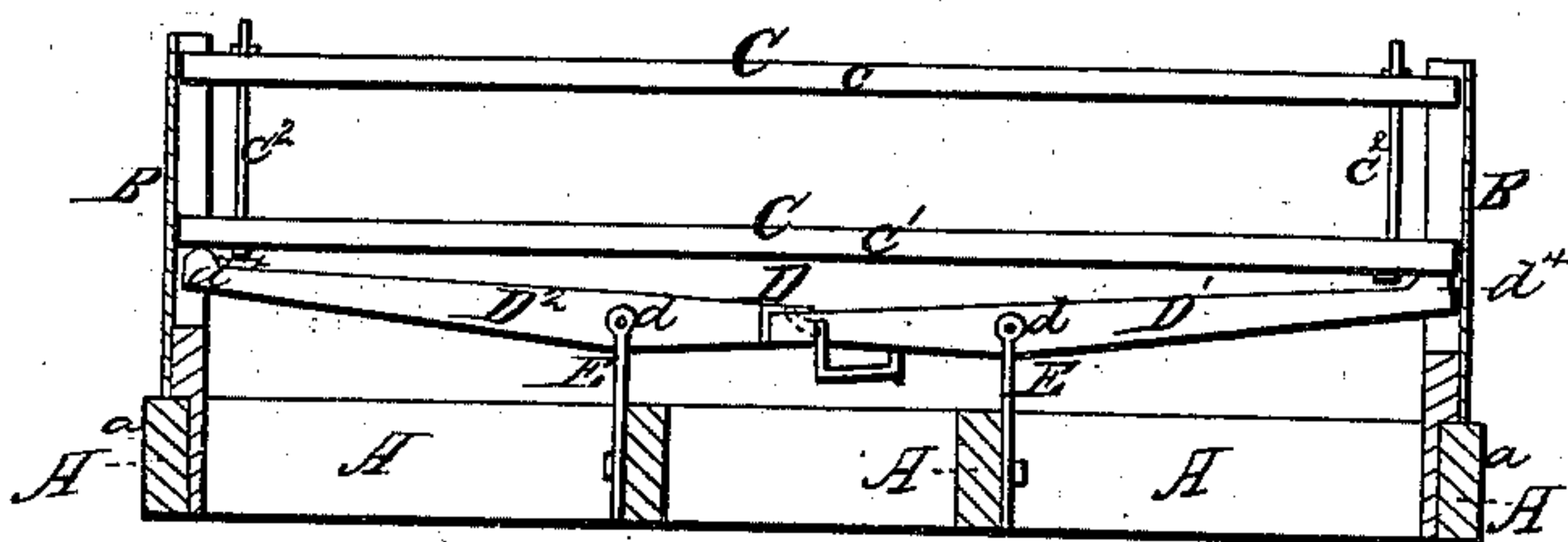


Fig: 2.



Witnesses:

Chas^t W. Boyle.
Geo. P. Kenzie Jr

Inventor:

Charles Miller.

UNITED STATES PATENT OFFICE.

CHARLES MILLER, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN HARNESS-MOTIONS FOR LOOMS.

Specification forming part of Letters Patent No. 56,976, dated August 7, 1866.

To all whom it may concern:

Be it known that I, CHARLES MILLER, of the city and county of St. Louis, and State of Missouri, have invented a new and useful Improvement in Loom Harness-Motions; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference thereon.

Of said drawings, Figure 1 is a general perspective view, showing the parts acting to accomplish my improved motion; and Fig. 2 is a front elevation of the same.

It is well known that in the operation of looms there are certain guide-frames for the woof-threads, which must perform a simple vertical reciprocating motion. Various arrangements of mechanical devices have been used to accomplish this vertical motion of the harness-frames, and as the devices heretofore in use are subject to many objections, I have made the nature of my improvement to consist in a simple connection of levers actuated jointly from the power-sources, and and in the action of said levers at their other ends to raise the harness-frames before mentioned. The downward motion of the frames is accomplished by their own gravitation. It will therefore be seen that by properly connecting these levers their ends may be made to traverse equal vertical distances in equal times, both in upward and downward motion. If, therefore, the lower surface of the harness-frame remains constantly in contact with the upper edge of said levers, then the vertical motion of the frames will at all times proceed with regularity and security.

To enable those skilled in the arts to make and use my said invention, I will proceed to describe its construction and operation, giving special prominence to those parts only which are particularly connected with and form parts of my invention.

I construct the loom-frame A in the manner usual. On the side pieces, *a*, thereof I arrange the guide-frame pieces B. In these it is intended that the vertical motion of the harness-frames shall take place. Said guides B are arranged and shaped about in the manner shown in Fig. 1. They contain as many separated guideways as there are frames.

These ways being open at the top, the frames C may be placed into them.

Now, it is the object of my invention to give a vertical motion to these frames C. To accomplish this object I employ the double levers D, which pivot on the journals *d* in the fulcrum-standards E. These standards are supported on the inner pieces of the frame A. Said levers D act in unison. They receive at *d'* a stirrup, *d*². One shank of this stirrup is permanently secured in the lever D'; the other shank passes through D' in a horizontal direction, and passes into a slot of D², these parts being so arranged to allow a rocking motion upon each journal *d*, and this preserves the connection of the connected ends of D' and D².

I do not confine myself, however, to this one mode of connecting said ends of the levers D' and D². Many equivalent arrangements may be devised equally suited to cause the rear ends, *d*⁴, of these levers to make the same vertical motion in equal times when both levers are actuated by other power devices at *d'*.

The ends *d*⁴ are rounded, and on the upper surfaces of said ends the frames C rest immediately; or a friction-roller may be interposed at each place to further produce a smooth and regular motion.

To the stirrup *d*² there will usually be attached a simple leather strap, which connects with a treadle-lever. To this motion is imparted either by a cam or by the usual treadle devices.

It will then be seen that when motion is imparted in a general vertical direction to the stirrup *d*², this motion is transmitted equally to the forward ends of the levers D' and D², and the levers being themselves properly constructed, the rear ends, *d*⁴, perform exactly alike vertical motions, causing the frame C to rise in a uniform and steady manner. When the rear ends, *d*⁴, descend by gravitation, the frames C follow, and in this downward motion the frame is again compelled to a uniform and steady motion by the ends *d*⁴ of the levers aforesaid.

The frames C may be themselves used as harness-frames, but they more usually will be arranged to receive the harness-frames. For this purpose the top and bottom bars, *c* and *c'*,

of C, being joined by the bolt-rods c^2 , may be moved apart, and the harness-frames placed between said parts. If the bolts on c^2 are then drawn tight the frames will be secured.

To secure against any lateral motion there may be suitable projections on the harness-frame to fit into suitable mortises of c and c' . Then as the nuts on c^2 are drawn tight all motion is prevented.

Usually the parts c and c' will be wrought-iron. The standards E and the levers D will be cast-iron.

Having thus fully described my invention, what I claim is—

The arrangement and application of a set of levers, D' and D², to produce the loom harness-motion, substantially as set forth.

CHARLES MILLER.

Witnesses:

GEO. P. HERTHEL, Jr.,
M. RANDOLPH.