

(No Model.)

H. WYMAN.

SHEDDING MECHANISM FOR LOOMS.

No. 385,691.

Patented July 3, 1888.

Fig. 1.

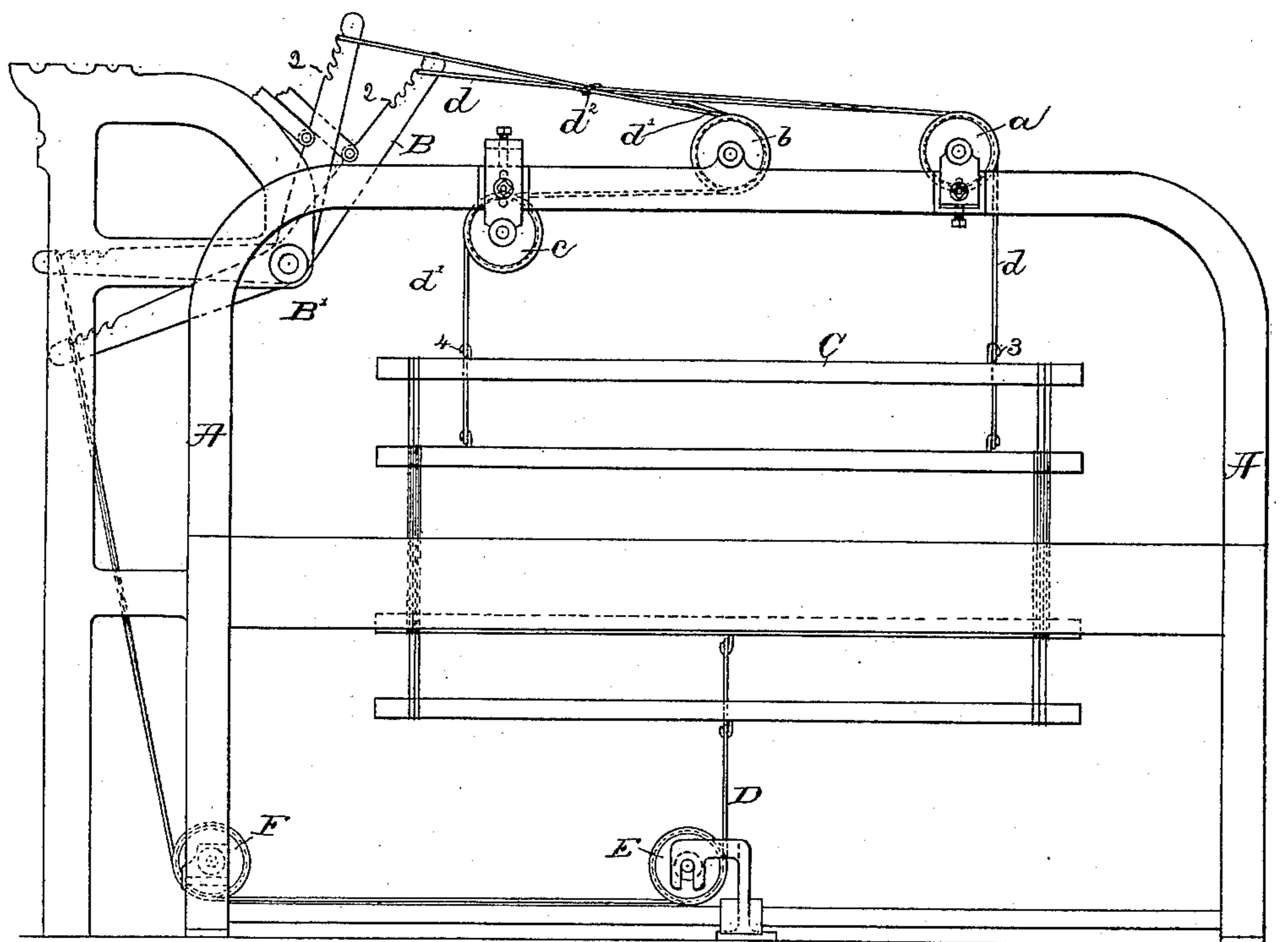
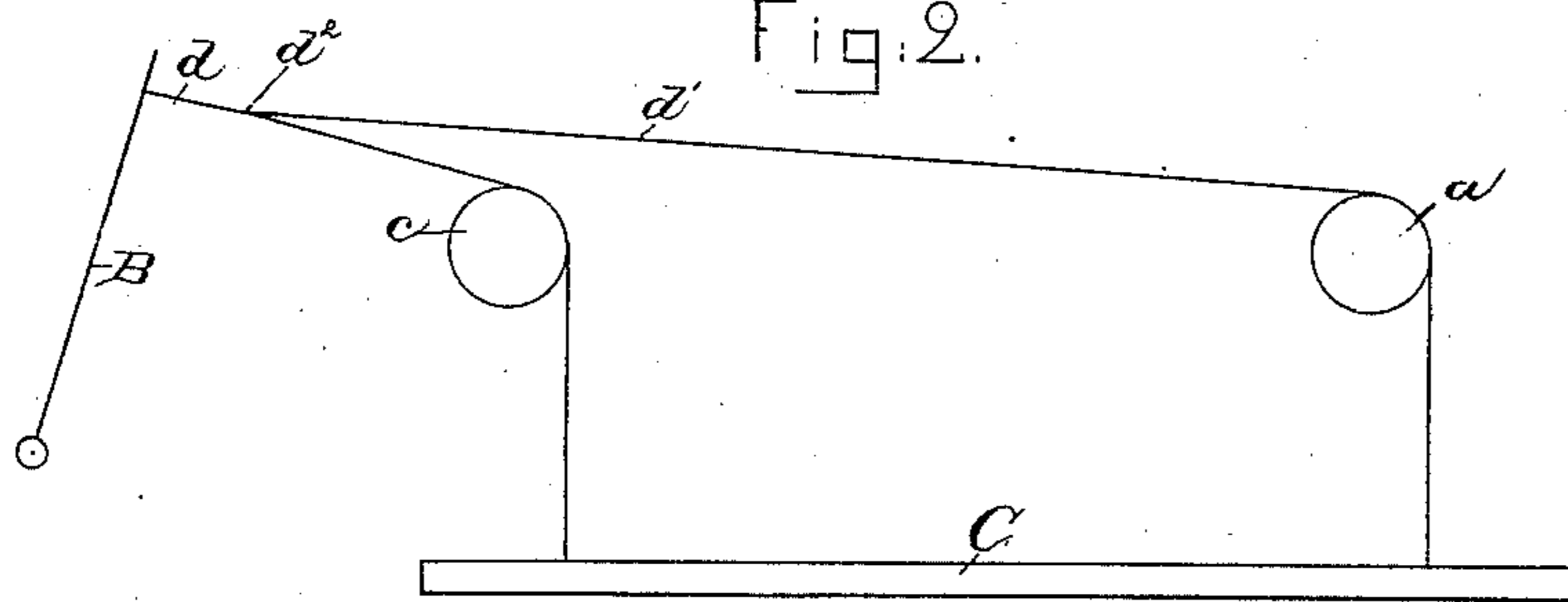


Fig. 2.



Witnesses.

Howard F. Eaton.

John F. C. Printkesh.

Inventor.

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by Lemby & Gregory, Attys.

# UNITED STATES PATENT OFFICE.

HORACE WYMAN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO THE  
CROMPTON LOOM WORKS, OF SAME PLACE.

## SHEDDING MECHANISM FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 385,691, dated July 3, 1888.

Application filed February 2, 1888. Serial No. 262,805. (No model.)

*To all whom it may concern:*

Be it known that I, HORACE WYMAN, of Worcester, county of Worcester, and State of Massachusetts, have invented an Improvement in Shedding Mechanism for Looms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 In fancy-loom, wherein the harness-frames are connected at top near their opposite ends to cording joined to notched or graduated harness-levers, especially when the said levers have their fulcra near the top of the loom above the crank-shaft, great difficulty has been experienced in moving the opposite ends of the harness-frames over uniform distances or in unison from one and the same lever, for in this form of loom it is very essential, in order to economize space, that the fulcra of the said levers be brought closely to the harness-frames; but in doing this, and by the employment of but two sheaves for each harness-frame—one above each end of the frame—the angle of the connection between the lever and the sheave on its way to that end of the harness-frame nearest the fulcrum of the said lever is much more acute than the angle in the connection going from the same lever over the sheave farthest from the fulcrum of the lever and to the opposite end of the harness-frame, and as a result of placing the connections in such different lines the connections are drawn unevenly or under such unlike conditions that the end of the harness-frame nearest the fulcrum of the harness-lever is not lifted as high as its opposite end.

In practice and in my efforts to attain high speed in fancy-loom I have discovered that the closer together the journals of the rolls or sheaves over which the connections run on their way to the harness-frames the less the variation in effective movement of the connections between the harness-levers and the opposite ends of the harness-frame. So, also, in practice for rapid-running looms the centers of the sheaves referred to should be located above the fulcra of the harness-levers for such distance that the tops of the sheaves should rest in a plane above the fulcra of the harness-levers for

a distance about the same as the distance between the said fulcra and the notches of the said levers nearest their fulcra, for thereby when the harness-connections are in any one of the adjusting-notches of the levers the said connections will both remain properly seated in the said sheaves, notwithstanding the short curves in which the said harness-levers are moved. In my experiments to overcome this inequality of draft I have placed the usual roll to receive the connection extended between the harness-lever and the end of the harness-frame nearest the fulcrum of the harness-lever closer than heretofore to the sheave over which is extended the fellow connection between the same lever and the opposite end of the harness-frame, and I have added to the loom an auxiliary compensating sheave, it acting upon the connection between the harness-frame at that end thereof nearest the fulcrum of the harness-lever, said auxiliary or compensating sheave being located immediately above the end of the harness-frame and supporting the said connection between the main sheave and the end of the harness-lever, as will be described.

My invention consists in the combination, with a series of harness-levers having their fulcra at the top of the loom-frame, above the harness-frames, a series of harness-frames, and three sets of sheaves located at the top of the loom-frame, of connections, substantially as will be described, extended over the sheaves and joined to the opposite ends of the harness-frames at their upper sides.

Figure 1 in elevation shows a sufficient portion of a loom with my improvements added to enable my invention to be understood, and Fig. 2 a diagram showing the usual connection upon which this invention is an improvement.

The loom-frame A, notched or graduated harness-levers B, pivoted at B', the harness-frame C, cording D, and sheaves E F are all as common. The top of the loom-frame has mounted on or secured to it three sets of sheaves, *a b c*, two of which, as *a b*, are at substantially the same height, the tops of the said sheaves being located above the horizontal plane in which is located the fulcrum B' for a

distance about the same as the distance of the innermost notch, 2, of the harness-lever from the said fulcrum.

5 The harness-connection between the upper end of the harness-lever B and the upper side of the harness-frame operated by it consists of a strap or cord, *d*, having a branch, *d'*, which is attached to it at *d''*.

10 The portion *d* of each strap or cord connection is led over one of the sheaves *a* and attached to a harness-frame near one end, as at 3, while the part *d'* is extended about one of the sheaves *b* and then over one of the sheaves *c*, after which the said part *d'* is connected to the op-  
15 posite end of the harness-frame at 4. The strap or cord connections between the opposite ends of the harness-frame and the upper end of the harness-lever are of nearly the same length, and passing each over a sheave or  
20 sheaves, and thence down to one end of the harness-levers, the strain on the strap or cord connections being substantially uniform.

By extending the connections *d d'* over the sheaves, as shown, it is possible in all adjust-  
25 ments of the cording in the notches of the harness-levers to lift the opposite ends of the harness-frames uniformly.

The harness-frames are here shown as connected at their lower sides by cording passing  
30 around sheaves and thence to the opposite ends of the levers, from which the cording at the top of the harness-frames is connected; but in place of cording, as described, at the bottom of the harness-frames, any well-known  
35 method of drawing the frames down may be used—as, for instance, springs, as shown in Patent No. 191,317, dated May 29, 1877.

I am aware that in a series of horizontal levers each lever has been connected by two  
40 straps differing greatly in length with the upper sides of harness-frames, one of the said

straps—the shorter one—going from the harness-lever directly to the harness-frame, while the other or longer cord or strap passes under one and over a second sheave on its way to the  
45 top of the harness-frame; but in the plan referred to the strains upon the straps or cords from the lever to the top of the harness-frame are very unequal, and with sheaves and straps or cords thus connected to the top of the frames  
50 the said frames could not be lifted evenly at opposite ends with the same certainty as when the cords or straps between the harness-levers are passed over pulleys, as shown in Fig. 1.

I claim—

1. The combination, with a series of harness-levers having their fulcrums at the top of the loom-frame above the harness frames, and a series of harness-frames, of three sets of sheaves,  
60 as *a b c*, located at the top of the loom-frame, and of strap or cord connections *d d'*, extended, as described, over the said sheaves and joined to the opposite ends of the harness-frames at their upper sides, substantially as described.

2. The combination, with a series of harness-levers having their fulcrums at the top of the loom-frame above the harness-frames, a series of harness frames, cording *D*, and a set of sheaves around which the cording runs, of  
70 three sets of sheaves, as *a b c*, located at the top of the loom frame, and strap or cord connections *d d'*, extended, as described, over the sheaves *a b c* and joined to the opposite ends of the harness-frames at their upper side, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HORACE WYMAN.

Witnesses:

JUSTIN A. WARE,  
S. B. SCHOFIELD.