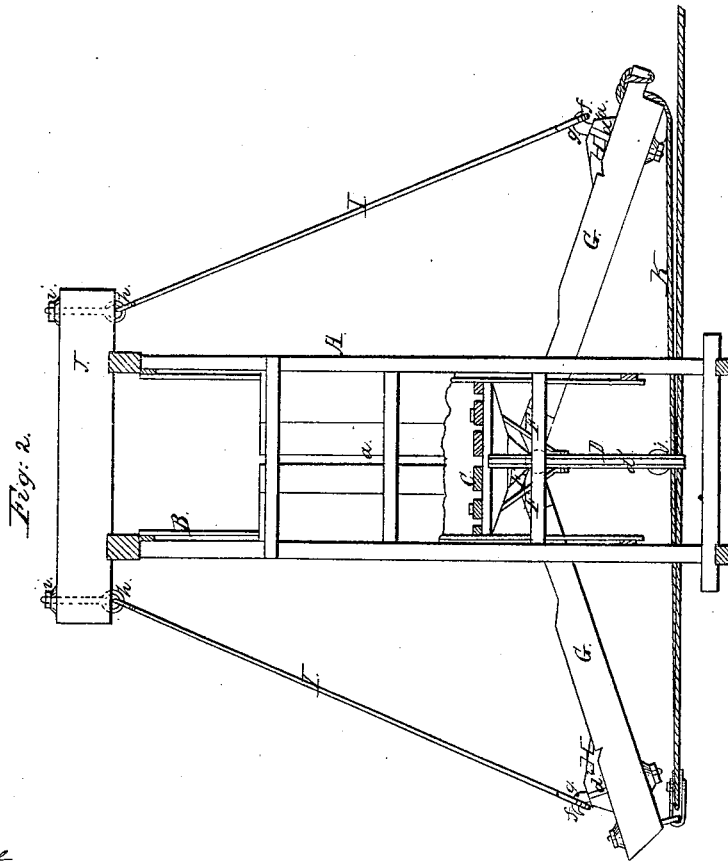
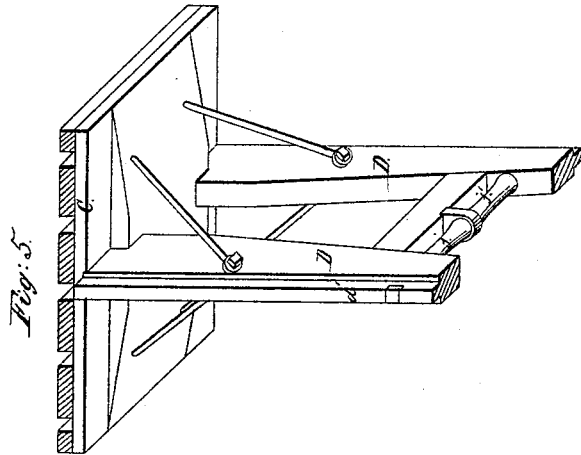


J. B. Gridley

Cotton Press

N^o 53917.

Patented Apr. 10, 1866.



*Witnesses,
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UNITED STATES PATENT OFFICE.

J. B. GRIDLEY, OF NEW ALBANY, INDIANA.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. 53,917, dated April 10, 1866; antedated October 10, 1865.

To all whom it may concern:

Be it known that I, J. B. GRIDLEY, of New Albany, in the county of Floyd and State of Indiana, have invented a new and Improved Baling-Press; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, reference being had to the accompanying drawings, which are made a part of this specification, and in which—

Figure 1 represents a vertical central section of my improved press at the stage of the operation wherein the draft-rope is acting directly upon the follower, the plane of section being indicated by the line *xx*, Fig. 4. Fig. 2 is a vertical section of the same, showing the position of the several parts when the rope ceases to act directly upon the follower and applies its draft to the levers, from which the follower receives subsequent movement. Fig. 3 is a similar view, showing the follower in its elevated position. Fig. 4 is a transverse vertical section, the plane of section being indicated by the line *yy*, Fig. 1. Fig. 5 is a detached view of the follower and its legs.

Similar letters of reference indicate corresponding parts in the several figures.

The principal feature of my invention consists in applying the acting ends of the levers directly, or nearly directly, to the center of the follower, while the outer ends are sustained by hangers, rods, or bars attached to any convenient part of the press, whereby the two extremities of the levers, when the latter stand in nearly the same horizontal line, are brought in closer proximity to each other, and the levers thereby adapted to more readily and speedily exert their effective pressure upon the follower when put in motion for this purpose.

My invention also consists in combining, in a baling-press, two suspended levers for moving the follower, attached by hangers or rods, and having their loose ends vibrated toward and from each other, with a rope, chain, or analogous device, which is applied and operated in any manner, so that while it gives motion to the levers it imparts motion directly to the follower before said levers have assumed their effective acting position.

My invention also consists in enlarging or widening the outer extremities of the levers by metallic blocks or otherwise, so that when

the levers reach the terminus of their return or ineffective stroke their said outer extremities shall occupy such position relatively to the follower that a given draft of the rope will cause the levers to act more speedily upon the follower than the same draft under other methods of attachment.

My invention further consists in guiding and controlling the follower in its movements through the press-box by means of ribs which are formed on the sides and legs of the follower and traverse straight slots in the sides of the box.

My invention further consists of a peculiar joint for attaching the levers to the follower.

The following description will enable others skilled in the art to which my invention appertains to fully understand and use the same.

A represents an upright press-box, which may be constructed in the usual manner, and provided with doors B, arranged in any suitable way.

C is a follower placed within a press-box, and provided with a pendent frame or legs, D, at its center, (see Fig. 5,) the sides of which have ribs *d' d'*, which work in vertical slots *a a* in the side of the press-box. This frame D serves as a guide for the follower, prevents it from tilting, and thus obviates friction.

E represents a metal block or bar, which is firmly bolted to the under side of the follower, and has two metal heads, F F, attached to it by a joint, *b*, a single pintle, *c*, connecting the three parts E F F together, as shown in all of the figures.

G G represent two levers which are attached one to each head F. These levers may be constructed of wood, and they project from opposite sides of the press-box A, passing through vertical slots *d d* therein. To the outer part of each lever G, at its upper surface, there is secured, by bolts *e*, a cast-iron block, H. These blocks are each provided with a hook, *f*, in which are fitted eyes *g* at the lower ends of rods I, the upper ends of the latter being connected, by eyes *h* and screw-bolts *i*, to the ends of a horizontal bar, J, on the top of the press-box, (see Figs. 1 and 2;) but said rods I may be attached to the sides of the box near the top, and connected by clevises to the head-block. The levers G G, it will be seen, are held in a suspended state by the rods I.

K is a rope, one end of which is shown at-

tached to one of the levers G. This rope passes underneath a pulley, *j*, at the lower end of the guide-frame D of the follower, and then through a sheave, *k*, at the end of the other lever G, and thence back underneath a pulley, *j'*, at the lower end of the frame D, and is attached to the windlass, animal, or any driving-shaft to which the motive power is applied. The rope K may be arranged in any suitable way, so long as it is adapted to act upon the follower before the levers come into play, and may be applied so as to force the follower either down or up, according to the construction or style of press with which it is used.

In consequence of having the inner ends of the levers G G connected to the center of the follower at its under side the direct upward pressure against the latter is obtained, and one end of the follower is not liable to be raised faster than the opposite end, and all binding of the follower in the press-box is avoided, and consequently much friction obviated. A very strong and durable connection of the levers to the follower is also obtained, and by having the rods I I attached to the metal blocks H, as shown, the rods I I are, when the levers G G are drawn toward each other, allowed to hang nearly in a vertical position, while the blocks H are made to serve as guides to steady the levers as the latter approach each other in the press-box, the blocks being nearly equal in width to the slots *d d*; or the blocks may be cast with ribs at their sides, so as to work snugly in said slots.

The relative arrangement of the rods or hangers I I, levers G G, and follower C, as represented in Figs. 1 and 2, effects a very useful result, which may be explained as follows: In Fig. 1 the levers occupy their normal position, in which they stand in, or nearly in, the same horizontal line, with their inner ends in close proximity, and each being at an angle of about seventy degrees with its sustaining-rod I. Hence a very limited movement of the levers G will vary their position relatively to the hangers or rods I, so that the latter will then be adapted to constitute the fulcrum of the levers, and the levers are thus made to quickly act upon the follower when they receive motion from the draft-rope.

It will be observed that if the levers were not applied to the center of the follower, as described, and the hangers I were applied in a manner substantially different from that represented, the angle between the hangers and the levers, under the normal position of the parts, would be so acute as to necessitate considerable ineffective movement of the levers before attaining the angle at which the hangers would become fulcrum of the levers. At least more time would be required than under my improved construction.

From the above description it is made known that the levers G, in being brought into operation, undergo a certain movement before they obtain their fulcrum, and hence before they exert any effective pressure upon the follower;

therefore, if the draft-rope had no other function than to draw the loose ends of the levers toward each other, considerable time in the aggregate would be consumed in getting the levers into their acting position, and it would also be impracticable to move the follower from such a low position. During the time of this ineffective movement of the levers I utilize the motion of the draft-rope by applying the latter in such a way that the rope itself shall act independently and directly upon the follower until the levers are, by the rope, made to assume such position that their action, more effective and powerful, shall commence. This is fully attained by arranging the rope in the manner described and represented and constructing the follower with the legs or frame D; but I wish to state here that I do not limit this feature of my invention to the arrangement shown, or to any specific construction or arrangement, the object and extent of this part of the improvement being simply the combination, with the levers, arranged as shown, of any mechanical means whereby the rope or chain may be made to act directly upon the follower during the time in which it is engaged in bringing the levers up to their working-point by drawing their ends together.

The particular manner of constructing the joint by which the levers G G are attached to the follower C is important, as it forms a strong and durable connection—one well calculated to resist all the pressure to which it is subjected.

The metal blocks H H on the levers G, and to which the rods I I are attached, are also important, in consequence of steadying the levers as they enter the press-box, and admitting of the rods I I being in a nearly vertical position when the levers G G are drawn toward each other, thereby insuring a freer movement of said levers.

The cast-iron blocks H have been spoken of in connection with their office as guides to steady the levers as they approach each other, and their loose ends pass into the box at the time the pressing operation is about completed. They have another function, which is deemed more essential to the successful operation of this press, and which consists in their affording the means of widening the levers at the points where the hangers I are attached, in order to adapt the loose ends of the levers G to fall or move farther relatively to the follower in returning to their first position, or that from which they are forced against the follower. This widening of the levers adjusts their angle with the hangers, when in their normal position, in such a way that very little movement of the levers will enable them to be brought into a position to have fulcrum upon the hangers and act with effect upon the follower. This angle—that is to say, the one from which the levers may be most quickly and conveniently brought to bear upon the followers—may be attained not only by the employment of the blocks H or other similar appliances, but by the widening of the levers

themselves at the points at which the hangers are attached. My invention, in respect to this feature, is to be regarded as the means—that is to say, the widening of the levers in any manner—whereby the levers in their normal position are made to stand at a certain definite angle with the rods by which they are suspended, such angle adapting the said levers to more quickly assume their acting positions when the draft is applied to the rope.

It should be understood that the arrangements above described are applicable to a press in which the follower is forced downward, as well as to the kind in which the follower is forced upward.

Having thus described my invention, the following is what I claim as new herein and desire to secure by Letters Patent:

1. In a baling-press, the levers G, having their inner ends applied to or near the center of the follower, in combination with the hangers, rods, or bars I I, which afford the fulera for said levers, and a rope, chain, or other draft device, whereby the loose ends of the levers are made to approach each other, substantially as and for the purposes herein specified.

2. In combination with levers which are made to act upon the follower by having their loose ends moved toward each other, and which have their fulera upon hangers, rods, or bars, a rope, chain, or any other device which shall impart motion to the follower before the

levers attain their effective acting position, substantially as and for the object set forth.

3. The means, substantially as herein described, for adapting the levers, in assuming the position from which they act, to stand at the definite angle with the hangers or rods I, from which they may be most speedily made to take the position in which to act effectively upon the follower, said means consisting either of the widening of the levers at the points where the hangers or rods are attached or in the application of the metallic blocks H or their equivalents.

4. The combination, with the levers G G, hangers I I, and rope K, of the follower C D, ribs *d'*, and guide-slots *a*, the latter being adapted to prevent the tilting or canting of the follower in its movements through the press-box, as explained.

5. The particular manner of constructing the joint which connects the levers with the follower, to wit: by means of three parts, E F F, connected by a single pintle, *c*, as herein described.

6. The metal blocks H H, attached to the levers G G, and provided with hooks *f f* and guides *d'*, to which hooks *f f* the rods I I are connected, substantially as and for the purpose herein set forth.

Witnesses:

N. MARCHAND,
JAMES MURRY.

J. B. GRIDLEY.