

No. 649,406.

Patented May 8, 1900.

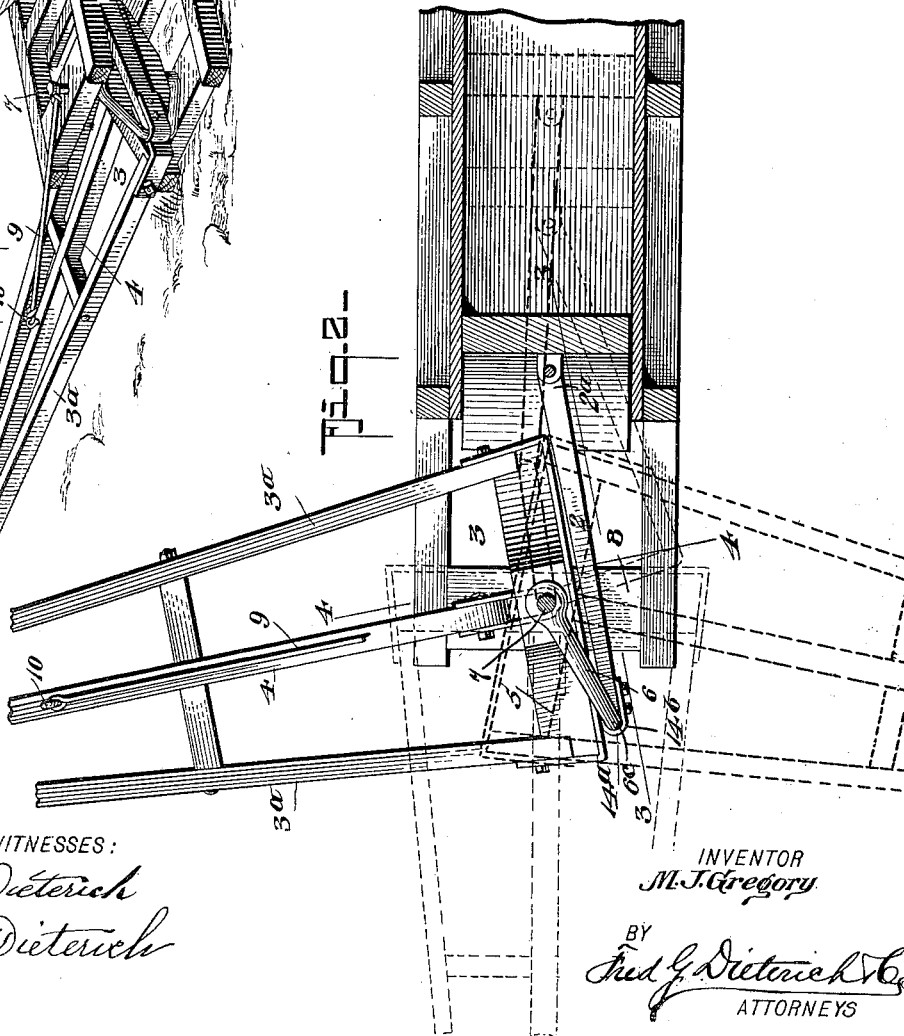
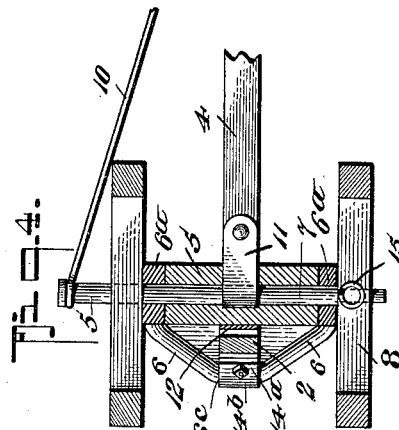
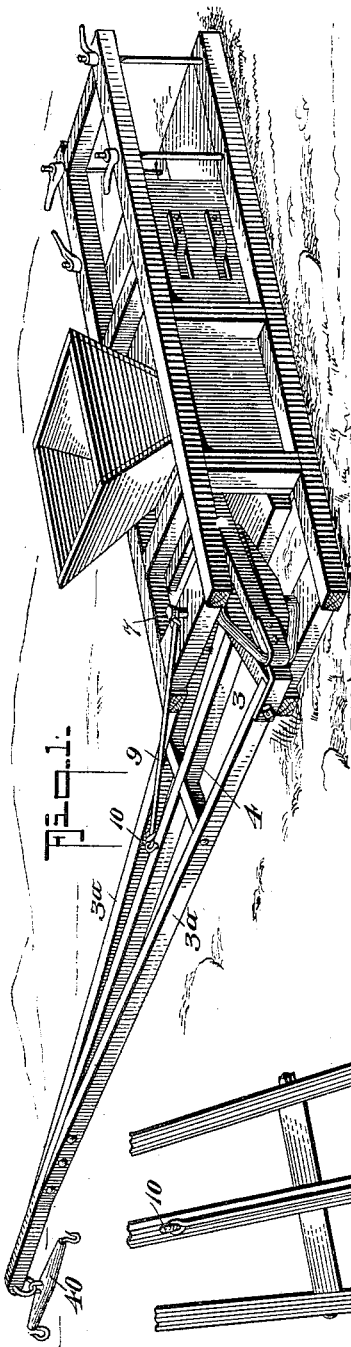
M. J. GREGORY.

BALING PRESS.

(Application filed June 22, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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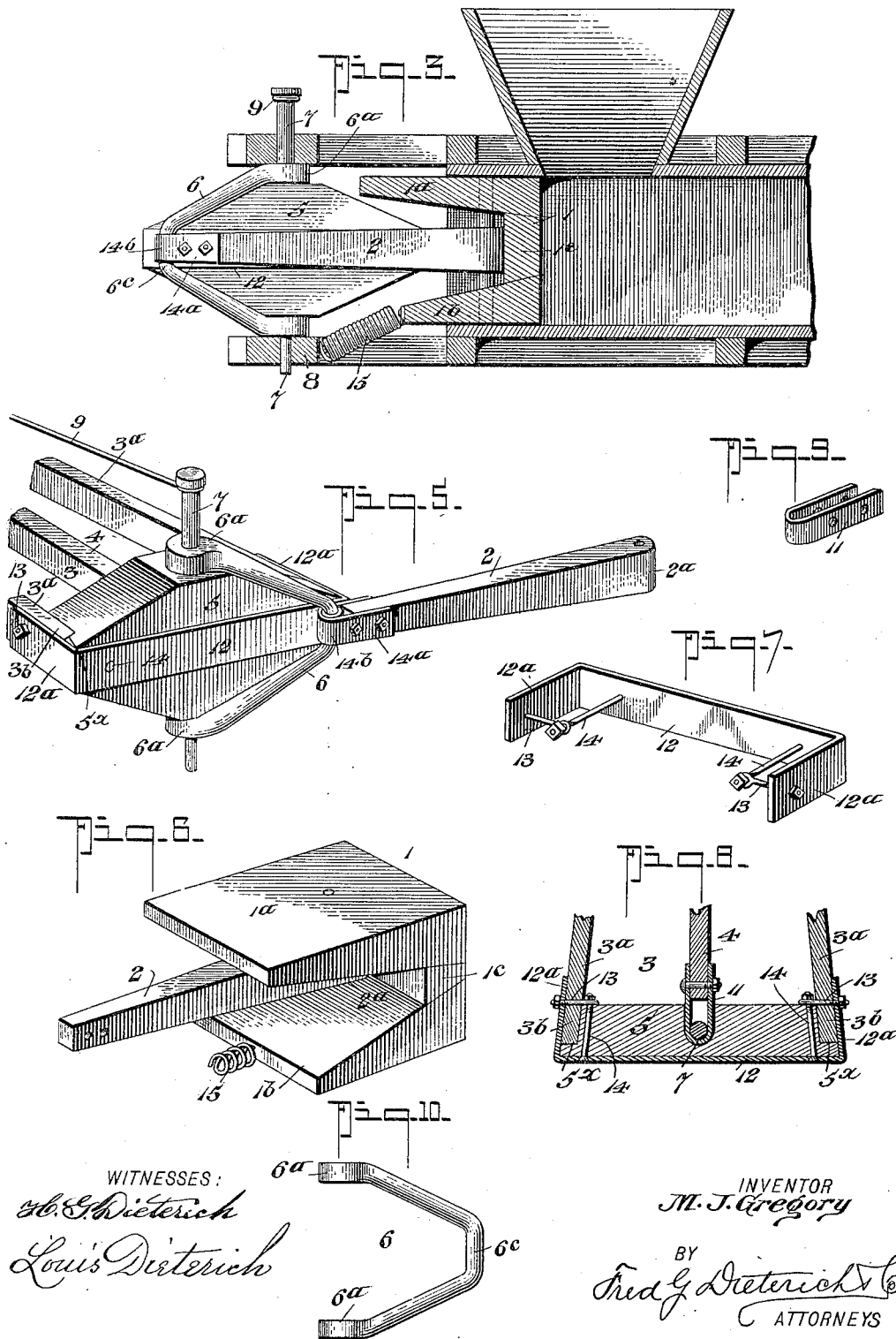
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UNITED STATES PATENT OFFICE.

MARSHAL J. GREGORY, OF KOSCIUSKO, MISSISSIPPI.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 649,406, dated May 8, 1900.

Application filed June 22, 1899. Serial No. 721,515. (No model.)

To all whom it may concern:

Be it known that I, MARSHAL J. GREGORY, residing at Kosciusko, in the county of Attala and State of Mississippi, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to improvements in baling-presses of that kind having spring returned or rebounding plungers; and it comprehends generally a novel construction of plunger-pressing sweep and lever mechanism operatively connected to effect a very strong, uniform, and direct pressure on the plunger in either direction of movement of the sweep and in which the parts are so arranged as to render the construction thereof of great strength and durability and capable of being easily and economically produced.

This invention also has for its purpose to provide a novel combination of lever mechanism with the sweep and plunger, whereby a great leverage-power can be obtained and the several parts during the operating movement be thoroughly braced to each other and the strain on the several pivotal points thereby reduced to the minimum.

In its subordinate features this invention consists in certain details of construction and combination of parts, such as will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved baling-press. Fig. 2 is a plan view of the same, showing the plunger to its outermost position in full lines and to its midway and its innermost positions in dotted lines. Fig. 3 is a longitudinal section of the plunger end of the apparatus, taken practically on the line 3 3 of Fig. 2. Fig. 4 is a transverse section of the parts in the full-lined position shown in Fig. 2, taken on the line 4 4 thereof. Fig. 5 is a detail view of the automatically-operating brace-clevis, the sweep end bearing-block, and the king-bolt or shaft therefor. Fig. 6 is a detail view of the plunger and its pusher-arm. Fig. 7 is a detail view of the bearing plate or iron for the sweep end or brake-block. Figs. 8, 9, and 10 are detail

views of parts hereinafter particularly referred to.

In its practical construction my invention embodies a press-box having a baling-chamber provided with the usual retainers and sides, top, and bottom portions, all of which may be of the ordinary simple form of construction, as such parts *per se* form no part of my invention, which relates particularly to the means for operating the plunger to the compressing position and holding the said plunger against back thrust during its pressing operation or forward movement.

The plunger 1 has the usual open sides and the rearwardly-extending top and bottom members 1^a 1^b. In my construction of parts the plunger has its pitman 2 pivotally secured at its front end 2^a to the rear of the plunger-head, centrally thereof, and to be swung laterally in a horizontal plane, said pitman 2 connecting centrally of the head 1^c to form a direct and uniform pressure against the contents of the baling-chamber.

The sweep 3 comprises a pair of end beams 3^a 3^b, convergingly disposed from the inner to the outer ends, and a central bar 4, that extends longitudinally of the sweep and has its front end made fast to the connecting ends of the beams 3^a 3^b, to which the draft tree or trees 40 are secured, as clearly shown in the drawings.

7 designates the king-bolt, supported in the top and bottom timbers 8, that extend across and connect the extended portions of the top and bottom beams of the main frame.

6 indicates a V-shaped clevis, the ends of which terminate in flat eyes 6^a, said eyes in the practical construction being so supported that they will when fitted upon the king-bolt 7 bear firmly against the under face of the timbers 8, as best shown in Fig. 3.

The pitman 2 pivotally connects with the apex or crank portion of the clevis 6 and is arranged to move in a horizontal plane.

By referring now more particularly to Figs. 3 and 5 of the drawings it will be seen the rear end of the sweep 3 terminates in a head-block 5, which comprises a central or body portion the rear face of which has a length equal that of the reverse sweep movements of the clevis 6, and the said clevis and the body portion of

the block 5 are relatively so arranged that during the entire forward or thrust motion of the plunger the crank portion of the clevis will engage the head-block. The head-block 5 is also of sufficient height that its upper and lower edges bear against the eyes 6^a of the clevis and by reason thereof cause the said eyes to engage the king-bolt at such points where its bearings are the most solid, and danger of the said ends 6^a creeping upon the bolt, producing a quick wear and bending the same, is reduced to the minimum. The opposite ends of the head-block 5 are made tapering from the center to their extremities, giving the said head-block, as it were, a diamond shape. This forming of the head-block has two purposes. First, it allows for a free play of the V-shaped clevis in its swinging movement thereon, and, secondly, and more especially, it permits the king-bolt being brought up very close to the plunger, as the ends of the head-block by reason of their being tapering will in the operation of the machine move in a plane between the extensions 1^b 1^a of the plunger. This arrangement of parts I have found in practice very advantageous, as it allows of the use of a very short pitman 2, and thereby adds strength and stability to the plunger-operating mechanism. The upper end of the king-bolt is extended, and a brace-rod 9 connects therewith, the outer end of which joins with the eye 10, projected up from the front end of the central longitudinally-extending bar that forms a part of the sweep 3. The rear end of the bar 4 carries a U-shaped clip 11, that projects into a recess in the front face of the head-block 5 and engages with the bolt 7, as clearly shown in Fig. 8.

It should be stated that the sweep-arms and the brake-block forming a part of the sweep are so mounted as to swing in the same horizontal plane in which the pitman 2 of the plunger moves, and the head-block 5 and the said pitman have such relation that the free or outer end of the pitman 2 will travel against the rear face of the block 5, which face is in the nature of a metal bar 12, having inturned angular ends 12^a, that project over the ends of the block 5 and onto the outer faces of the ends of the sweep-arms 3^a, which ends (indicated by 3^b) fit cut-out spaces 5^x in the block 5 and are made secure by eye-bolts 13, passed transversely through the ends of the sweep-arms 3^a and engage the bolts 14, which pass through the block 5, as shown in Fig. 8.

The outer end of the plunger pitman 2 has a metal strap 14^a, the loop 14^b of which engages the clevis, and also forms a bearing-face to engage the bearing-bar 12 on the brake-block 5.

15 indicates a retractile spring secured at one end to the plunger and at the other to the press-box frame.

It should be stated that in the practical arrangement of the sweep-lever the pivotal axis of the block 5 is in the same longitudinal

plane with the pivotal connection of the plunger and pusher bar, and as the said bar connects with the sweep (through the medium of the clevis 6) at a point to one side of the central line taken longitudinally through the axis of the sweep and the connection of the pusher-arm with the plunger it follows that when the sweep completes its stroke and the point of contact of the brake-clevis and the back of the block 5 passes the said central line the plunger will rebound by expansion of the baling-chamber contents and the retractile spring and the clevis 6 in consequence turn back to a position to engage the outer face of the block 5. Thus should the parts be in the position shown in Fig. 2 and the sweep be pulled over in the direction of the arrow the block 5 will tend to force the outer end of the plunger pusher-arm outward, and as the same by reason of the clevis connection 6 is pivotally held in engagement with the said block 5 it follows that as it is thus swung outward it will simultaneously be pushed inward, the back pressure on the plunger serving to force its outer end in a tight contact with the head-block. Thus while the connection of the plunger-arm is a movable one yet during the pressing action of the plunger the two parts are as one and in consequence act as a direct lever-power, and thereby reduce the strain on the aforesaid connection to the minimum. The plunger-pressure will continue until the sweep has completed a half-circle movement and it reaches a point approximately diametrically opposite to that shown in full lines in Fig. 2 and as indicated in dotted lines in the said figure, at which point the brake or holdback action of the block 5 stops, and the clevis 6 by reason of such release will be swung over to again contact with the outer end of the block 5. Furthermore, by operatively setting the sweep and lever devices in the same horizontal plane with the plunger pressing-arm it follows a direct, uniform, and powerful pressure action can be obtained without the slightest twist strain on the end of the pivotal parts of the plunger-operating mechanism.

It will be apparent from the drawings, taken in connection with the above, that my press can be cheaply constructed and yet possess the necessary qualities of strength, durability, and effectiveness in operation.

It will be understood that slight changes in the details of construction may be made without departing from the scope of the appended claims.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a baling-press, the combination with the king-bolt, the V-shaped clevis and the pitman; of the sweep 3, said sweep comprising a head-block 5, centrally apertured to rotate upon the king-bolt between the ends of the V-shaped clevis, said head-block having end seats or spaces 5^x, the members 3^a, the

inner ends of which are adapted to engage the end seats or spaces 5^x, the bearing-plate 12, extended over the rear face of the head-block, said plate having its ends terminating 5 in outwardly-projected angle portions 12^a, that extend over the ends of the block 5, and the inner end of the beams 3^a, the bolts 13, projecting through the said plate angle portions 12^a, and the beams 3^a, their inner ends terminating in eyes, the bolts 14, for securing 10 the front plate 12, to the head-block, said bolts being disposed at right angles to the bolts 13, and having their threaded or nut-receiving ends extended to pass through the eyes of 15 the bolts 13, and means for connecting the front end of the beams 3^a, all being arranged substantially as shown and described.

2. In a baling-press of the character described, a sweep having a head portion comprising the block 5, said block having a vertical aperture to receive the king-bolt and having a socket in its front face communicating with the king-bolt aperture, the clip member 11, fitting in said socket, the king-bolt

with which the clip member 11 is adapted to 25 engage, the beam 4, connected to the clip member 11, the aforesaid head-block having end seats or spaces 5^x, the beams 3^a, the outer ends of which are adapted to seat in the spaces 5^x, the wear-plate 12, extended longi- 30 tudinally over the bearing-face of the block 5, the extremities of said plate 12, being bent to form right-angle extensions, said extensions projecting from the ends of the beams 3^a, the bolts 13, for securing the beam ends 35 3^a, and the angle ends of the plate 12, said beams having eye portions, the bolts 14, for securing the front plate to the block 5, said bolts 14, having their threaded ends extended to pass through the eyes of the bolts 13, and 40 means for connecting the front ends of the beams 3^a and 4, all being arranged substantially as shown and for the purposes described.

M. J. GREGORY.

Witnesses:

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