

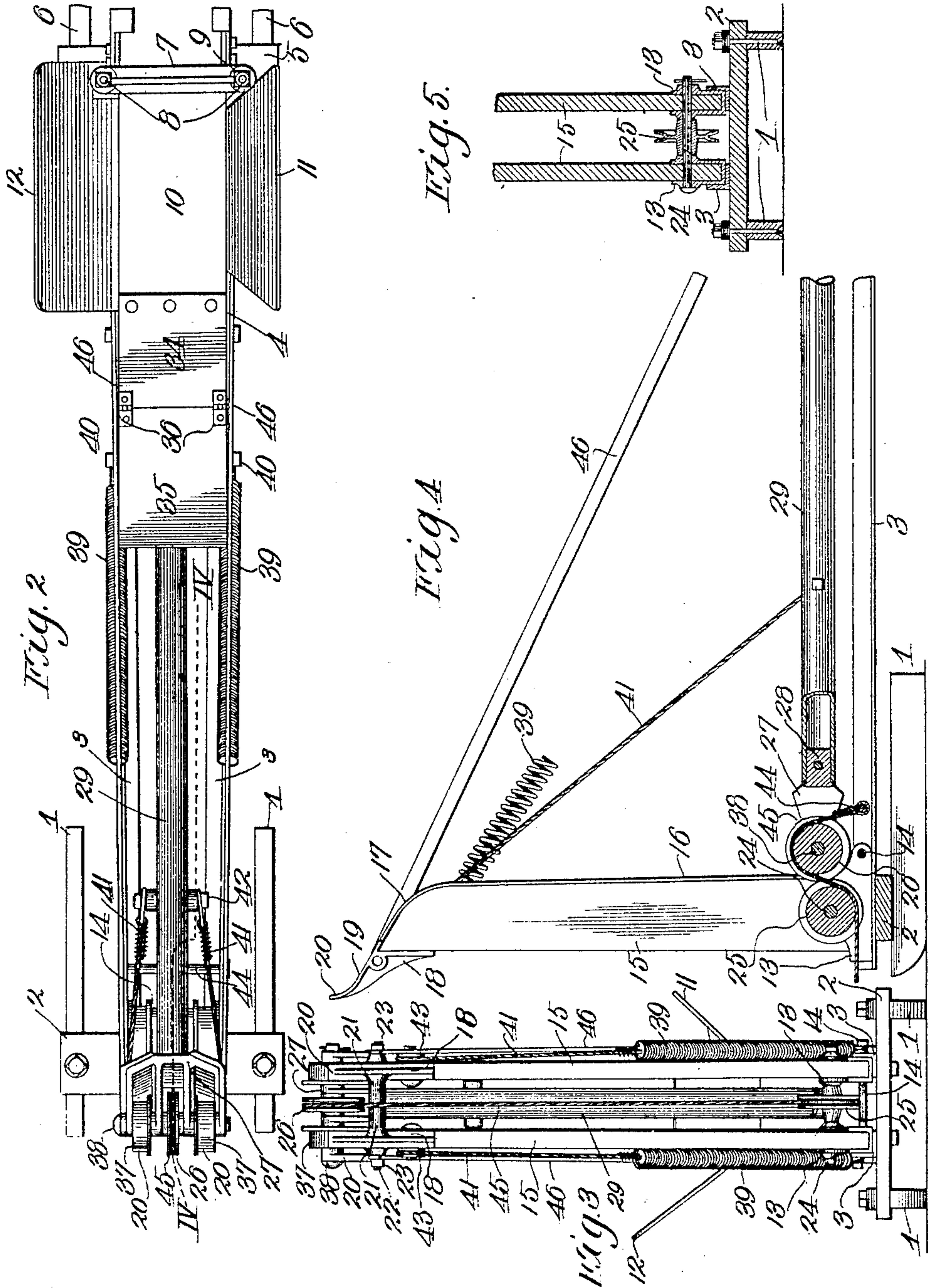
THE NORRIS PETERS CO., WASHINGTON, D. C.

No. 854,678

PATENTED MAY 21, 1907.

J. S. TUTTLE.  
BALING PRESS.  
APPLICATION FILED APR. 27, 1906.

3 SHEETS—SHEET 2.



Witnesses  
Frank P. Glou.  
H. C. Rodgers.

Inventor  
J. S. Tuttle

By *George J. Thorpe* Atty.



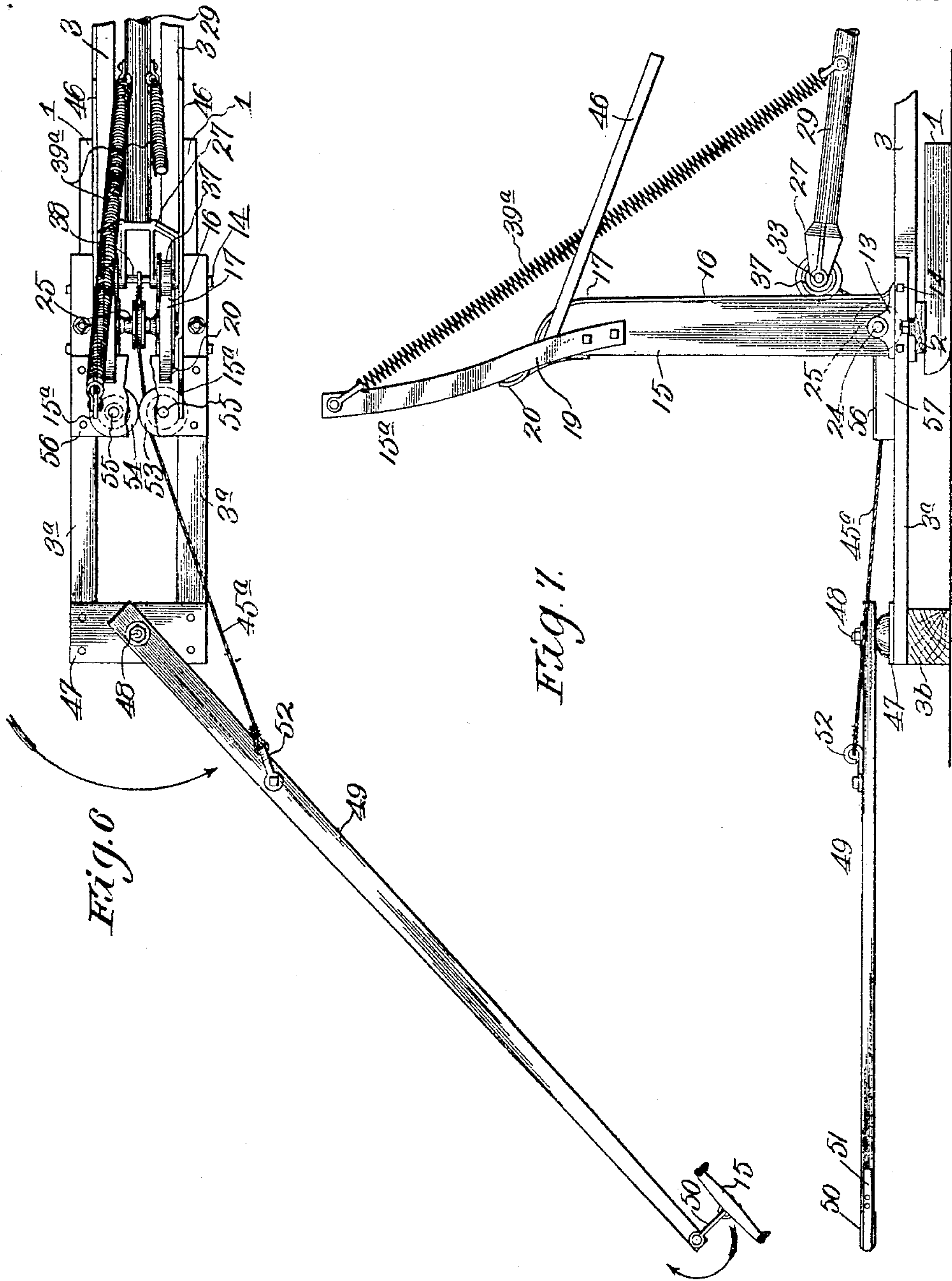
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By

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Inventor  
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# UNITED STATES PATENT OFFICE.

JOSIAH S. TUTTLE, OF KANSAS CITY, MISSOURI, ASSIGNOR TO STANDARD SCALE AND FOUNDRY CO., OF KANSAS CITY, MISSOURI, A CORPORATION OF MISSOURI.

## BALING-PRESS.

No. 854,678.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed April 27, 1906. Serial No. 313,941.

*To all whom it may concern:*

Be it known that I, JOSIAH S. TUTTLE, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to baling-presses and more especially to that class in which the horse or team of horses travel back and forth in a semi-circle around the front end of the machine, and my object is to produce a machine of this character which operates efficiently and reliably.

A further object is to produce a machine of this character of knock-down construction in order that it may be shipped with greater convenience and with less chance of injury to any of the parts.

A still further object is to produce a machine of this character of simple, strong, durable and inexpensive construction.

With these objects in view the invention consists in certain novel and peculiar features of construction and combinations of parts as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings in which:

Figure 1 represents a side elevation of the press. Fig. 2 is a plan view of the same. Fig. 3 is a front view of the same. Fig. 4 is a section taken on the line IV—IV of Fig. 2 with the plunger-beam in its depressed or advanced position. Fig. 5 is a cross section taken on the line V of Fig. 1. Fig. 6 is a top plan view of a modified construction of the power end of the press. Fig. 7 is a side view of the same.

In the said drawings 1 indicates a pair of runners connected pivotally near their front ends by a cross bar 2, the connection being forward of the center of said runners in order that the latter may be swung farther apart at their rear ends and thus give the machine a wider and therefore more stable bearing or support when the baling operation is to be performed.

Bolted at their front ends upon the cross bar 2, is a pair of angle bars 3, forming the reach connection between the power end and the baling end of the machine, the baling case 4, of the usual or any preferred type being mounted rigidly upon said bars near their

rear ends, and near the rear end of the baling case bars 3 rest upon a cross bar 5, connecting the rear runners 6, it being understood in this connection that any equivalent devices may be substituted for the runners if desired, though the latter are preferred as they are inexpensive and make the machine as a whole much lighter than the ordinary baling press of equal capacity.

7 is a cross bar resting upon the rear portion of the baling case, and connecting said bar with bar 5 at opposite sides of the case are rods 8, headed at their lower ends by preference and engaged at their upper ends by clamping nuts 9. Flanking the usual feed-opening 10, in the top of the case, and rising divergently therefrom are the hopper walls 11 and 12, for the purpose of assisting the operator who charges the press with the baling material, to quickly and easily accomplish such object, the hopper wall at the opposite side of the press from said operator being preferably of greater height than the other.

13 designates a pair of bifurcated brackets, resting upon the front ends of angle irons or reach bars 3, and pivoted to the latter as at 14. Secured rigidly in the bifurcated brackets 13, are a pair of standards having their rear edges formed or equipped with trackways 16, which slope upward and forward for the greater part of the height of the standards, and at the upper ends of the latter curve forward as at 17, and register with the trackways 19, of brackets 18, secured rigidly to the front side and upper ends of said standards, the trackways 19 having upwardly projecting terminals 20 for a purpose which hereinafter appears, the said brackets being spaced apart by their inwardly projecting and meeting bosses 21, and secured rigidly in such relation by a bolt 22, engaged at its ends by nuts 23. It will be understood in this connection that the parts from 13 to 21 inclusive, may be of integral construction, but that described is preferred, because in such case the standards 15 are of wood, which gives the required strength with a minimum weight.

24 designates a bolt extending through brackets 13 and standards 15, and journaled on said bolt between said brackets is a grooved wheel 25, occupying the same vertical plane as the similar wheel 26 journaled



in the central bifurcation of the trebly bifurcated bracket 27, the latter having a stem portion 28 fitting and bolted in the front end of the plunger beam 29, the rear end of said plunger beam being fitted and bolted upon the stem portion of a bracket 30, pivoted as at 31, for movement in a vertical plane to the plunger 32, said plunger having rollers 33, to travel on the bottom of the baling case and reduce the friction to the minimum.

An apron for preventing the baling material from dropping into the baling case forward of the plunger when the latter is in operation, comprises the plate 34 secured to the upper edge of the plunger, and the plate 35, hinged as at 36, to the front edge of plate 34, the hinge relation being substantially a rule-joint hinge, so that plate 35 cannot drop below a horizontal plane when the front end of the plunger beam moves downward.

Flanking the grooved roller 26 and occupying the outer bifurcations of bracket 27, are a pair of track rollers 37 which with the grooved roller are journaled on the bolt 38, carried by and bridging the bifurcations of bracket 27, the track rollers 37 being disposed to travel upon the trackways of standards 15.

To return the plunger to the front end of the baling case after each stroke, I employ a pair of retractile springs 39, secured at their lower ends as at 40, to the reach bars, and at their front or upper ends to the cables 41, said cables being secured at their opposite ends to a bolt 42, extending through the plunger beam. Between their ends the cables extend around the guide pulleys 43, supported outward of the upper ends of standards 15.

44 is a bolt connecting the reach bars 3, and forming an anchor for the lower and rear end of a cable 45, which extends up through the central bifurcation of bracket 27, around the grooved roller 26 thereof, and thence down under and forward from the grooved roller 25, the front end of said cable being equipped with a swingle or double tree, not shown, to which a draft animal is hitched for the purpose of operating the machine. To brace the upper end of the standards while the machine is being operated, a pair of tie-bars 46, are bolted at their rear ends to the baling case and at their front ends are mounted on bolt 22 and secured thereto by the nuts 23.

Before the baling operation begins the rear end of runners 1 are preferably swung pivotally outward so that the power-end of the press has no tendency to tilt sidewise, said runners and the rear runners also being staked to the ground in the customary manner to guard against movement in any direction. The draft animal is then hitched to the machine, and the feeder charges the press

with a suitable quantity of baling material. The horse is then driven forward and through the cable connection 45, anchored to the reach and running around pulleys 25 and 26, pulls the front end of the plunger beam downward and rearward, the track rollers 37 running upon the trackways to reduce friction as much as possible. That portion of the plunger stroke which occurs while the track rollers 37 are traveling from the upper ends of the trackways to the lower ends of the curved portions 17 thereof,—approximately half of the stroke of the plunger beam—is accomplished quickly and easily because the baling material is bunched loosely and therefore offers but little resistance to the plunger. As the track rollers start down the inclined portions 16 of the trackways, the leverage of the draft animal on the plunger is increased at a sacrifice of plunger speed, in order that the increasing resistance offered by the baling material as it becomes more closely packed, may be overcome. The track rollers continue to move downward until the plunger movement ceases by reason of the plunger beam attaining a horizontal position, when the horses are backed toward the machine to be ready to effect the next compression stroke of the plunger. As the horses back, the springs 39 which were stretched or tensioned as shown in Fig. 4, through the movement of the cable 41 and plunger beam, retract for the purpose of withdrawing the plunger and raising the front end of the beam to its original position, and in this connection it should be stated that the principal reason for having the trackway portions 16, inclined upward and forward slightly, is to insure that the retractive action of said springs and the forward pressure of the compressed baling material on the plunger shall be followed instantly by upward movement of the front end of the plunger beam, and as the latter attains its highest position of adjustment the upwardly curved portions 20 of the trackways form abutments to arrest the withdrawing plunger beam at the proper point. All future operations are repetitions of those described and when it is desired to move the machine from one point to another in the field, the stakes are removed and the draft animal is hitched to the machine in any suitable manner, it being obvious that the front runners, because pivoted near their front ends (the rear ones are perfectly rigid with the cross bar) swing naturally into line with the machine so as to offer the least possible resistance to progress.

When it is desired to ship the machine from one place to another, the nuts 23, are removed to permit the tie-bars 46 to swing down to the position shown in dotted lines Fig. 1, the nuts being then replaced upon bolt 22, to prevent loss. The front end of



the plunger beam is then raised to permit the standards to be folded down on pivot-bolt 14 to the position shown in dotted lines Fig. 1, and then the plunger beam is shoved rearwardly and lowered to the position shown in dotted lines said figure. In this condition the machine may obviously be shipped in the narrowest compass possible, without more completely dismantling the machine, and consequently can be shipped with less danger of injury and at less cost than it would be possible to ship it with the parts in operative relation.

For the purpose of operating the machine by means of a sweep and avoiding the necessity of backing the horse or horses as is necessary with the machine as embodied in Sheets 1 and 2, the following construction is employed, reference being had to Sheet 3. 3<sup>a</sup> indicates front extensions of parts 3, connected by cross-bar 47, equipped centrally with a pivot-bolt 48 upon which is mounted the sweep 49, carrying a swinging clevis 50 at its front end, as a support for the swingle or double tree 51, the clevis being so proportioned and disposed that the swingle or double tree may be swung around to either side of the sweep as will be understood by reference to Fig. 6. The sweep is also provided with a pivoted hook 52, to which is attached the front end of cable 45<sup>a</sup>, as a substitute for cable 45 of Sheets 1 and 2, the rear end of said cable 45<sup>a</sup>, being attached to the cross-bolt 38 of the plunger-beam; sheave 26 being omitted. Said cable 45<sup>a</sup> engages the under side of sheave 25, and forward of the same passes between the guide sheaves 53—54, journaled to rotate in a horizontal plane on bolts 55, carried by cross bar 56, connecting the blocks 57, secured rigidly in any suitable manner to extensions 3<sup>a</sup>. As a more economical but equally effective method of reelevating the front end of the pitman than that shown in Sheets 1 and 2, the standards may be equipped with upward prolongations 15<sup>a</sup> and the opposite ends of springs 39<sup>a</sup> be attached to such extensions or prolongations and the pitman, as shown in Figs. 6 and 7, and to brace the extensions 3<sup>a</sup>, while the machine is being operated, a block or equivalent 3<sup>b</sup>, may be employed, or said extensions may be otherwise braced.

With the type of construction shown by Sheet 3, the horse or team of horses, travel something more than a semi-circle in making a compression stroke, the first half of such movement effecting the compression and the second half occurring during the recoil, and in this connection it will be seen that the horse or team keeps the cable 45<sup>a</sup> taut and therefore prevents the injurious shock or jar incident to the recoil movement in most hay presses. When the recoil movement is completed, the horse or team is guided around to dispose the swingle or double tree at the op-

posite side of the sweep (see arrow Fig. 6) and the second compression stroke begins without stopping or backing the horse or team, the cable 45<sup>a</sup> acting on sheave 53 during the first stroke and recoil of the plunger and on sheave 54 in the second stroke and recoil, the end of each stroke terminating when the sweep is longitudinally alined with the machine, as will be readily understood. When not baling hay the horse or team still hitched to the swingle or double tree, may be caused to draw the machine to any part of the field, the sweep thus performing the function of a tongue.

From the above description it will be apparent that I have produced a baling press embodying the features of advantage enumerated as desirable in the statement of the object of the invention and which obviously may be modified in its form, proportion, detail construction and arrangement of the parts without departing from the principle of construction involved.

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

1. A baling press, comprising a baling case, a reach extending forwardly therefrom, a standard mounted on the front portion of the reach and provided with a trackway, a plunger, a plunger beam pivoted to the plunger and bearing at its opposite end upon the trackway, means to draw said plunger beam down upon the trackway to effect the compression stroke of the plunger, and means for reelevating the front end of the plunger to effect its withdrawal stroke.

2. A baling press, comprising a baling case, a reach extending forwardly therefrom, a standard mounted on the front portion of the reach and provided with a trackway, a plunger, a plunger beam pivoted to the plunger and bearing at its opposite end upon the trackway, means to draw said plunger beam down upon the trackway to effect the compression stroke of the plunger, and means for yieldingly reelevating the front end of the plunger beam to effect the withdrawal stroke of the plunger.

3. A baling press, comprising a baling case, a reach extending forwardly therefrom, a standard mounted on the front portion of the reach and provided with a trackway, a plunger, a plunger beam pivoted to the plunger and bearing at its opposite end upon the trackway, means to draw said plunger beam down upon the trackway to effect the compression stroke of the plunger, a retractile spring suitably anchored, a cable attached at its opposite ends to the plunger beam and spring, and a fixed guide for the cable disposed forward of and above said spring and the point of attachment between the cable and the plunger.

4. A baling press, comprising a baling case,



a reach extending forwardly therefrom, a pair of standards mounted on the front portion of the reach at opposite sides of the longitudinal center of the machine and each provided with  
 5 a trackway, a plunger, a plunger beam pivoted to the plunger, a bracket secured to the opposite end of the plunger beam, a bolt extending through said bracket, track rollers journaled on said bolt and engaging said  
 10 trackways, a guide pulley journaled centrally of the bolt, a guide pulley journaled between the lower portions of the standards, and a cable engaging said guide pulleys and attached at its rear end to a fixed point on the machine.  
 15 5. In a baling press, a baling case, a reach projecting forwardly therefrom, a standard pivotally rising from the reach and having a trackway, and one or more braces connecting the baling case with said standard.  
 20 6. In a baling press, a baling case, a reach projecting forwardly therefrom, runners supporting the rear end of the press, a cross bar carried by the front end of the reach, front runners pivoted to and underlying said cross  
 25 bar, a standard pivotally rising from the reach and having a trackway, and one or more braces connecting the baling case with said standard.

7. In a baling press, a baling case, a reach projecting forwardly therefrom, a standard 30 pivotally mounted at its lower end on the reach and having a trackway, and means to hold the standard rigid with relation to the reach.

8. A baling press, comprising a baling case, 35 a reach extending forwardly therefrom, a standard mounted on the front portion of the reach and provided with a trackway, a plunger, a plunger beam pivoted to the plunger and bearing at its opposite end upon the 40 trackway, a cable secured at its rear end to a fixed point of the machine and having a sliding connection with the front end of the plunger beam and with the front end of the press contiguous to the reach and adapted for 45 drawing the front end of the plunger beam down upon the trackway of the standard, and means for reëlevating the front portion of the plunger beam.

In testimony whereof I affix my signature, 50 in the presence of two witnesses.

JOSIAH S. TUTTLE

Witnesses:

EVERT A. KEMP,  
 F. W. DE LONG.