

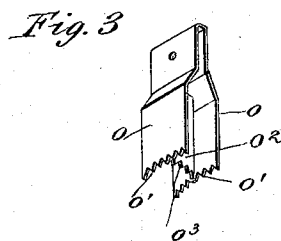
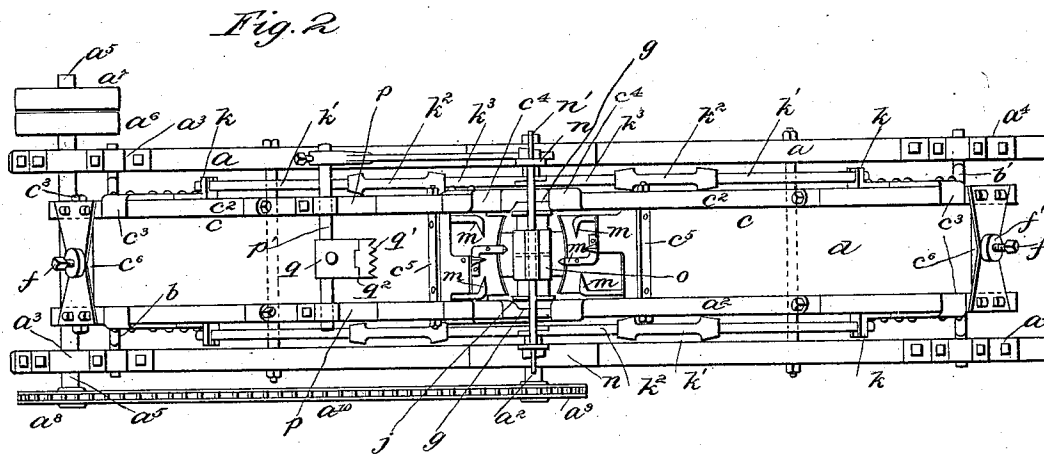
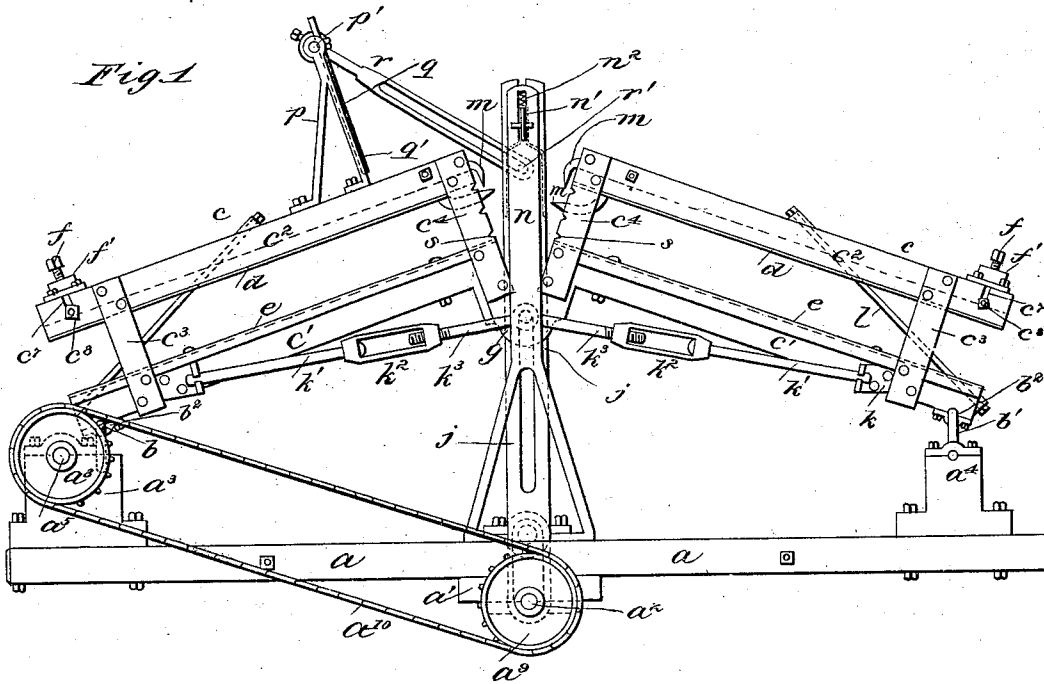
(No Model.)

2 Sheets—Sheet 1

J. J. BURNSHIRE.
BALING PRESS.

No. 552,096.

Patented Dec. 31, 1895.



Witnesses
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Inventor
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4

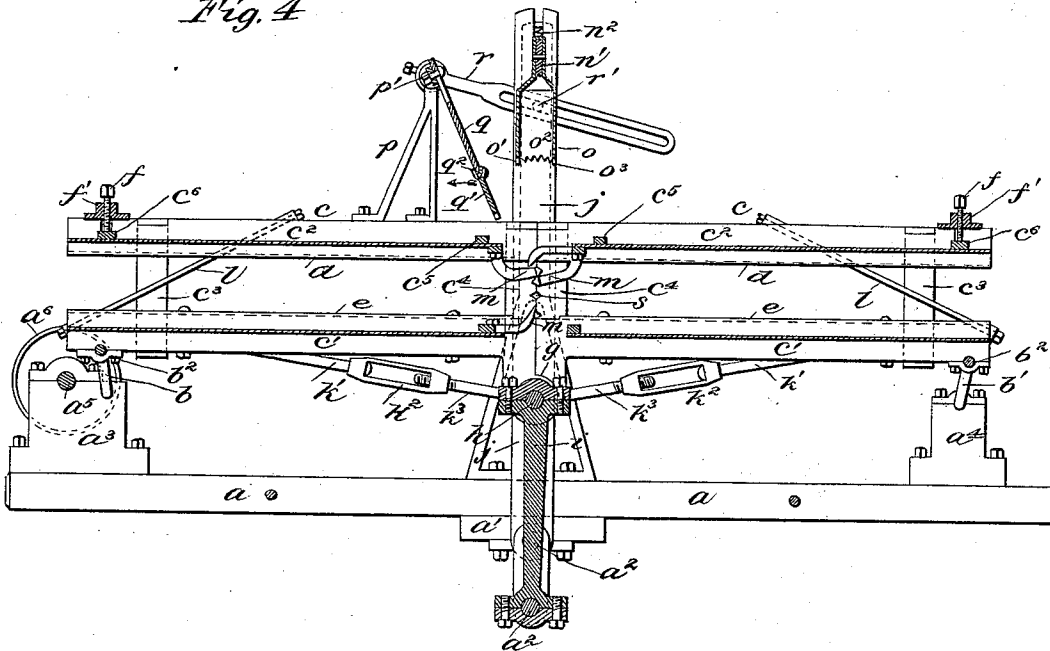
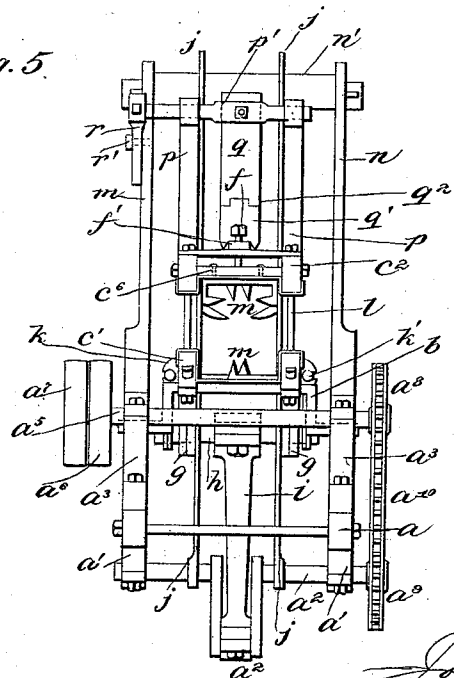


Fig. 5



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UNITED STATES PATENT OFFICE.

JOHN J. BURNSHIRE, OF DAYTON, VIRGINIA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 552,096, dated December 31, 1895.

Application filed April 30, 1895. Serial No. 547,698. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. BURNSHIRE, a citizen of the United States, residing at Dayton, in the county of Rockingham and State of Virginia, have invented a certain new and useful Improvement in Baling-Presses, of which the following is a full, clear, and exact description.

The object of this invention is to produce a press for baling hay and other articles, in which the usual plunger is dispensed with, and thereby the crushing action given by the plunger, which injures, in some instances, the material being baled, is prevented. In attaining this object of my invention, I make use of a divided press-box, the sections being pivoted on rock-shafts at their far ends, and being connected at their inner ends by means of a sort of rule-joint, to which rule-joint is applied an operating mechanism, by which the adjacent ends of the press-box are raised and lowered, which action, in conjunction with the feeding mechanism, serves to introduce the substance to be pressed or baled into the divided press-box, the substance so introduced into the press-box being progressively forced back into said box by each succeeding fresh introduction of material.

Having thus stated generally the principle of my invention, I will proceed now to set forth the best mode in which I have contemplated applying that principle, and then will particularly point out and distinctly claim the part, improvement or combination which I claim as my invention.

In the accompanying drawings illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation showing the divided baling-box lifted in order to receive a charge of the substance or material to be baled. Fig. 2 is a plan view of the machine, with the parts in the position shown in Fig. 1. Fig. 3 is a perspective view of a portion of the feeding mechanism. Fig. 4 is a longitudinal vertical section showing the sections of the press-box closed, and Fig. 5 is an end view of the machine with the parts in the position shown in Fig. 4.

I have illustrated my invention as constructed for use upon a truck, so as to be capable of being hauled from place to place, but

obviously the invention is capable of being erected in a stationary manner. For convenience, however, I will confine the description to the illustration selected, without thereby, however, so limiting the invention.

a is a frame of any suitable construction, receiving in suitable boxes *a'* a main crank-shaft *a²*, and also having the elevated boxes or stands *a³ a⁴*, and in the stands *a³* is placed a shaft *a⁵*, which may be provided with fast and loose pulleys *a⁶ a⁷*, respectively, or any other suitable mechanism for receiving the driving power. In order to transmit the driving power from the shaft *a⁵* to the shaft *a²*, I may make use of sprocket-wheels *a⁸ a⁹*, and a connecting-chain *a¹⁰*. The stands *a³ a⁴* receive respectively the rock-shafts *b b'*, and upon these rock-shafts are secured by boxes *b²* the sections *c c* of the press-box. As these sections or halves of the press-box are of substantially identical construction, the description of one will suffice for both.

Each section *c* is composed of the lower stringers *c'* and the upper stringers *c²*, which are connected by the uprights *c³* near one end and the uprights *c⁴* near the other end. The upper stringers *c²* may be further connected by means of cross ties or bars *c⁵ c⁶*, the cross-bar *c⁶* having its ends extended through slots *c⁷* and supplied outside of the stringers with nuts *c⁸*. These upper and lower stringers are provided respectively with the lining-plates *d e*, the plate *e* being, by preference, rigidly bolted to the stringers and forming the bed of the box, and the plate *d* being rigidly bolted to the cross-bar *c⁵* and bolted or riveted to the cross-bar *c⁶*, and in such manner that by means of a temper-screw or set-screw *f*, arranged in a bridge *f'* and abutting against the cross-bars *c⁶*, the said plate *d* may be adjusted at its outer end to bring it into greater or less closeness to the lower plate *e*, and thereby serve to contract the area of the space within the box in order the more effectually to press the bale being formed within the box.

The stringers *c'* may be formed or provided with rule-joints or other equivalent knuckle-joints *g*, similar joints being constructed at the adjacent ends of the two sections of the press-box and being united by a cross-bar or rod *h*. This cross-bar or rod *h* has connected with it the pitman *i*, which pitman extends

thence and is connected with the crank of the crank-shaft a^2 , so that by the revolutions of the crank-shaft the pitman is given a vertical reciprocating motion, and the two sections of the press-box are moved upon their rock-shafts as centers, down and up from the position in Fig. 4 to the position of Fig. 1, and back again, after the manner of jaws. The rod or cross-bar h is utilized also as a cross-head for the pitman and is guided in the slotted uprights j , which uprights may extend by the straight portions of the crank-shaft a^2 and rise therefrom between the box-sections, the plates d and e in such box-sections being cut away at their forward ends, as shown more particularly in Fig. 2, and in order to accommodate these and other working parts of the machine. In order to brace and thereby stiffen these sections of the press-box, I may attach to the lower stringers c' the brackets k , in which one end of a rod k' is swiveled, and such rod provided with a turnbuckle k^2 , which receives the threaded end of a rod k^3 , which has an eye fitted to the cross-bar h . The box-sections may be further braced by means of the truss-rods l .

The adjacent box-sections are provided, at top and bottom, with the intermoving hooks or teeth m , for a purpose presently appearing. Erected upon the sides of the frame a are the posts n , which support a cross-bar n' , normally held to its seat in said posts by springs n^2 , which springs permit the said cross-bar to raise under stress. Upon this cross-bar is arranged one element of the feeding devices, the same consisting of parallel blades o , the lower edges of which are concaved and serrated at o' , and the two connected by a central web o^2 , having a similarly concaved and serrated edge o^3 . Upon one or the other of the box-sections is erected a pair of brackets p , which support a rock-rod p' , and which has secured to it a finger q , the lower portion q' of which is hinged to the upper portion at q^2 in such a manner that as the said finger is moved in the direction of the arrow, Fig. 4, for the purpose of advancing toward the material or substance to be introduced into the box-sections, it will rise ineffectively, and thereafter, as the said finger is moved in the opposite direction, the said lower portion will become rigid and in alignment with the main portion of the finger, and thereby act upon the matter to be fed and moved forward to the jaws, this forward movement of the finger taking place simultaneously with the downward movement of the box-sections, and thereby serving to feed the substance to be pressed or baled, and thereafter, as the box-sections rise—that is to say, as the mouth opens—the material so fed forward will have been presented beneath the feeding device, Fig. 3, and upon the continued rise of the box-sections the material will be caught hold of by said feeding device o and forced down into the mouth of the box-sections, where it will be caught by the hooks or teeth m . Since

the box-sections move in arcs of a circle described from rock-shafts, the said teeth will have a motion or action between themselves which will tend to draw down the material between and into the box-sections in such manner that each succeeding further introduction of material will act upon that previously introduced and force it into the box-sections under pressure. The vibrating motion of the finger q may be effected in any suitable manner. I have shown as one means for accomplishing such motion a slotted arm r , rigidly affixed to the rock-rod p' and engaging with its slot a pin or roller or other device r' on one of the posts n .

The feeding device, comprising the pair of brackets p , rock-rod p' , finger q and its operating mechanism, may be erected upon one of the box-sections movably, so that if it be desired to feed from the other box-section the whole of said feeding device may readily be detached from the box-section to which it has been applied and as readily applied to the other box-section.

I have illustrated my machine as adapted to be fed by hand.

I have described thus a simple construction containing the principle of my invention, and have carried along in the description of the construction an outline of the operation, and so deem it unnecessary to set forth the operation further; but it may be observed, as already intimated at the beginning of this specification, that the material, whether it be hay or other substance, is caused to press itself into the press-box without the intervention of a plunger or other mechanical device acting directly upon the material in the act of compression or baling, and thus the material is saved from being crushed and its fiber or integrity destroyed or injured in the process.

Provision for applying the bale bands or ties may be made. I have suggested as such provision the notching at two or more points s of the adjacent edges of the box-sections across which the bale bands or ties may be used, which bands will be progressively moved into the box-sections along with the material being baled, and which may be readily tied or united as the bale is formed. I have also shown the box-sections of a proportion fit to take in two bales in each section, the bales being separated by the ties.

What I claim is—

1. A baling press composed of a divided baling box having its sections pivotally supported at their far ends and movably connected at their adjacent ends, means to raise and lower the said box-sections so as to cause their adjacent ends to open and close, and means to feed the material to be baled into such adjacent ends, substantially as described.

2. A baling press composed of pivoted box-sections, means to raise and lower said box-sections to cause them to open and close at their adjacent ends, and a feeding device

composed of a movable member, carried by one of the box-sections, and a stationary member toward and from which last the box-sections move as they are opened and closed, substantially as described.

3. In a baling press, the combination of a divided baling box, the said box having its sections pivoted at their far ends, and their adjacent ends connected by movable joints, a pitman connected to said jointed ends, a crank-shaft for actuating the pitman, means to drive the said crank-shaft, and means to feed the material to be baled to said box-sections, substantially as described.

4. In a baling press, a divided press-box

having its sections pivoted at their far ends and their adjacent ends connected to be opened and closed after the manner of jaws, hooks arranged within the box-sections at their adjacent ends, and means to feed the material to be baled to such adjacent ends, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand this 27th day of April, A. D. 1895.

JOHN J. BURNSHIRE.

Witnesses:

C. E. SPRENKLE,

GEO. W. HESS.