

(No Model.)

2 Sheets—Sheet 1.

M. I. TUTTLE.  
BALING PRESS.

No. 558,624.

Patented Apr. 21, 1896.

Fig. 2

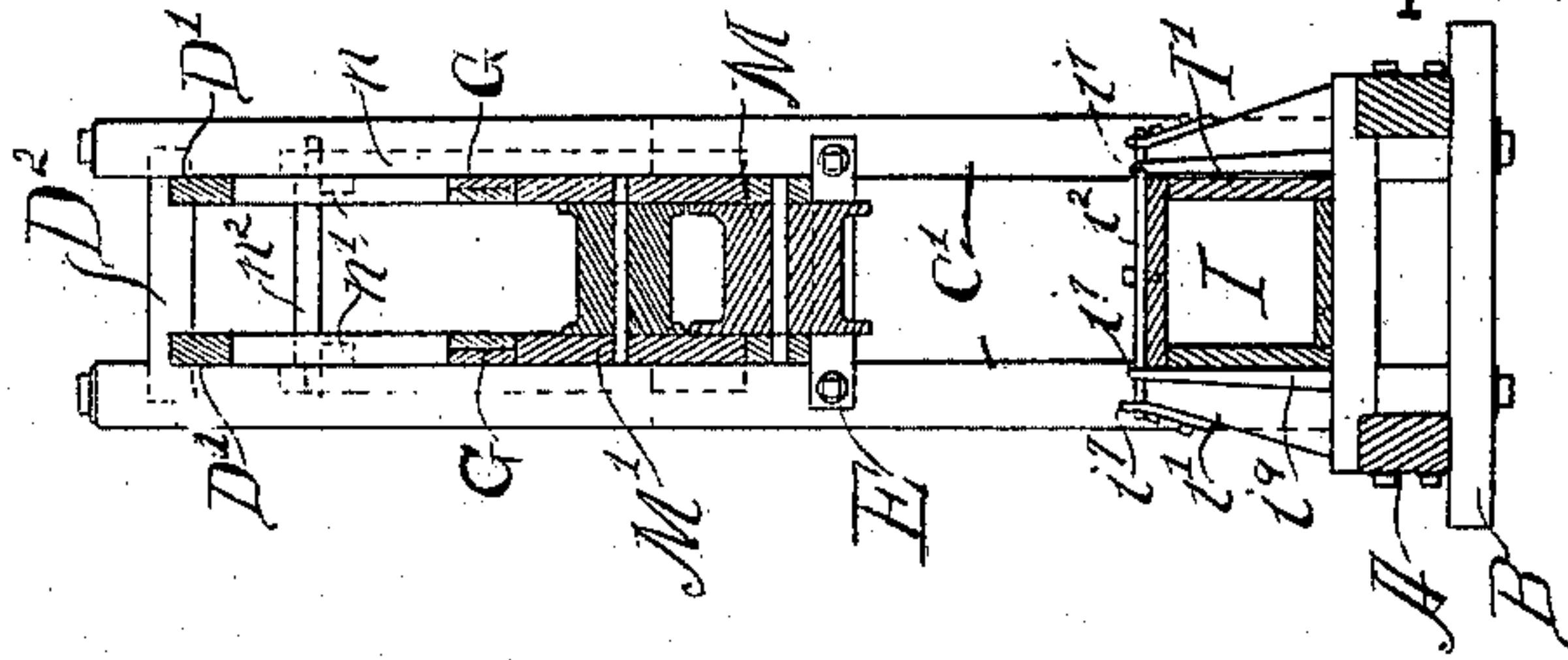
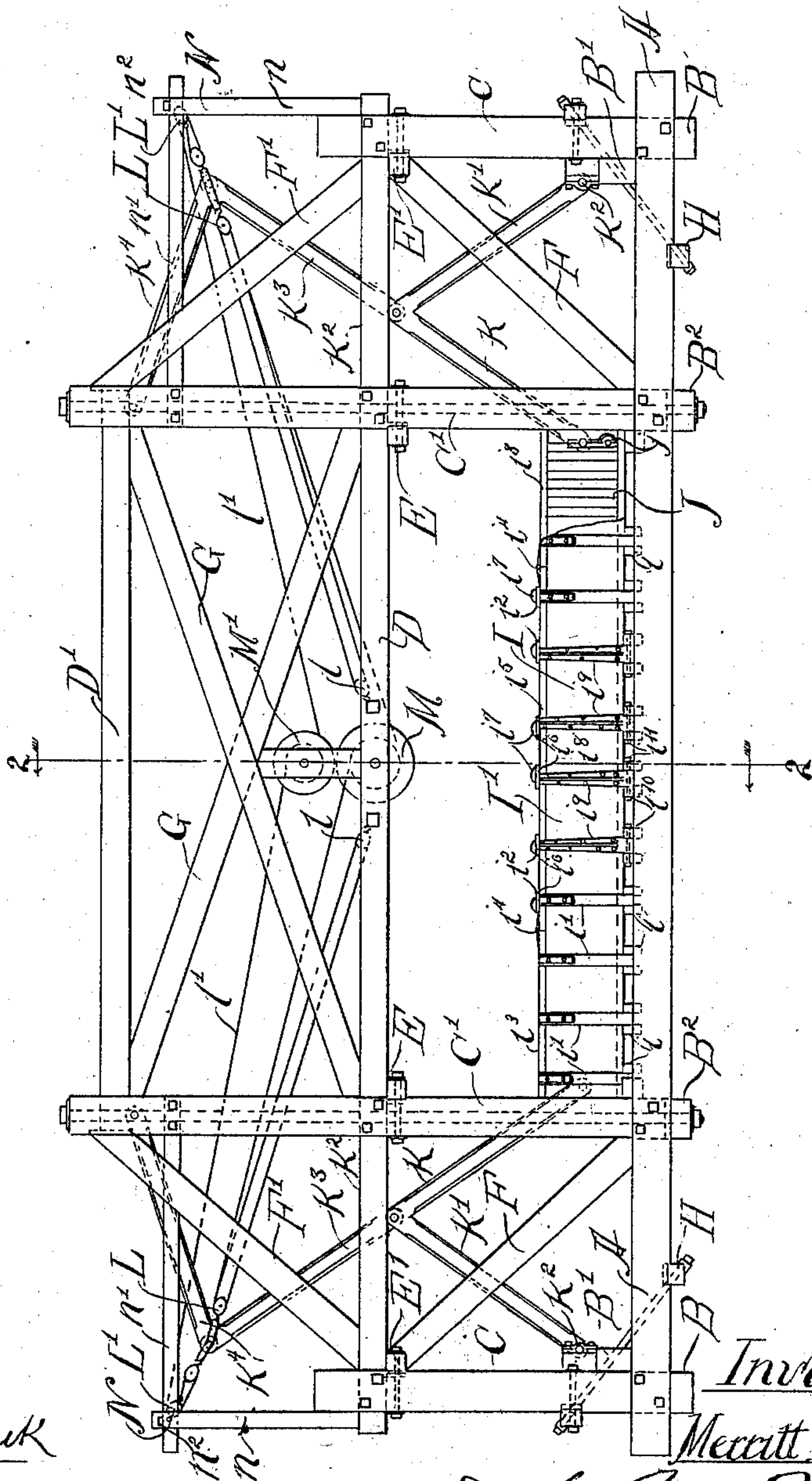


Fig. 1



Witnesses

Clinton Hauwink

Jno. W. Adams.

Inventor:

Merritt I. Tuttle

by: Dayton Poole & Brown  
his Attorneys

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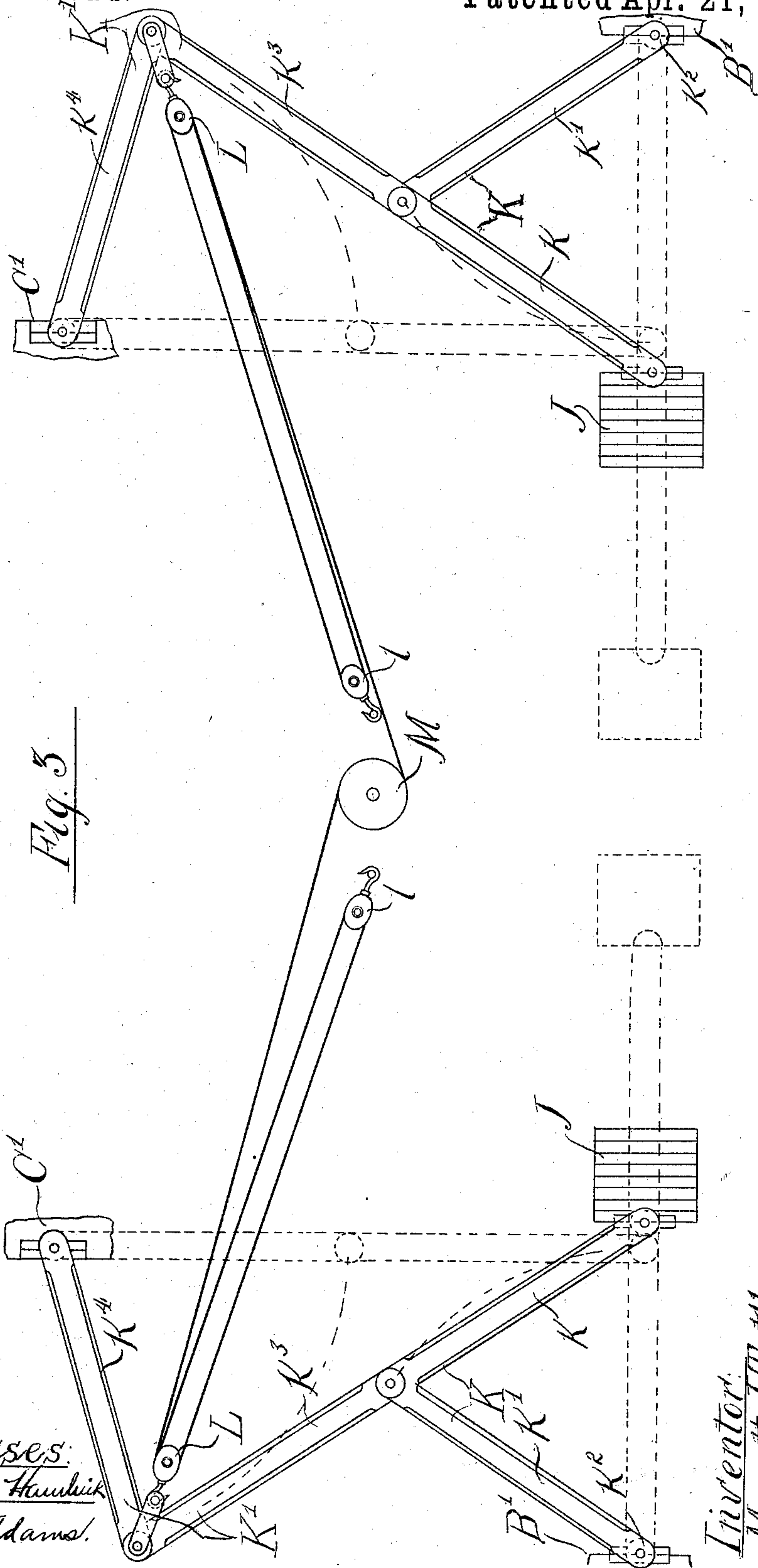


Fig. 3

Witnesses:  
Clinton Hambrick  
Jos. W. Adams.

Inventor:  
Merritt I. Tuttle

by: Dayton & Brown  
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# UNITED STATES PATENT OFFICE.

MERRITT I. TUTTLE, OF MATHER, WISCONSIN, ASSIGNOR OF ONE-HALF TO  
JAMES H. PALMETER, OF CHICAGO, ILLINOIS.

## BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 558,624, dated April 21, 1896.

Application filed August 16, 1894. Serial No. 520,450. (No model.)

*To all whom it may concern:*

Be it known that I, MERRITT I. TUTTLE, of Mather, in the county of Juneau and State of Wisconsin, have invented certain new and useful Improvements in Baling-Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to baling-presses of that character adapted for baling bulky materials—such as hay, straw, cotton, and the like—and more specifically relates to presses of the above character in which the compression of the bale is effected through the medium of toggles.

Among the objects of the invention are to provide a simple, powerful, and convenient press which may be readily and cheaply constructed from materials usually obtainable in any community and without the necessity of a regular manufacturing plant, while at the same time the efficiency of the press is equal to that of much more elaborate and expensive machines.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claim, and will be readily understood, reference being had to the appended drawings, in which—

Figure 1 is a view in side elevation of a press embodying my invention, a part of one end of the baling-chamber being broken away in order to expose the compression-head therein. Fig. 2 is a central vertical section of the same. Fig. 3 is a diagrammatical view of the actuating mechanism of the press.

Referring to said drawings, A A designate the main longitudinal sleepers or bottom frame-pieces; B B', lower end cross frame-pieces; B<sup>2</sup>, intermediate lower cross-pieces, and C C' end and intermediate upright frame-pieces, respectively, the latter being substantially twice the height or length of the former. D and D' designate middle and upper horizontal frame-pieces extending the full length of the press and between the intermediate uprights C', respectively. E and E' designate, respectively, middle and upper cross-pieces.

These various timbers together constitute the main frame of the press and are suitably and rigidly secured together, preferably by means of through-bolts.

In order to add to the rigidity of the frame, brace-timbers F F', extending from near the upper end of the end upright C to the lower and upper ends, respectively, of the intermediate upright C', are provided at each end. Crossed braces G G extend diagonally from the upper end of each upright C' to the middle of the opposite one.

In order to provide special strength at the lower corners of the press, which parts are subjected to the heaviest strain in the operation of the press, as will hereinafter appear, heavy bolts H are extended diagonally through the timbers constituting the corners, as indicated in dotted lines, Fig. 1.

I is the baling box or chamber, superposed upon the timbers A between the uprights C' C'. As herein shown, the frame of said box is constructed of bottom cross-pieces *i*, notched or rabbeted at their ends, so as to rest partly between and partly upon the timbers A, side frame-pieces or uprights *i'*, rabbeted at their lower ends, so as to rest both within and upon the timbers A and suitably bolted to the latter, and top cross-straps *i*<sup>2</sup> of iron. The frame thus constructed is provided with a heavy plank lining I'. The upper side or cover of the box is made removable, the end portions *i*<sup>3</sup> *i*<sup>3</sup> being hinged at *i*<sup>4</sup> *i*<sup>4</sup>, so as to lift up freely. The central portions of the cover *i*<sup>5</sup> *i*<sup>5</sup> are also hinged, so as to lift up, but are adapted to be locked in closed position by means of the cross-straps *i*<sup>2</sup>, which latter are centrally pivoted upon the cover, so as to swing horizontally, and are provided at their ends with transversely-arranged open-ended slots or yokes *i*<sup>6</sup> *i*<sup>6</sup>, which engage beneath inverted-L-shaped heads *i*<sup>7</sup>, carried by the upper ends of the uprights *i'*, when swung, so as to lie directly across the box-cover.

The central portion *i*<sup>8</sup> of the sides, which form that portion of the box within which the finished bale lies, are also made to open, being for this purpose constructed as follows: The uprights *i'* are omitted, and in lieu thereof iron standards *i*<sup>9</sup> *i*<sup>9</sup>, preferably of T shape in cross-section, as shown, are provided, termi-



nating at their upper ends in inverted-L-shaped heads similar to those of the standards  $i$  and provided at their lower ends with transverse pivot-apertures  $i^{10}$ . Pivot pins or bolts  $i^{11}$  extend through these pivot-apertures and the adjacent cross bottom pieces  $i$ , whereby the side sections  $i^8$  are pivotally secured, so that they may be dropped down outwardly into the same plane with the bottom of the box.

A compression head or plunger J is provided in each end of the baling-chamber I, these heads being actuated so as to travel toward each other simultaneously and form the bale at the center of the chamber. The compression-heads J are herein shown as constructed of timbers framed together, so as to be relatively light, but could obviously be made solid, if desired or more convenient. Means for actuating said compression-heads are provided as follows: K K designate toggles comprising links or joined members  $k$   $k'$ , arranged at each end of the press to act on the compression-heads J J of their respective ends. The outer ends of the links  $k$  are pivotally secured to the compression-heads, while the outer ends of the links  $k'$  are pivotally secured to the cross-timbers B', at points preferably in the same horizontal plane with the pivotal points of the other ends of the toggles, by means of suitable bearings  $k^2$   $k^2$ , securely bolted to said frame. The combined length of the links  $k$  and  $k'$  of each toggle is such as, when said links are brought into horizontal alinement, to carry their respective compression-heads to within the proper distance of each other to form a bale of the desired length between them, and when fully retracted, as shown in the drawings, will preferably stand at an angle with each other somewhat less than a right angle. In order to lessen friction due to downward pressure exerted on said compression-heads by the toggles during the first part of the instroke of the heads, the latter are provided with anti-friction carrying-rollers  $j$ , which roll upon the bottom of the baling-chamber.

In order to actuate the toggles K K in the manner hereinbefore described, a second jointed toggle K' is provided at each end, arranged to act upon the toggles K, said toggle K' being preferably, and as herein shown, formed of links  $k^3$   $k^4$ , exactly similar to those of the toggles K. One end of each of the links  $k^3$  is pivotally secured to the joint of the respective toggles K, while the outer ends of the links  $k^4$  are pivotally secured to cross-timbers D<sup>2</sup> near the upper ends of the uprights C' at a point distant from the horizontal plane of the lower toggles K equal to the combined length of the links  $k^3$   $k^4$ , so that when the toggles K' are straightened into vertical position the toggles K will also be straightened into horizontal alinement. Guides K<sup>2</sup> are provided on the inner sides of the horizontal timbers D, which retain the toggles in central vertical alinement.

Any suitable means may be employed for actuating the toggles K'; but preferably, and as herein shown, such means comprise blocks and tackles L L, secured to the joints of the toggles K' and trained over a drum M, so located as to act on the toggles when flexed outwardly to straighten the latter. As herein shown, said drum M is mounted transversely upon the central portions of timbers D, said timbers being suitably braced from the cross-braces G G above to resist the strain coming on them through the drum. The blocks and tackles herein shown each comprise but a single multiplying-pulley  $l$ , secured to the timber D near the drum M; but obviously more could be employed, if desired or necessary.

In order to draw back the toggles K and K', and thereby retract the compression-heads, a second pair of pulleys L' L' is provided, which are conveniently supported from frames N at each end of the press, formed by vertical standards  $n$   $n$ , extending up from the standards C, and horizontal pieces  $n'$   $n'$ , extending back from the uprights C', the two side frames thus formed being joined by a cross-bar  $n^2$ , from which the pulleys L' are suspended. Ropes  $l'$ , connected with the joints of the respective toggles K' K', are trained through these pulleys L' and from thence around a second drum M', mounted above the drum M. Both of the drums M and M' may be actuated in any suitable manner either by means of a hand-crank or by power through the medium of a belt-pulley or gearing.

The operation of the device thus constructed is as follows: The compression-heads being in retracted position the hinged sections of the cover of the baling-chamber are lifted up and hay or other material thrown into the chamber. The covers are then closed, the central sections being locked by means of the pivoted bars thereon and the drum M actuated to straighten the toggles and thus form the bale. It will be noted that each end section of the cover is hinged freely, so that it may rise to permit the lower end of the toggle-link  $k$  to enter the chamber. The drum M' is now actuated to withdraw the compression-heads, the drum M being of course permitted to unwind. Once filling the chamber will ordinarily make a complete bale; but these actions may be repeated as often as is necessary to produce a bale of any required compactness, after which the bale is tied, the hinged sides dropped down, and the bale removed.

It will be obvious from the above description that a press thus constructed is capable of very efficient work, and I have found in practice that the use of two compression-heads acting against each other produces a bale of greater compactness and better than can be produced with an equal number of movements where a single compression-head is used.

I claim as my invention—

A baling-press comprising a pair of longi-



5 tudinally-arranged, horizontal, bed-timbers,  
upright frame-pieces secured one at each end  
of each bed-timber, a pair of upper horizontal  
frame-pieces secured to said uprights parallel  
10 with the bed-timbers, a second set of uprights  
secured to the bed-timbers at points approxi-  
mately intermediate between each end up-  
right and the center of the press-frame and  
extending some distance above the upper lon-  
15 gitudinal frame-pieces, a pair of upper longi-  
tudinal frame-pieces extending between the  
upper ends of said intermediate uprights,  
cross-braces extending diagonally across the  
rectangle thus formed between said pairs of  
20 upper longitudinal frame-pieces, a baling-  
chamber arranged longitudinally upon the  
bed-timbers between the intermediate up-  
rights, reciprocatory compression-heads ar-  
ranged in each end of said baling-chamber,  
25 means for actuating said compression-heads  
comprising two jointed toggles at each end of  
said press, one of which toggles acts on the  
compression-head at one of its ends, is secured  
against the end upright at its other end and

is adapted to be straightened into a horizontal 25  
position parallel with the plane of travel of  
the compression-head, and the other of which  
toggles acts at one of its ends on the first-  
mentioned toggle, is secured at its other end  
to the upper part of said intermediate upright, 30  
and is adapted to be straightened into a po-  
sition perpendicular to the plane of travel  
of said compression-head, and means for  
straightening each of said toggles simulta-  
neously, comprising a block and tackle at 35  
attached to the central portion of each of said  
upper toggles, the other ends of said tackles  
being trained around a common drum, where-  
by the compression-heads are actuated to  
compress the bale from opposite ends simul- 40  
taneously, substantially as set forth.

In testimony that I claim the foregoing as  
my invention I affix my signature in presence  
of two witnesses.

MERRITT I. TUTTLE.

Witnesses:

F. W. HALL,  
H. B. TUTTLE.