

(No Model.)

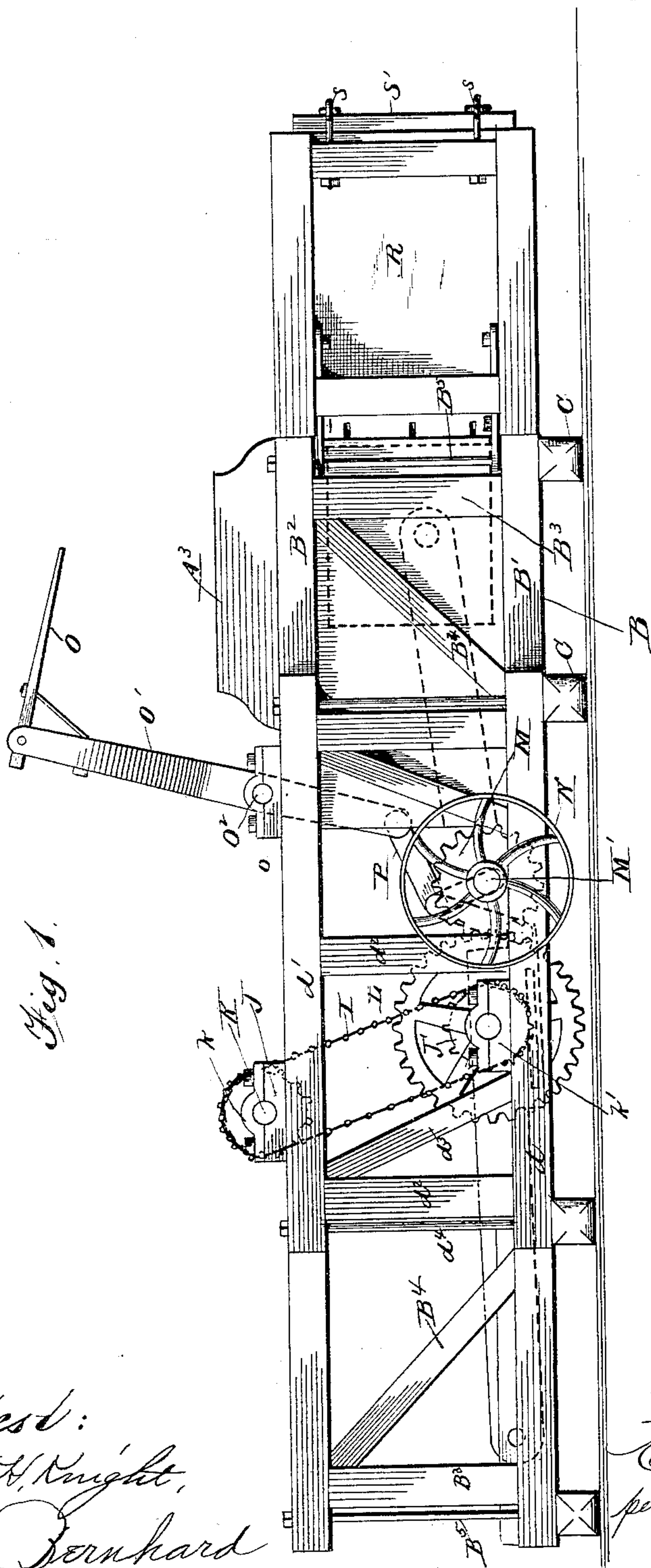
4 Sheets—Sheet 1.

E. E. FULLER.

BALING PRESS.

No. 318,460.

Patented May 26, 1885.



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H. Bernhard

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(No Model.)

4 Sheets—Sheet 2.

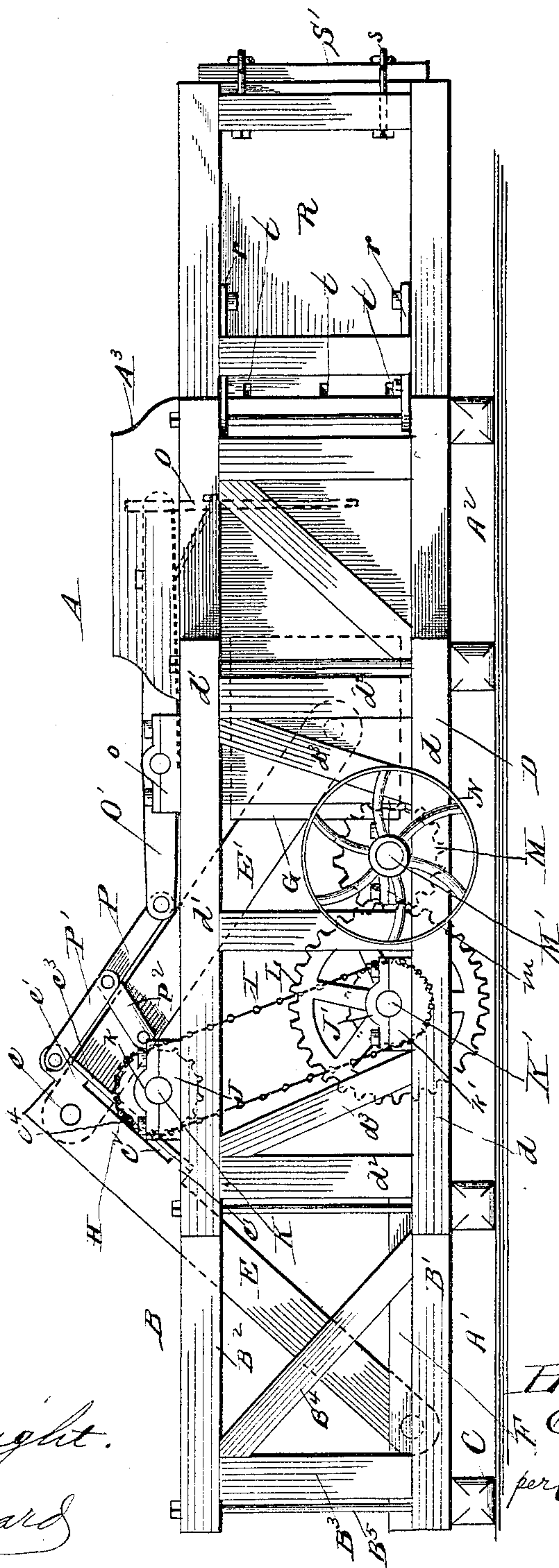
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Fig. 2.



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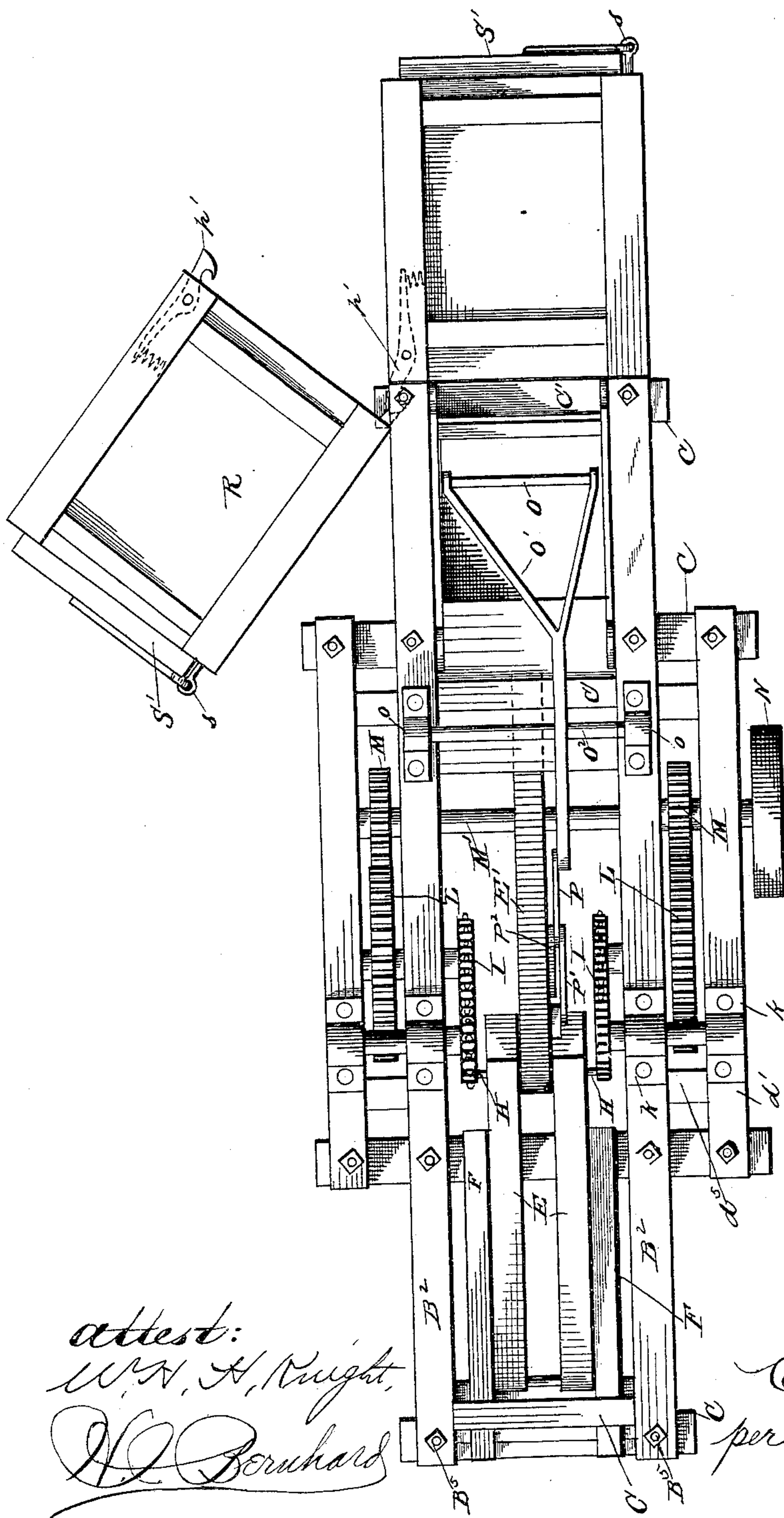


Fig. 3.

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Fig. 4.

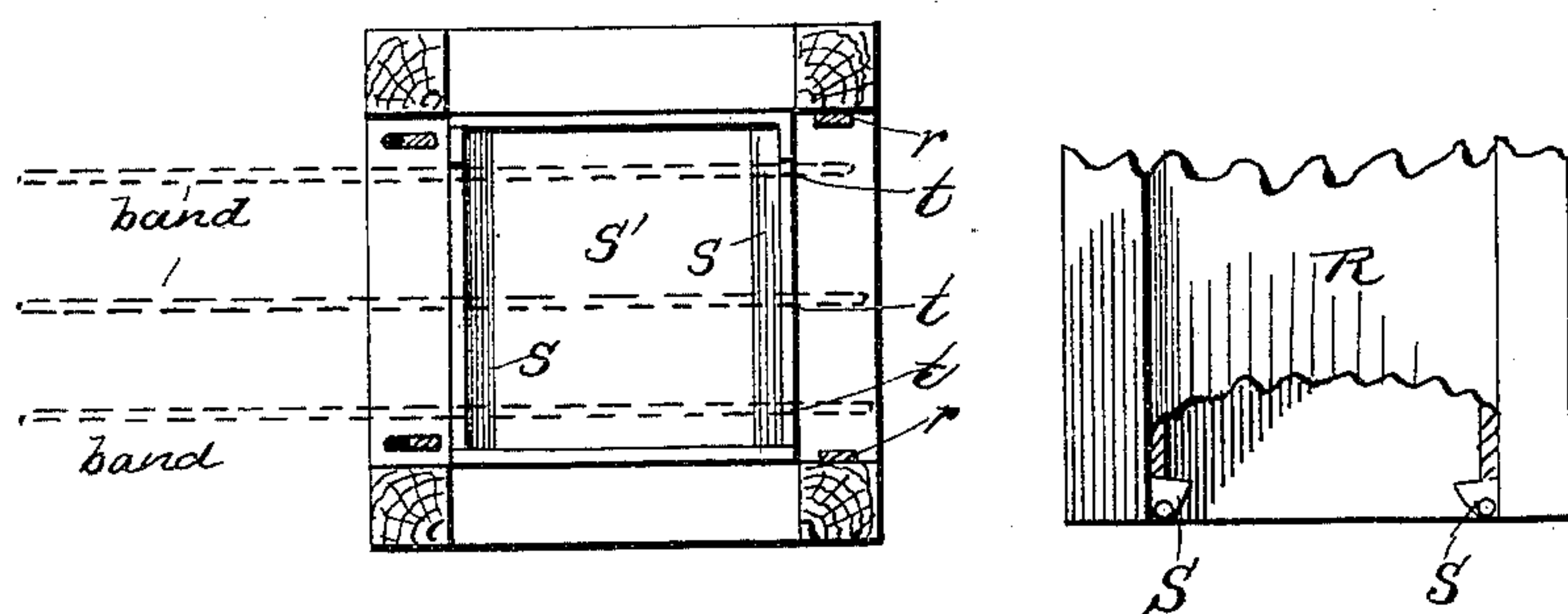


Fig. 5.

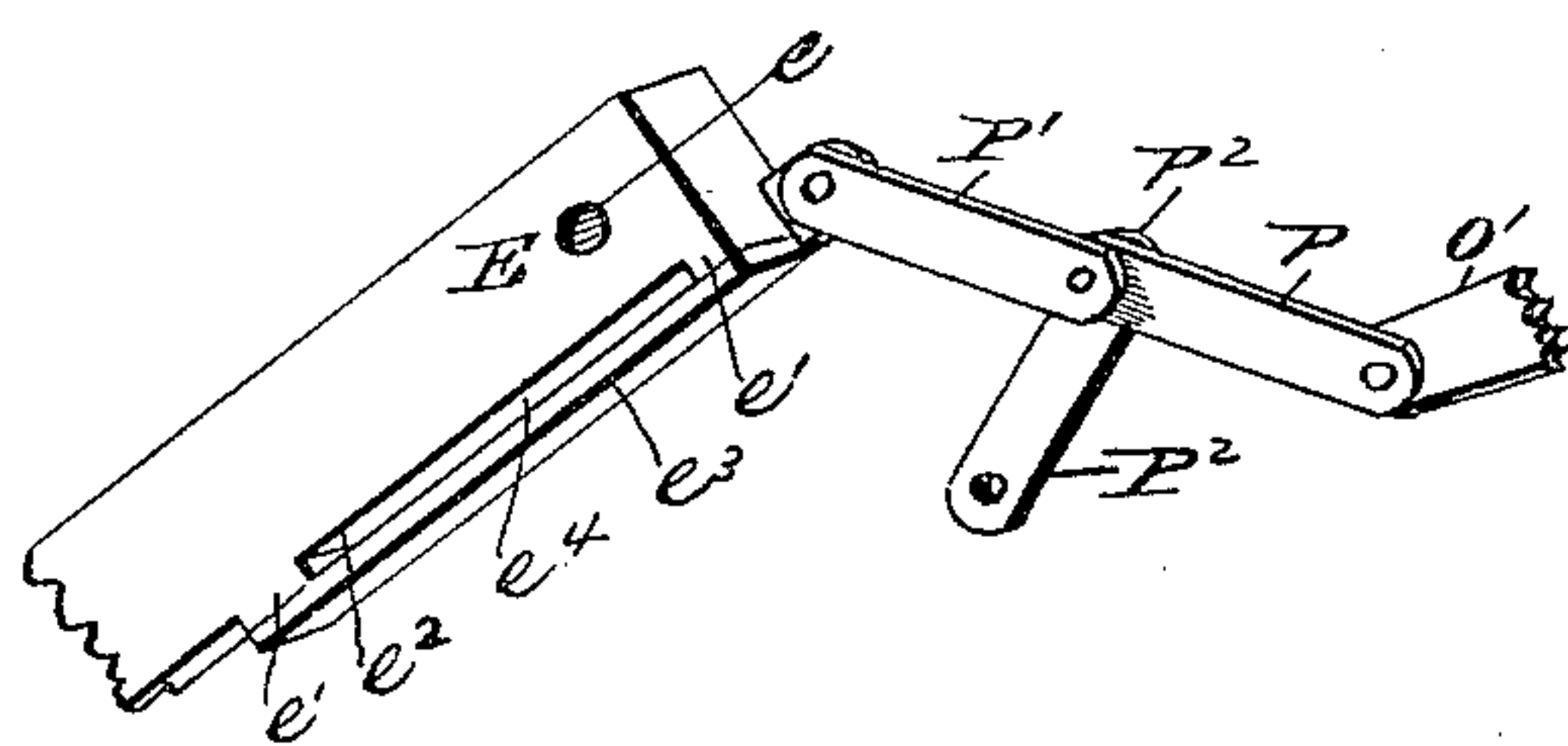
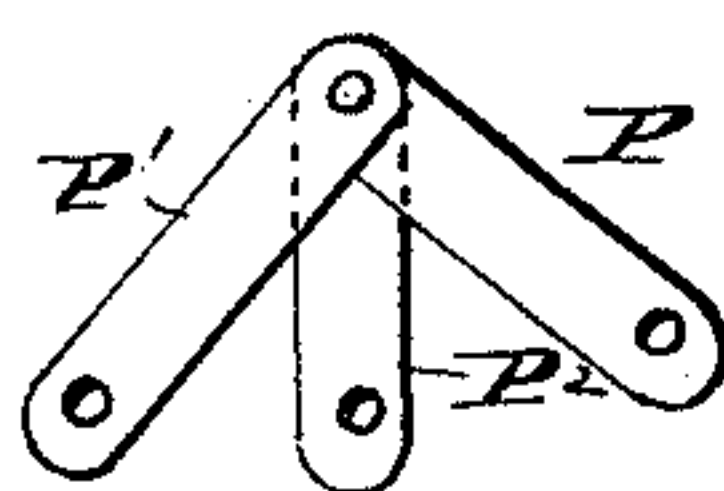


Fig. 6.



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UNITED STATES PATENT OFFICE.

E. FULLER, OF MONTICELLO, ASSIGNOR OF ONE-HALF TO GEORGE HOUGHTON, OF MINNEAPOLIS, MINNESOTA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 318,460, dated May 26, 1885.

Application filed August 9, 1884. (No model.)

To all whom it may concern:

Be it known that I, EBEN E. FULLER, a citizen of the United States, residing at Monticello, in the county of Wright and State of Minnesota, have invented certain new and useful Improvements in Baling-Presses; and I do declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to baling-presses for hay, straw, excelsior, wool, flax, hemp, hops, and similar material, and has for its object the provision of a simple, compact, and durable press, the several parts and elements of which are so arranged with relation to each other as to produce a structure having great strength with a minimum of weight and material, while at the same time the mechanism for operating and controlling the plunger and folder is adapted to give greatest pressure with a minimum of motive power, thereby reducing strains upon the machine.

It further has for its object the provision of a press provided with chambers, wherein the bale is formed and bound, hinged or pivotally connected to the press-body and adapted to be swung into and out of alignment with the main body of the press.

It further has for its object the provision of means for operating the folder in a simpler and more satisfactory manner than heretofore.

To the accomplishment of the above my invention consists in the construction and arrangement of the various parts, substantially as hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a press embodying my invention, with the plunger within the press-body and the folder elevated. Fig. 2 is a similar elevation showing the plunger retracted and the folder in the position it assumes when introducing the material into the press. Fig. 3 is a top plan view of the drawing shown in Fig. 1. Figs. 4, 5, and 6 are detail views of parts of the operating mechanism.

Similar letters of reference in the several

drawings denote like or corresponding parts in all the figures.

Referring to the drawings, A designates the press, consisting of the open-work part A', wherein the mechanism for operating the plunger and folder is located, and the inclosed part A², wherein the material to be pressed is placed and formed into bales.

B designates the main side frame, consisting of the sills B', top timbers B², parallel therewith, uprights B³, connecting the sills and top timbers together, and braces B⁴, the several elements composing the side frames being held securely together by straining-rods B⁵. The side frames B, above described, are held parallel with each other and at a suitable distance apart by means of a cross-timber, C, upon and to which the sills B' rest and are securely attached, and similar cross-timbers, C', extending from one to the other of the top timbers B². (See Fig. 3.) The side frames B are further strengthened and supported by the bottom, top, and sides of the bale-chamber, as will be readily seen.

D designates supplemental side frames, consisting of the sills d, top timbers d', parallel therewith, uprights d², and braces d³, all held and secured firmly together by straining-rods d⁴, as clearly shown in Figs. 1 and 2. The supplemental frames D are placed outside of and parallel with the main frames B at each side of the press, the sills d of said frames D resting upon and secured to the projecting ends of the cross-timbers C, while the top timbers d' of the frame are connected by short timbers d⁵ with the top timbers B² of the frame B, as shown in Fig. 3.

It will be seen that the press-frame as described will be compact, simple, durable, and strong, and therefore capable of withstanding great strains.

In connection with the above-described press-frame and body I employ mechanism for operating the plunger similar to that shown in my patented press, No. 288,937, dated November 20, 1883, said mechanism consisting of the toggle-timbers E E', pivoted together at e, and having their free ends pivoted, respectively, to anchor-timbers F, secured to the forward end of the press-frame and the plunger G, as shown. The rear ends of each of the timbers E are provided upon their under sides

with offsets e' , intermediate cut-away portions, e^2 , and plates e^3 , that extend from one to the other of offsets e' , whereby slots e^4 are formed, into and through which a rod, H, extends from one to the other of two sprocket-chain bands, I I, that extend around and are operated by sprocket-wheels J J', mounted on shafts K K', journaled in boxes $k k'$, secured, respectively, to the upper timbers, B² d' , and the sills B' d of the side frames at each side of the machine.

L L designate spur gear-wheels mounted upon the shafts J' at each side of the machine. These wheels engage with and are rotated by spur-pinions M mounted upon each end of a shaft, M', that extends across and is journaled in boxes m , secured to the sills at each side of of the machine.

N designates a band or power wheel mounted upon one end of the shaft M'. If desired, a similar wheel may be mounted upon the opposite end of the shaft M'.

G designates the plunger, which moves back and forth in that portion of the press-chamber, A², immediately below the hopper A³.

So far as described the mechanism for operating the plunger is similar to that shown in Patent No. 288,937, hereinbefore referred to, and operates in a similar manner.

I will now describe the means by which I operate the folder O.

O designates the folder, secured to one end of a lever, O', fulcrumed upon a shaft, O², extending from side to side of the machine, and journaled in boxes o , secured to the top timbers B² of the frame B at each side of the machine. The opposite end of the lever O' is pivoted to a link, P, the opposite end of which is pivoted to one end of each of two links, P' P², one of which, P', is pivoted at its opposite end to a projection, P³, extending from the end of the toggle-timbers E. The remaining link, P², is pivoted at its lower end to the other toggle-timber, E'. When the press is in operation, the folder, connected as described to the toggle-timbers of said press, is caused to respectively assume the positions shown in Figs. 1 and 2.

The described construction of folder and mechanism for operating it I deem of importance, as I am enabled by such construction to obtain satisfactory results.

I provide my improved press with supplemental chambers R, hinged at $r r$ to one side of the body of the press, (see Figs. 1, 2, and 3,) and held in a closed position by a latch, r' . (See Fig. 3.) I preferably use two swinging chambers hinged, respectively, to the opposite sides of the press, each being provided with securing-latches r' , retainers S, (see Fig. 4,) and end doors, S', hinged at s to one side of each of the supplemental chambers, and held in any closed position by any suitable means.

t designates notches formed in the forward edges of the side walls of the supplemental

chambers for the reception of the bale-bands, as hereinafter described.

The operation of my improved press is as follows: The cord or band is first laid across the front of one of the chambers R, in the notches t , said chamber being closed against the end of the main body A². The end door is now closed and secured and the press started, the material passing into the chamber R against the end door, S', thereof. The bands by such operation are carried about the forming bale, as will be understood. When the the bale is completed, the chamber is swung to one side, and the remaining chamber, with the bale-bands in position, is swung into alignment with the press-body without stopping the action of the plunger. While the latter chamber is being filled the completed bale in the first is tied, the door S' opened, and the bale removed, and fresh bands placed in the notches t for its next succeeding bale. The retainers S operate to keep the bale in proper position until tied, as will be understood.

From the foregoing it will be observed that a continuous action of the plunger is maintained, and the bale is formed against the solid end of the chamber R without the use of followers or partitions.

If desired, only one swinging chamber may be used, in which case, after the first bale has been formed against the door, as before described, the chamber is swung open, the bale tied, and the bands for the next bale are placed in the notches t . The chamber is now swung back into alignment with the press-body and latched, the door S' opened, and the next bale allowed to form against the end of the bale within the body R, which will be forced outward sufficiently to be easily removed by hand, permitting the door to be again closed.

It will be observed that in baling some of the materials hereinbefore referred to the end doors in the bale-chambers can be dispensed with.

Modifications in details of construction may be made without departing from the principle or sacrificing the advantages of my invention.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a baling-press for hay, straw, and similar material, the horizontal press-body provided with pressing mechanism, in combination with swinging bale-forming chambers hinged to the end of the press-body at opposite sides thereof, substantially as described.

2. In a baling-press for hay, straw, and other material, the horizontal press-body provided with folding mechanism and pressing mechanism, in combination with swinging bale-forming chambers hinged to the end and at opposite sides of the press-body, and having retainers and doors whereby their outer free ends are closed, substantially as described.

3. In a baling-press for hay, straw, and other similar material, the press-body having a plun-

ger operated by toggle-timbers E E', in combination with swinging bale-forming chambers R, hinged to the end of the press-body and provided with retainers S, latch r', and door S', substantially as described.

4. In a baling-press for hay, straw, and other similar material, the side frame B, constructed as described, having the sills B', top timbers B², uprights B³, braces B⁴, cross-timbers C C', and straining-rods B⁵, in combination with the toggle-timbers E E', plunger G, and operating mechanism, substantially as described, and for the purpose set forth.

5. In a baling-press for hay, straw, and other similar material, the combination of the press A, having frames consisting of the sills B', top timbers B², uprights B³, braces B⁴, cross-timbers C C', and straining-rods B⁵, with the plunger-operating toggle-timbers E E', actuated by mechanism substantially as described, and a swinging chamber, R, wherein the bale is formed, substantially as described.

6. In a baling-press for hay, straw, and other similar material, the combination of the press-frame constructed as described and provided with plunger-operating toggle-timbers E E', operating mechanism therefor, and swinging chamber R, wherein the bale is formed, with supplemental side frames D, having sills d, top timbers d', uprights d², braces d³, and straining-rods d⁴, substantially as and for the purpose set forth.

7. In a baling-press for hay, straw, and other similar material, the combination of the folder O, having lever O' and links P P' P², substantially as described, with the plunger-operating toggle-timbers E E' and their operating mechanism, as herein set forth.

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

EBEN E. FULLER.

Witnesses:

ASHLEY C. RIGGS,
GEORGE W. RIGGS.