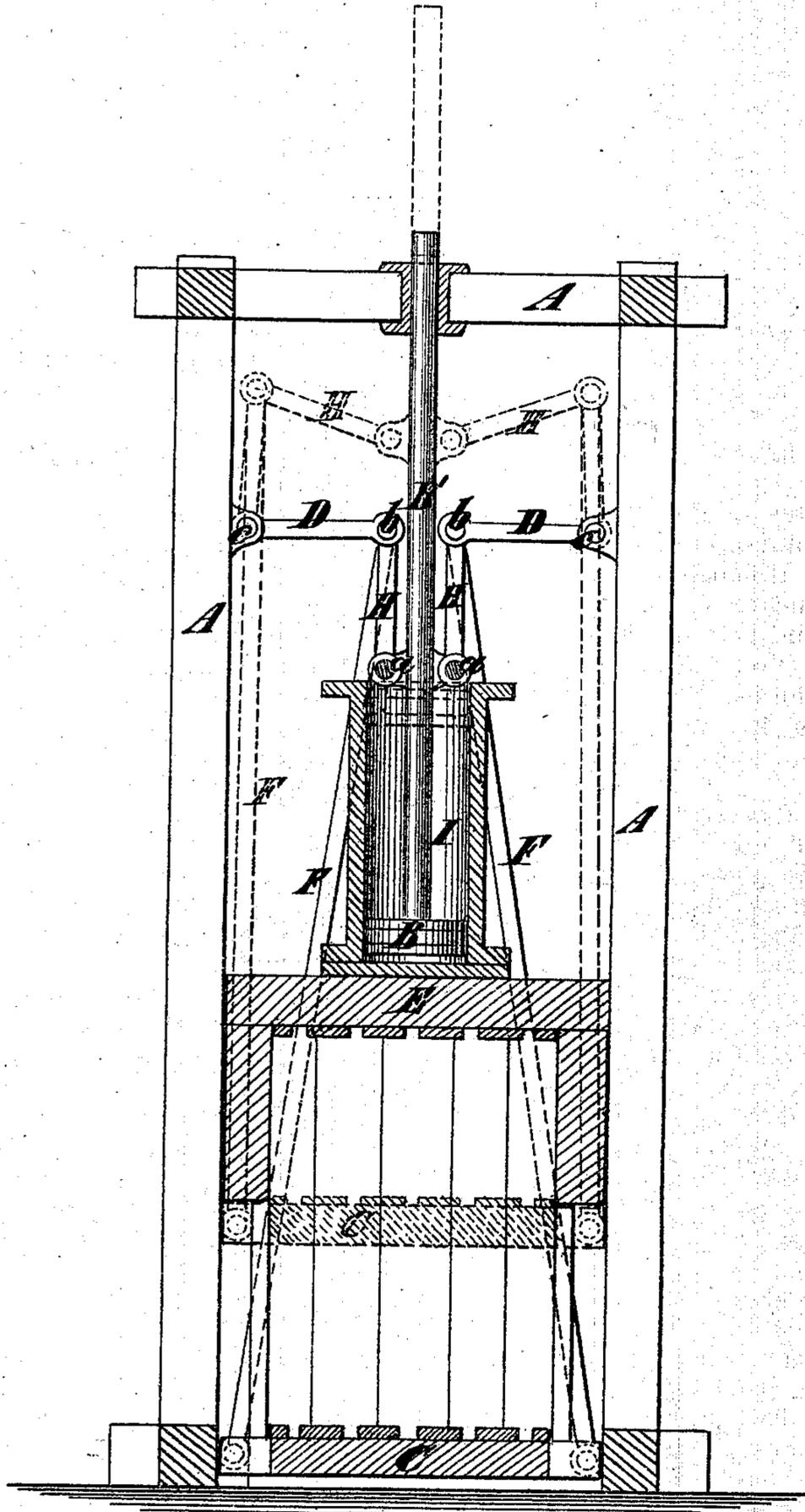


J. B. ROOT.
Baling-Presses.

No. 146,096.

Patented Dec. 30, 1873.



Witnesses
John Becker.
Fred Haynes

John B. Root
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

JOHN B. ROOT, OF NEW YORK, N. Y.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. **146,096**, dated December 30, 1873; application filed November 1, 1873.

To all whom it may concern:

Be it known that I, JOHN B. ROOT, of the city, county, and State of New York, have invented an Improvement in Power-Presses for Hay, Cotton, &c., of which the following is a specification:

This invention relates to those presses in which the action of steam on a piston is made to operate the platen. It consists in a simple, strong, and effective means of connection between the piston-rod and platen, which effects a constant increase in power as the compression of the article in the press progresses.

In the accompanying drawing, the figure is a central vertical section of a press made with my improvements.

Similar letters of reference indicate corresponding parts in the figure.

A is the frame of the press, E is its head, and C its platen, which in this case is undermost. I is the cylinder which contains the piston B, through whose means the platen is operated. It is situated on the head E, midway between the upright timbers of the frame A. On the piston-rod B', in suitable position, there is a collar or yoke, G, to whose ends two links, H H, are pivoted by pins *a a*. These links are united, by pins *b b*, with radius-arms D D, which work on fixed pivots *c c* provided on the uprights of the frame A. Rods F F connect the platen C with the pins *b b*, that unite the links E with the radius-arms, and thus the piston is connected with the platen.

As soon as the article to be compressed is placed in the press, steam is admitted below the piston B, which is thereby raised, and, through the medium of its connection with the platen, raises it at the same time. At the start the motion imparted to the platen is very rapid—almost equal to the travel of the pis-

ton itself, because the upward pull on the rods F F is nearly in the direction of their length; but gradually, as the piston rises, the radius-arms, swinging on their fixed pivots to accommodate themselves to the travel of the piston, pull the outer ends of the links H H nearer and nearer to the uprights of the frame, and consequently cause the upper ends of the rods F F to move similarly, and to that extent impede their upward movement.

Owing to this fact, the disparity between the speed of the piston's travel and the travel of the platen is constantly increasing in favor of the piston, an increase of leverage in the connection between them being the cause of it. Thus the first part of the compression, which requires comparatively little power, is performed very expeditiously, while, as the compression is completed, it gradually requires more and more force to effect it, the power of the press increasing, till at the end it is immensely powerful.

When the compression is completed, the steam is exhausted from under the piston, and the platen then descends by reason of the weight on it.

Hydrostatic power can be used in connection with this press, as it is often used with presses of like character.

What I claim as my invention is—

In a baling-press operated through the medium of a cylinder-piston and piston-rod, connecting together at their extreme ends by a single bolt, *b*, the platen-rods F, yoke-links H, and radius-arms D, as herein shown and described.

JOHN B. ROOT.

Witnesses:

HENRY T. BROWN,
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