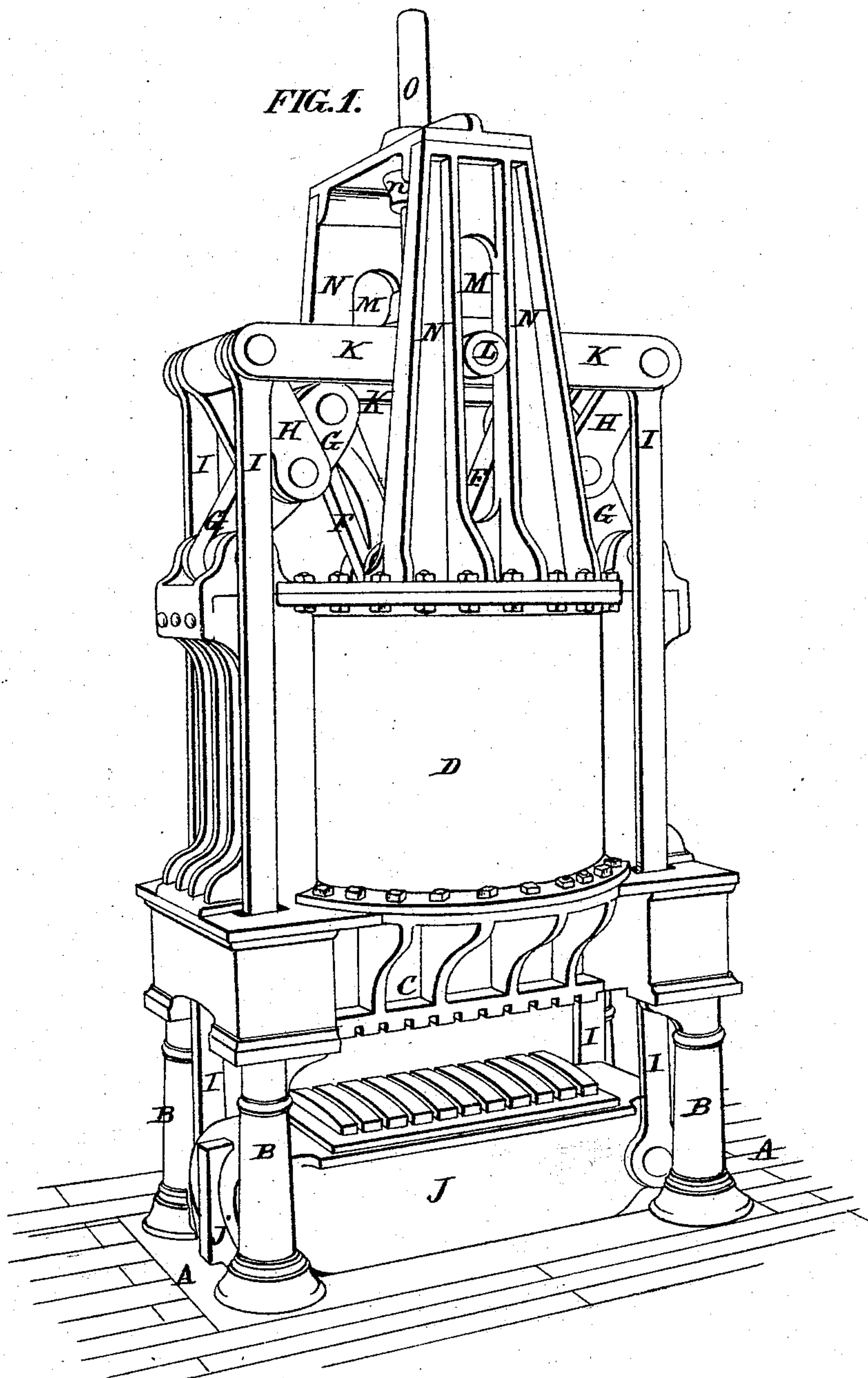


**E. L. MORSE.**  
**Steam Cotton-Presses.**

No. 153,839.

Patented Aug. 4, 1874.



ATTEST:

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*Henry Tanner*

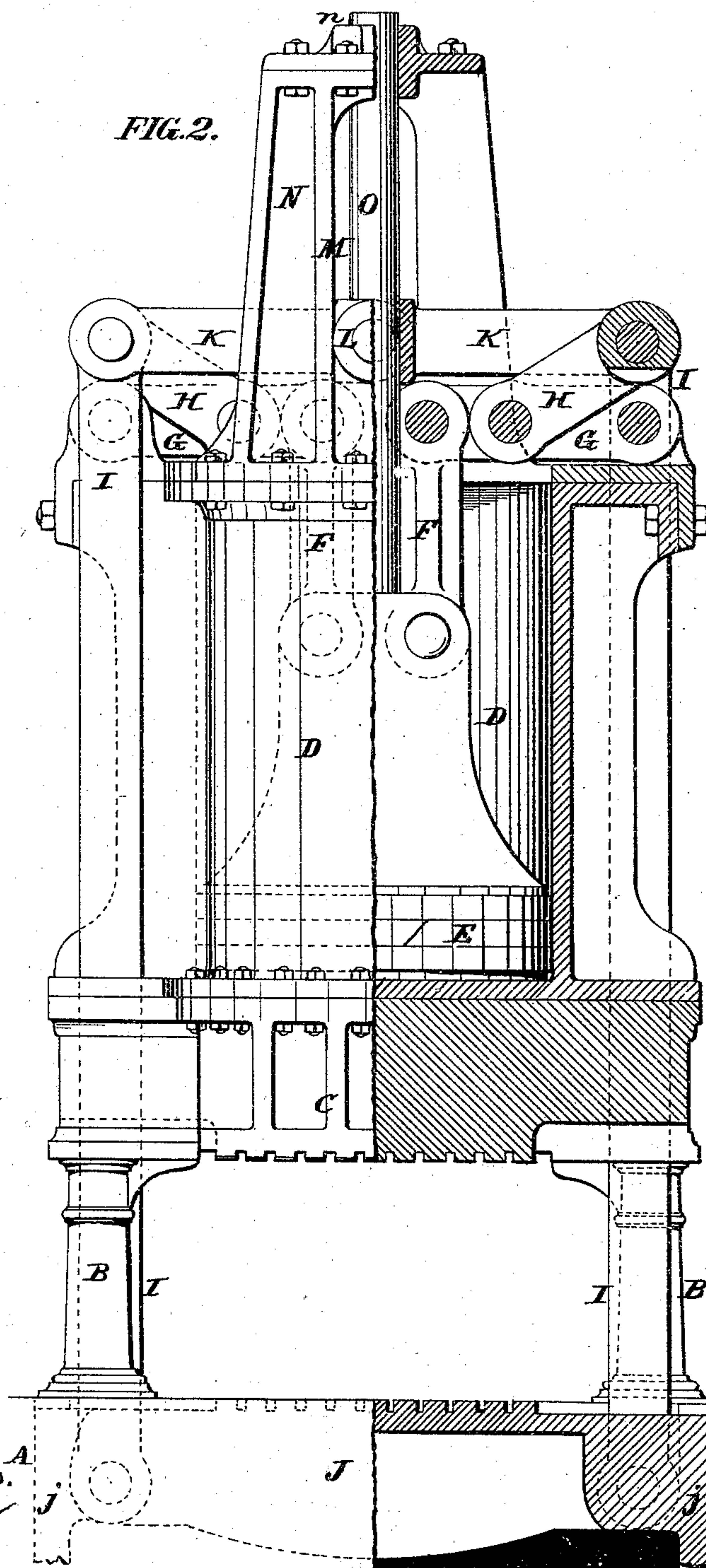
INVENTOR:

*Edmund L. Morse*  
*Per Knight Bros.*  
*Atty.*

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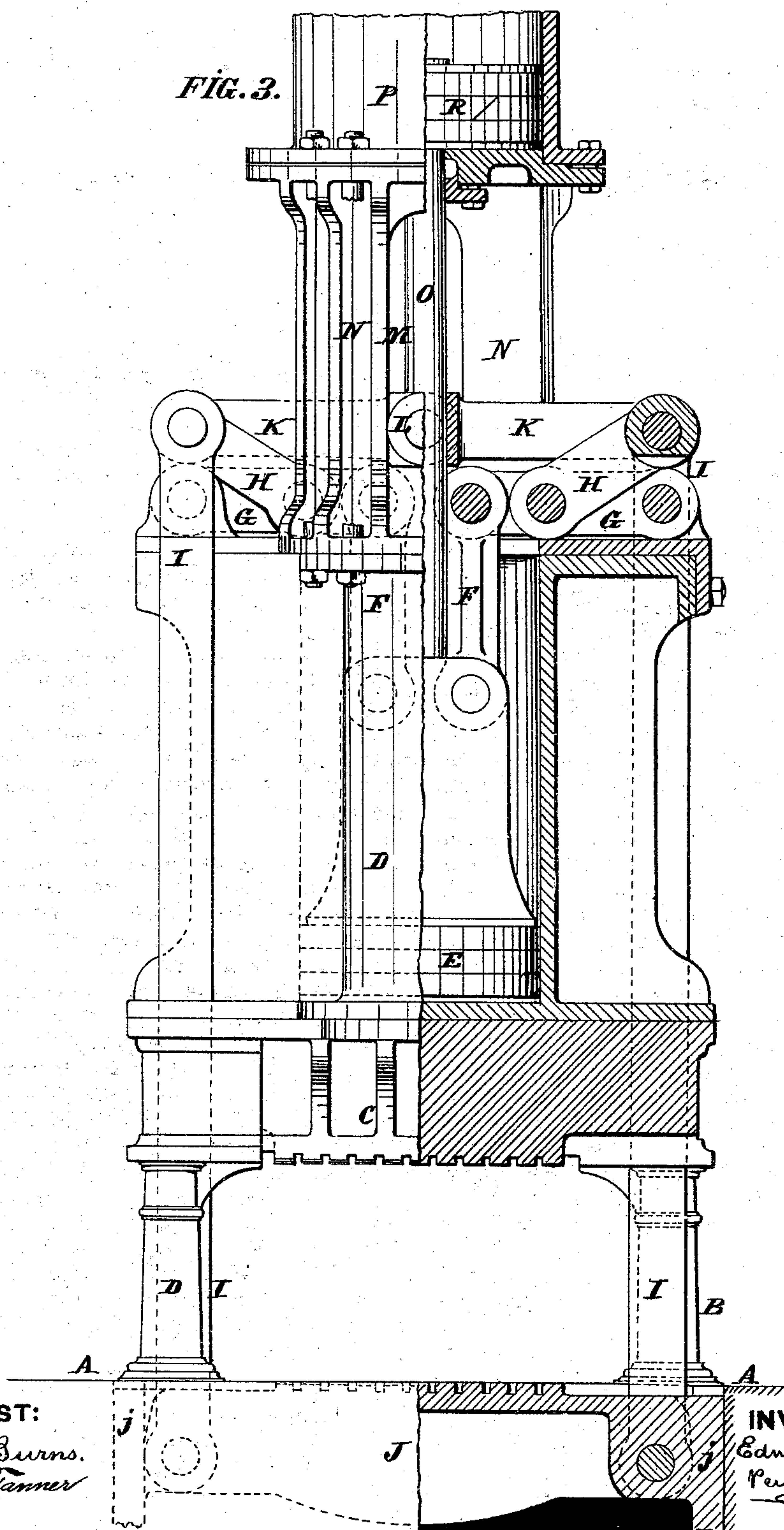


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*FIG. 3.*



**ATTEST:**

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*Henry Tanner*

**INVENTOR:**

*Edmund L. Morse*  
*Per Knight*  
*Atty*



# UNITED STATES PATENT OFFICE.

EDMUND L. MORSE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF HIS  
RIGHT TO JOSEPH W. BRANCH, OF SAME PLACE.

## IMPROVEMENT IN STEAM COTTON-PRESSES.

Specification forming part of Letters Patent No. **153,839**, dated August 4, 1874; application filed  
June 15, 1874.

*To all whom it may concern:*

Be it known that I, EDMUND L. MORSE, of St. Louis, St. Louis county, Missouri, have invented a certain Improved Cotton-Press, of which the following is a specification:

My improvement consists in the combination of one or more steam pistons and toggle, substantially as shown, to give the required movement to the rising platen.

In the drawings, Figure 1 is a perspective view of the machine. Fig. 2 is one-half in elevation and the other half in vertical axial section. Fig. 3 is a view similar to Fig. 2, showing the press constructed with two steam-cylinders.

A is the base, and B B the uprights or pillars supporting the upper platen C and the superstructure. D is an open-topped steam-cylinder, and E a piston working therein, the piston being raised by the pressure of steam beneath it, and carried down by its own weight and that of its attachments, when the steam exhausts from the cylinder. To the top of the piston are pivoted two pitmen, F F, whose upper ends are pivoted to two toggle-levers, G G, whose outer ends have pivot connections to the cylinder top. H H are toggle bars or links, whose inner ends are pivoted to the levers G G, between the ends of the latter. The outer ends of these links are pivoted to the upper ends of the lifting-rods I, of which one extends upward from each corner of the platen J. The upper ends of the lifting-rods are connected together by horizontal stay-bars K K, which carry at their mid-length anti-friction rollers L, traveling in vertical slots M, in the vertical frame N, whose top *n* acts as a guide for this piston-rod O. The stay-bars K prevent the upper ends of the lifting-rods being spread outward under the action of the toggle, and also, by reason of the anti-friction rollers M, confine them to a direct vertical movement.

In Fig. 3 is shown duplicate cylinders D P

and pistons E R for operating the toggle. The cylinders D P combined have an area equal to the one cylinder shown in Figs. 1 and 2, and the diameter of said cylinders may be the same, or may vary in diameter, if desired.

The advantage possessed by this arrangement is that where a small or light bale is to be compressed only one cylinder need be used, and thus accomplish a saving in steam over a press where only one large cylinder is used, as in Figs. 1 and 2.

The cotton-bale is placed upon the lower platen J while it is in its lower position, (see Fig. 2,) and the steam is then admitted beneath the piston. As the piston rises it swings the toggle-levers G G upward and outward, and raises the platen J with consequently decreasing speed and increasing power, as the resistance of the bale to compression becomes greater, owing to its contraction, as will readily be understood by examination of the toggle device. The platen J has end guides *j* working in grooves in the base.

By this arrangement a piston of much smaller area may be made to answer than if it were coupled directly to the lifting-rods, because when the cotton is very tightly compressed, so as to offer a very considerable resistance to any further compression, the piston is acting on the lifting-rods, through the toggle, with the greatest power.

I claim as my invention—

1. The combination of an open-topped cylinder, D, piston E, pitman F, toggle G H, and platen J, substantially as set forth.

2. The toggle-arm G, having links H pivoted to it at or near its mid-length, in combination with the pitman F, as and for the purpose set forth.

EDMUND L. MORSE.

Witnesses:

SAML. KNIGHT,  
ROBERT BURNS.