

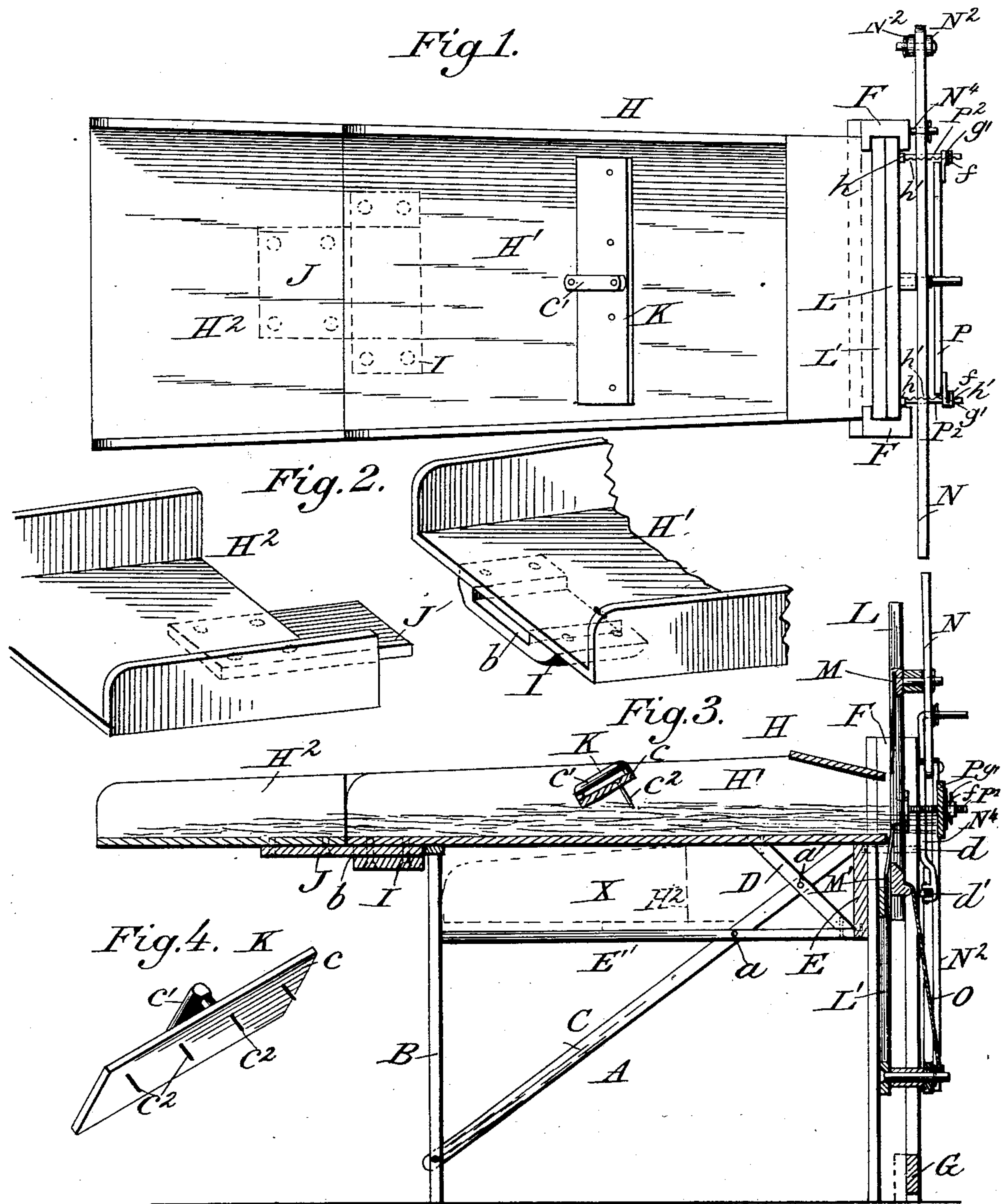
(No Model.)

2 Sheets—Sheet 1.

J. LAUGHLIN.
HAY, STRAW, OR FODDER CUTTER.

No. 541,284.

Patented June 18, 1895.



Attest:

J. H. Schott

Cassell Beverance

Fig. 8. M

M'

Inventor

John Laughlin
by Perkins & Lawrence
Mass. his Attorneys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

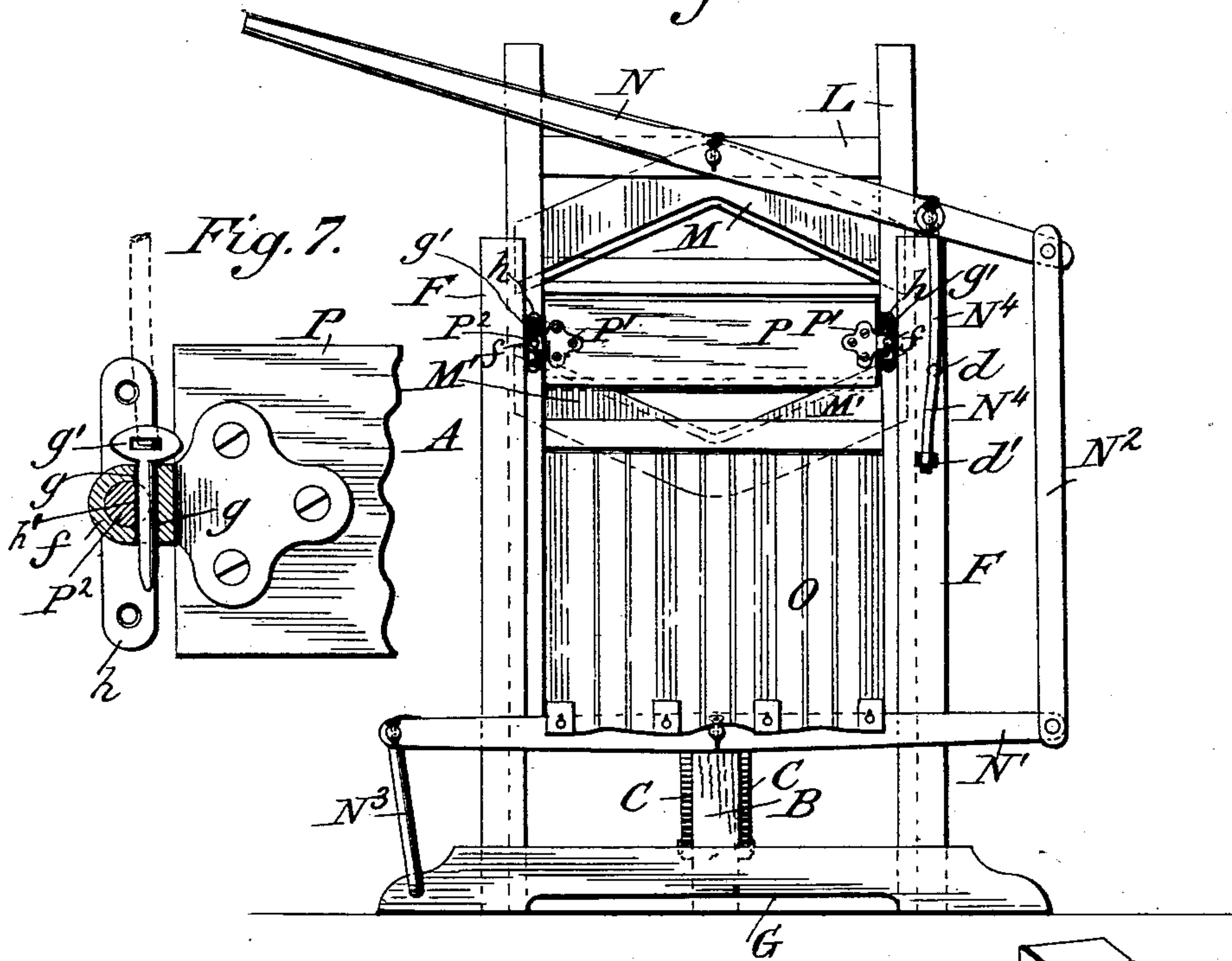
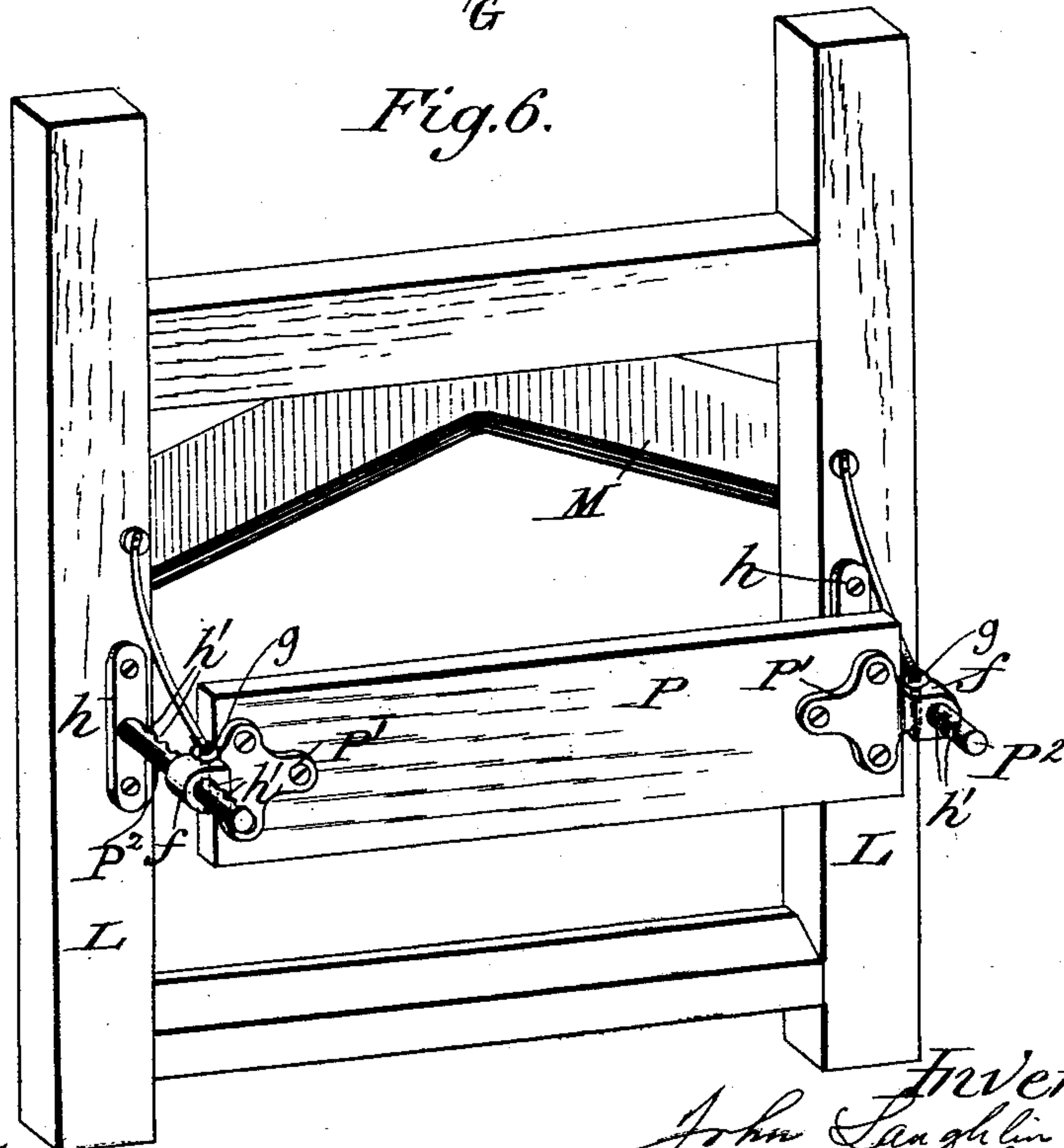


Fig. 6.



Attest:

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Casell Beverance

Inventor
John Laughlin
by Mas. Lemuel K. Ransom
his Attorneys.

UNITED STATES PATENT OFFICE

JOHN LAUGHLIN, OF YORK, PENNSYLVANIA.

HAY, STRAW, OR FODDER CUTTER.

SPECIFICATION forming part of Letters Patent No. 541,284, dated June 18, 1895.

Application filed June 27, 1894. Serial No. 515,887. (No model.)

To all whom it may concern:

Be it known that I, JOHN LAUGHLIN, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Hay, Straw, or Fodder Cutters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to hand operated hay, straw, and fodder cutters, especially that type shown in Letters Patent Nos. 76,209 and 180,042, heretofore granted to me, wherein two knives having, respectively, a cutting edge of approximately V shape, may pass one another in their up and down reciprocations, and by their reversely (slightly) convex form, and the action of a lever pressure bar having a friction roller on its bearing end, sharpen themselves while cutting the straw, feed or fodder with a shear-cut; and the object of my present improvements is to provide a simple and convenient means for supporting and adjusting on the discharge end of the machine, a gage stop-bar, so that the length of cut may be varied from, say, one quarter to four inches, or more or less, as desired.

In the accompanying drawings, Figure 1 is a top view of my improved feed-cutter; Fig. 2, a vertical central section of the same as it appears when fully equipped and in use. Fig. 3 is a perspective view of two portions of the cutting-box, the portions being shown separated but in relative positions for being united. Fig. 4 is a perspective view of the toothed and handled hand feed-block. Fig. 5 is a view of the forward end of the feed-cutter. Fig. 6 is a perspective view of the sliding frame to which the upper cutter and gage stop-bar are attached. Fig. 7 is a detail broken view of a portion of the gage stop-bar and one of the brackets and fastening-pins, and Fig. 8 is a diagram showing the convex shape of the knives.

In the drawings, A represents a frame for a feed cutter, and this frame, preferably, comprises a single rear standard B, two inclined, forwardly extending braces C, C, having attachment to the foot portion of standard B;

a short counter brace D, crossing the upper part of the braces C, C; a vertical front end board E, a horizontal brace E', and two upright grooved front standards F, F, connected at the bottom by a cross piece, forming an arched base or sill G, as represented. The braces C, C, abut with their mitered ends against the front end board E, and also against the under side of the stationary portion of the cutting box H, and are fastened at *a*, to the horizontal brace E'; and at *a'*, to the center of the counter brace D; while the counter brace abuts against both the bottom of the fixed portion H, of a cutting box and the top of the brace E', being secured by screws, or otherwise, as illustrated. The brace E', is dovetailed to the front end board and secured by screws.

The part H', of the cutting box H, is fastened in any suitable manner to the frame just described. On the underside of the front end of the part H', of the cutting box, an arched block I, is screwed, this block being so constructed that a wide groove *b*, is formed between it and the bottom of the part H', of the cutting box, to receive a tongue J, formed on an extension portable portion H², of the cutting box, said tongue being screwed to the under side of the portion H², and adapted to snugly and exactly fit into the groove in the arched block I, as is plainly illustrated in Figs. 1, 2, and 3 of the drawings. Sometimes it is necessary, as in packing for transportation, to take this extension off,—and at other times it is necessary in cutting feed, as corn stalks, straw and the like to add to the length of the cutting box. These requirements are met in a very perfect way by constructing the cutting box in two sections H', H², as herein shown and described. In Fig. 3, I have shown by dotted lines at *x*, that the frame is adapted for receiving the extension H², when it is removed from the part H', of the cutting box—and thus the extension can be moved away to a convenient position and kept safely when not in use, also the machine can be made more compact for transportation. The part H² of the cutter box H' can be put entirely out of the way when not in use, and while being transported. The hand feed block K, is formed of a flat board *c*, of a length nearly

the width of the trough and at right angles to the length of the block. An arched or loop-handle c' , is provided on top, while in the bottom of the board, rake teeth c^2 , of metal, or wood, are inserted. By taking hold of this handle with one hand, the teeth can be forced down into the hay, straw or fodder, and by giving it short successive forward pushes, the material will be forced forward. This hand feed block affords a support to the operator, and thus saves him much strain of his back, a result not secured when the substances are fed forward by the hand directly, while, where a rake with a simple upright handle is employed, the control with the hand is not as perfect, and turning and bending of the hand and body are necessary to a far greater extent than with my block having a horizontal looped or arched handle.

The cutting mechanism of my machine comprises two reversely reciprocating frames L , L' , V edged knives M , M' , carried by said frame, and levers N , N' , connecting devices N^2 , N^3 ; also a lever pressure device N^4 , with roller d' ; all so connected, that the knives are reciprocated vertically in opposite directions. The frames move up and down in grooves of the standards F , F , one frame moving past the other, and both moving in the one pair of grooves.

The knives are made of sheet steel, with edges that are, approximately, in the form of a V ; and the blades are slightly convex on their opposite faces, see Fig. 8, so that as they pass each other they shall be self sharpening, and produce a double shear cut. A close fit between the knives as they descend, or in the cutting operation, is insured by the pressure bar N^4 , having the friction roller d' , at its free end. The hand lever N , is pivoted near the middle of its length to the top bar or rail of the frame L , and is also connected to the upper end of bar N^4 , which bar is connected some distance above the roller d' , to a bolt d , passed through one of the grooved standards, outside the vertical outer edges of the frames L , L' , confining it to said standard. The bar N^4 , serves to keep the lever N , in position, and for properly forcing it toward the grooved standards, and thereby causing said lever to move frame L , in close relation to the moving frame L' , and thus insure a perfect cut with the two knives, while at the same time room is afforded for the convex blades to pass each other with a contact which insures self-sharpening and a shear-cut. The lever N , has a long free handle end, and when it is raised, the frame L , moves with it, while at the same time, through the connecting parts N^2 , N^3 , it causes the lever N' , to descend and carry downward the frame L' , thus causing the two frames to separate the knives. Straw being fed between the knives while they are apart, the lever N , is forced downward by the operator pressing it downward carrying with it the

frame L , and causing the frame L' , through the connecting devices N^2 , N^3 and lever N' , to rise, thus bringing the edges of the knives together, so that they will pass each other with a shear-cut and sever the feed.

No specific claim is set up herein for the knives, moving frames and pressure bar with friction roller; nor the bracing, as these parts are substantially the same as in my patents hereinbefore mentioned.

P , is a broad, gage stop-bar applied at the discharge end of the machine. This bar is, preferably, made of wood, and provided with metal brackets P' , secured to its outer face at each end. Each of these brackets P' , is formed with a lug f , having a circular horizontal eye through it, and a vertical pin hole g , for the insertion through it of a pin g' , hung by a strap to the upper moving frame. The bar P , is supported on the frame L , by means of two round, notched arms P^2 , which are provided with brackets h , by which they are secured to the moving frame L .

On the inner sides of the bars, notches h' , answering to rack teeth, are formed, and on the bars the lugs f of the gage bar P are slipped. By inserting the pin g' , through the lugs, and in line with any two opposite notches of the two notched bars, the gage bar can be held at the required distance from the knives. If desired the gage bar can be cast in metal, and have its eyed lugs f , integral with it. This gage bar answers a very good purpose in connection with a machine having the two oppositely moving knives, or with even a single up and down moving knife; and by having it and its fastening pins connected to the moving frame, its use is rendered perfectly practicable, and the shortest as well as the longest required feed can be cut—the adjustment being very simple and perfect for the different lengths of feed required. The canvas or cotton cloth apron O , for discharging the feed, is fastened by its lower edge to the lever N^2 , and by its upper edge to a bottom cross bar of the upper knife frame L . This apron directs the cut feed from the machine, and as it becomes stretched discharges the same. As any obstruction, such as gravel, can pass through a space above the crotch of the lower knife, before the knives come together, the dulling or destruction of the knives will be avoided. The apron also acts as a gage for the proper elevation of the upper knife, inasmuch as when it is fully stretched, the machine will be open for a new feed and cut.

This machine as now improved has been found to work very successfully—and it answers very perfectly the general demands of farmers, as the hand lever power, with other features combined with the same, adapts it for cutting the various kinds of feed required for stock.

What I claim is—

The combination with a reciprocating knife

frame of a feed cutter, of an adjustable gage
stop block provided with eyed lugs, notched
arms projecting from the said movable frame,
and confining pins passed through the eyed
5 lugs and into the notches of the arms, whereby
both sides of the gage stop block can be accu-
rately adjusted the same distance from the
cutting blade, substantially as described.

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

JOHN LAUGHLIN.

Witnesses:

L. D. MCGIRR,
E. T. FENWICK.