

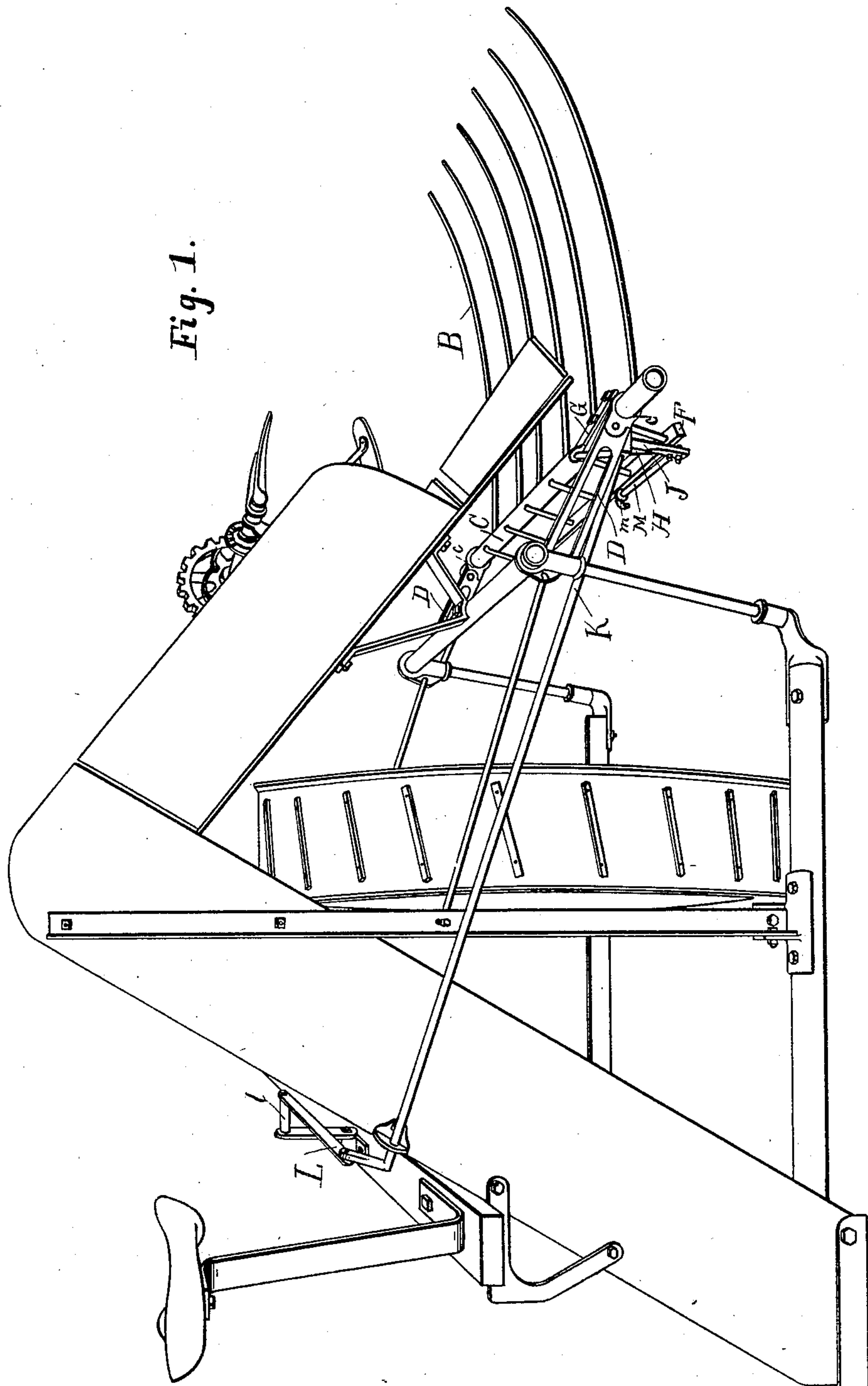
(No Model.)

3 Sheets—Sheet 1.

J. J. COURTNEY.
BUNDLE CARRIER FOR HARVESTERS.

No. 521,154.

Patented June 12, 1894.



Witnesses..

G. H. Swindells
S. V. Kennedy.

Inventor.

John J. Courtney
by *Richard H. H. H.*
Att'y.

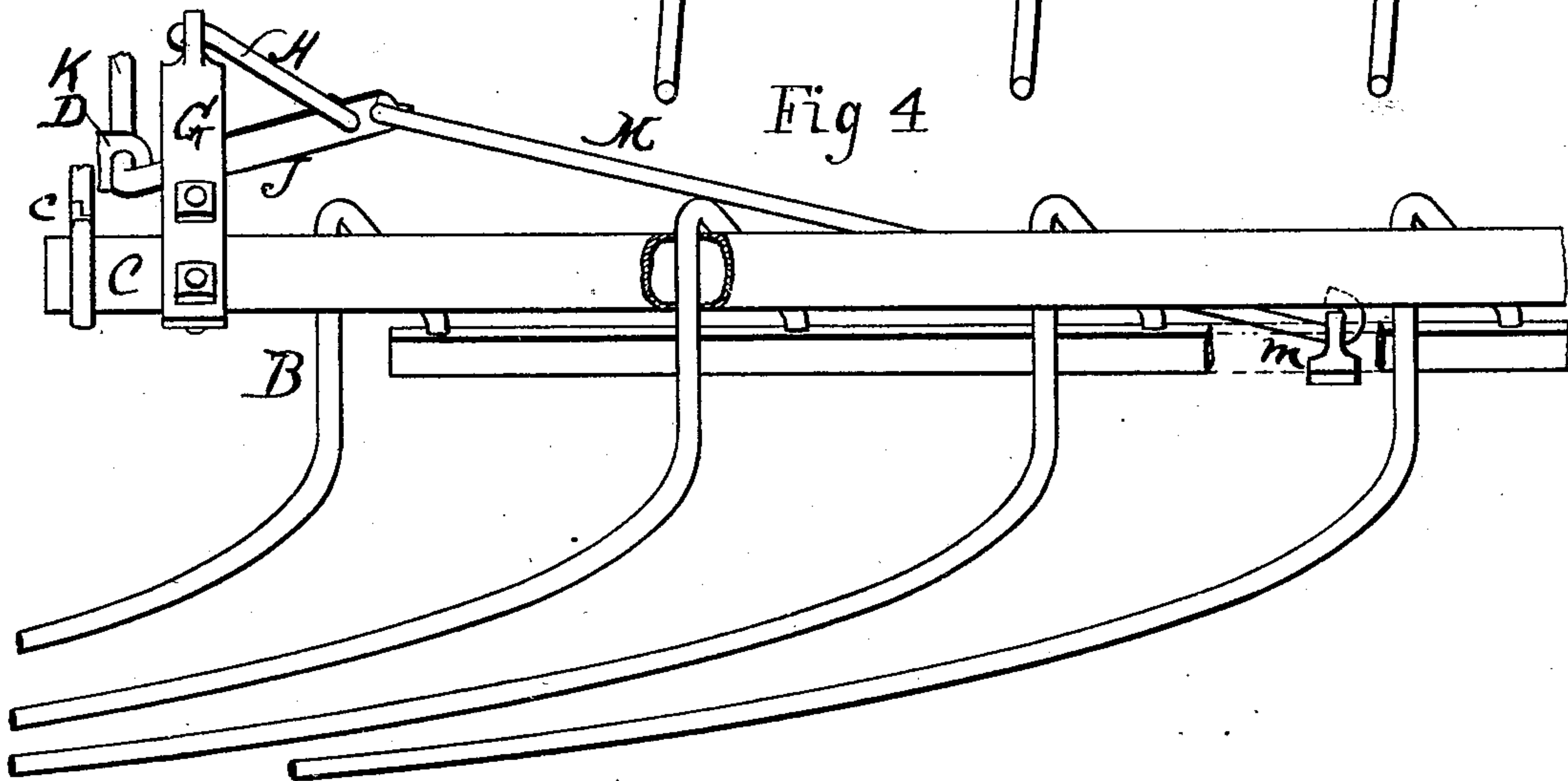
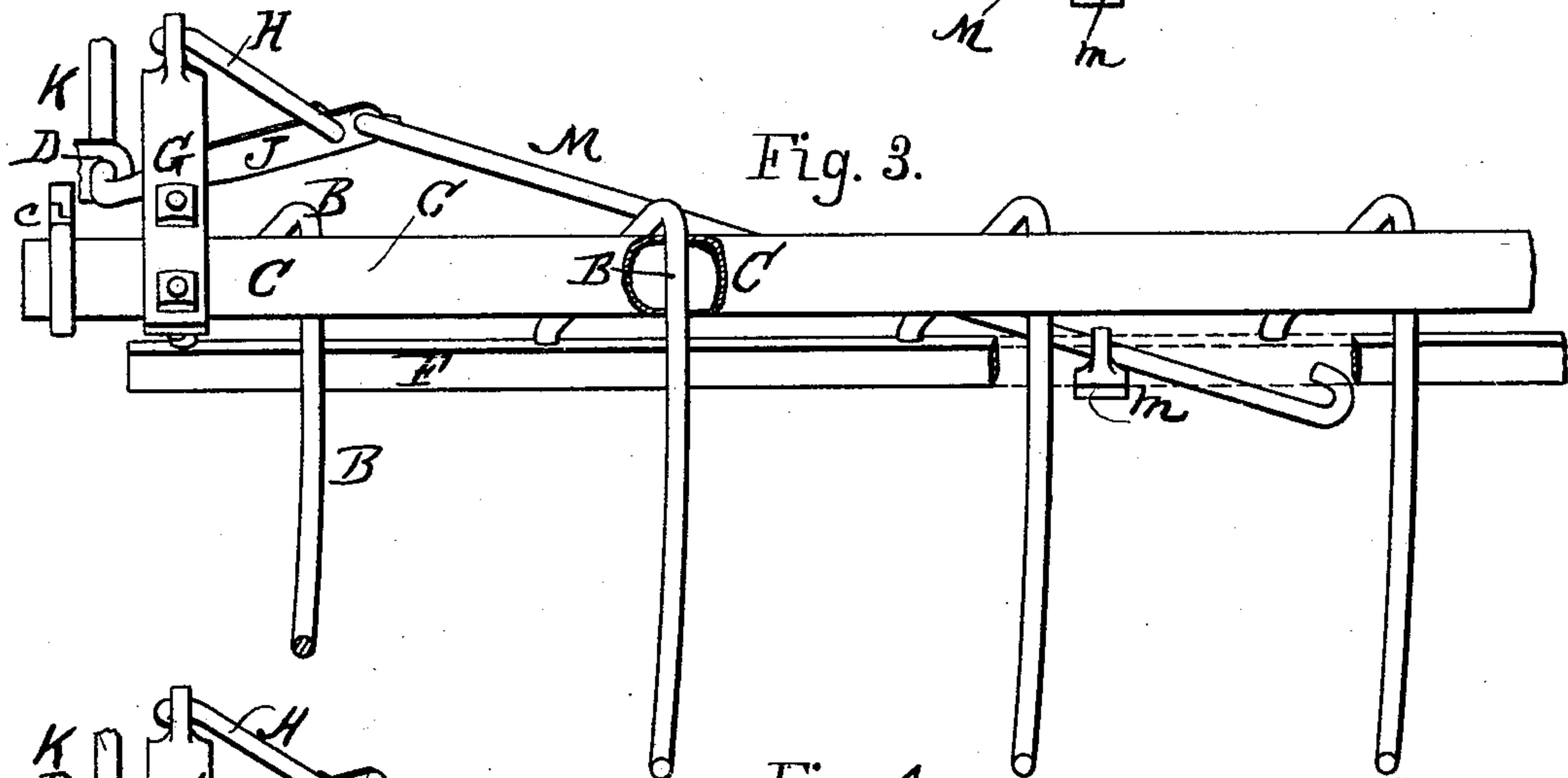
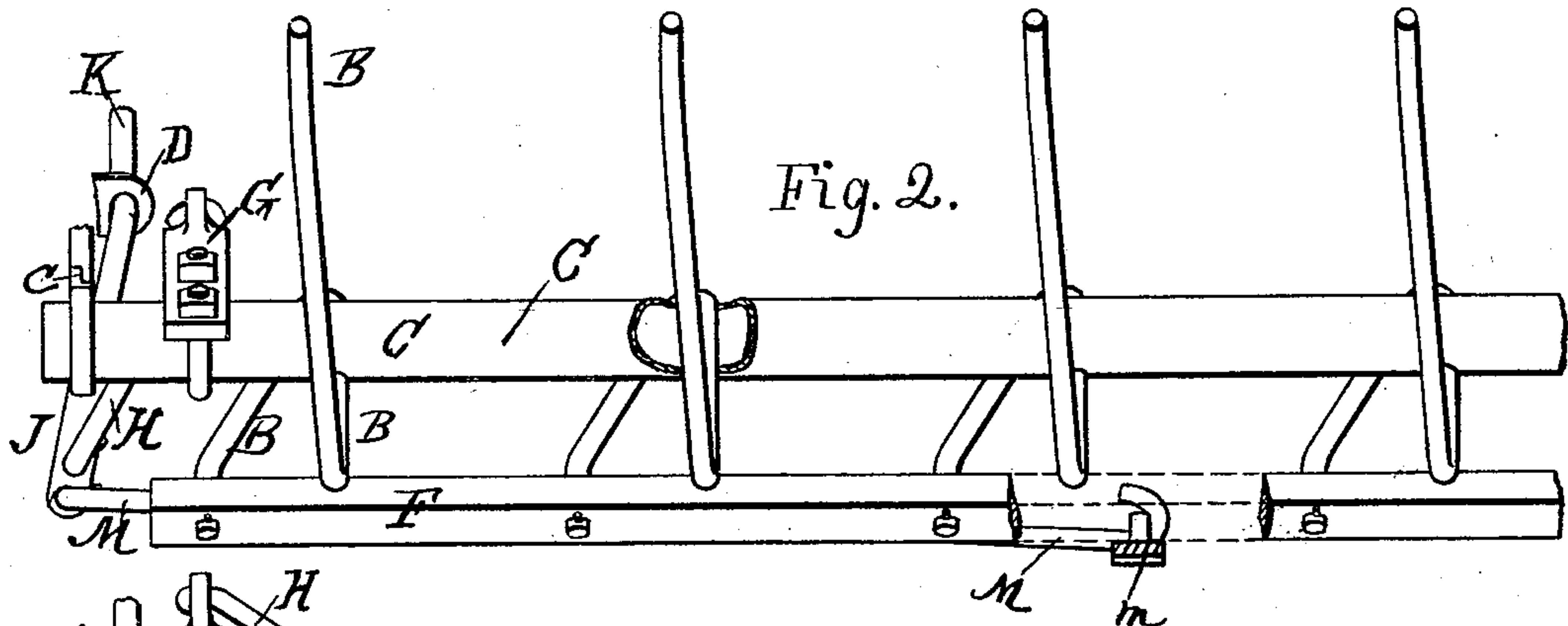
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3 Sheets—Sheet 2.

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Inventor

John J. Courtney
by *[Signature]*

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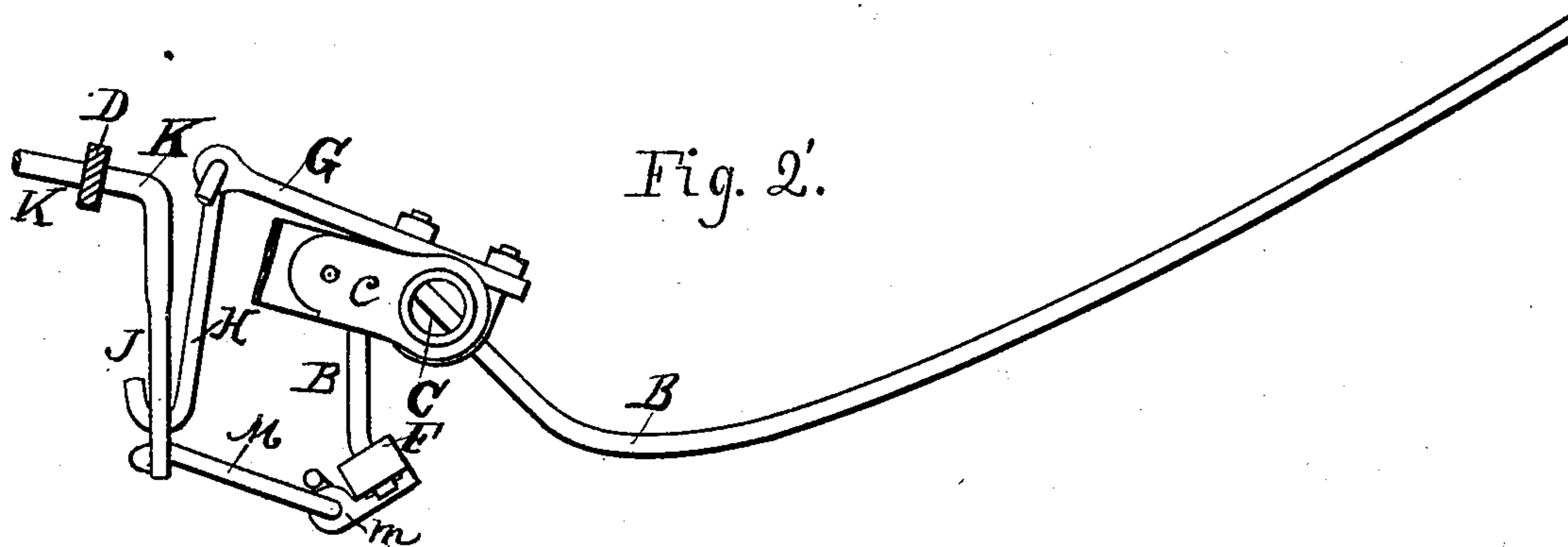


Fig. 2.

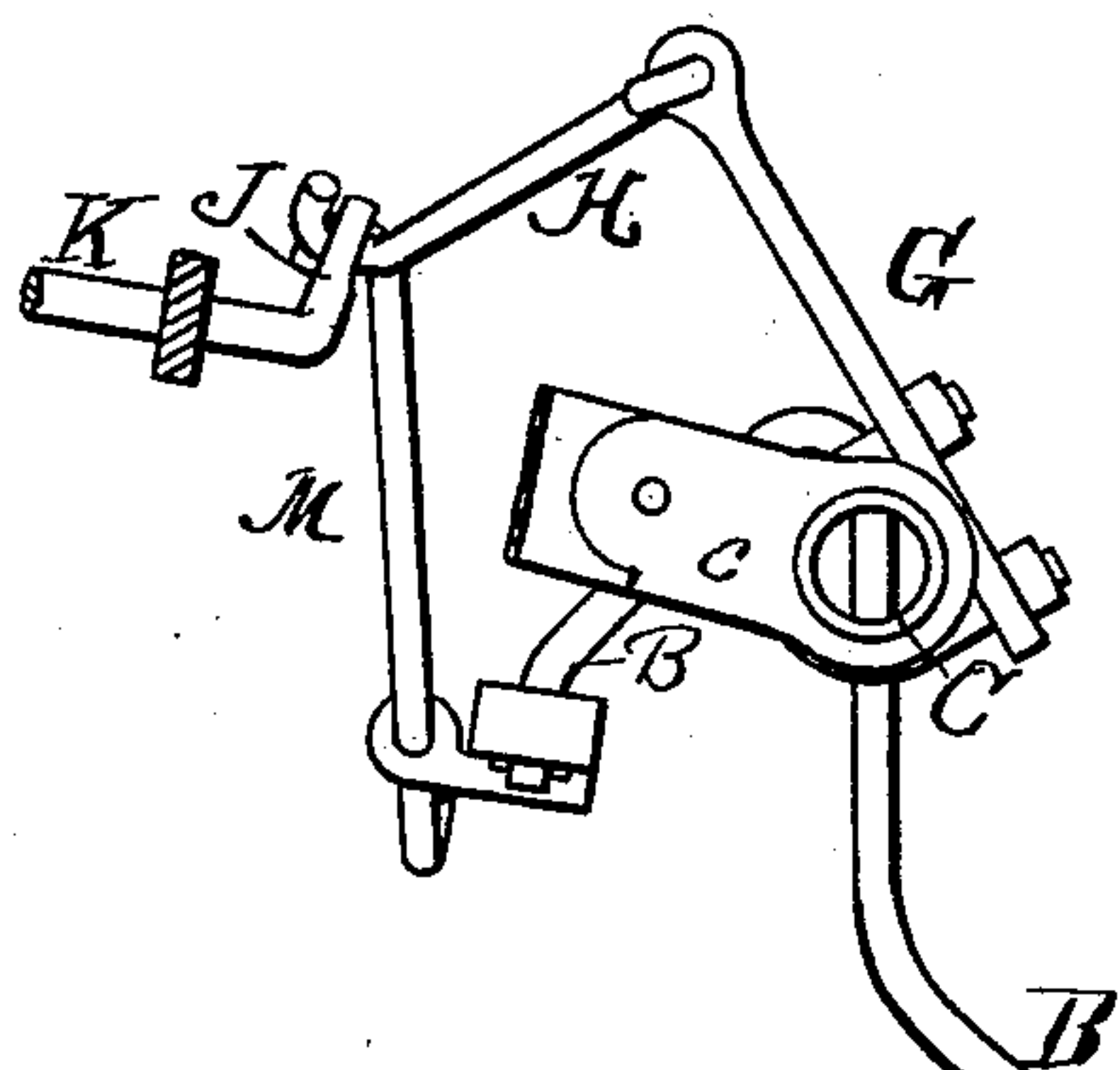


Fig. 3.

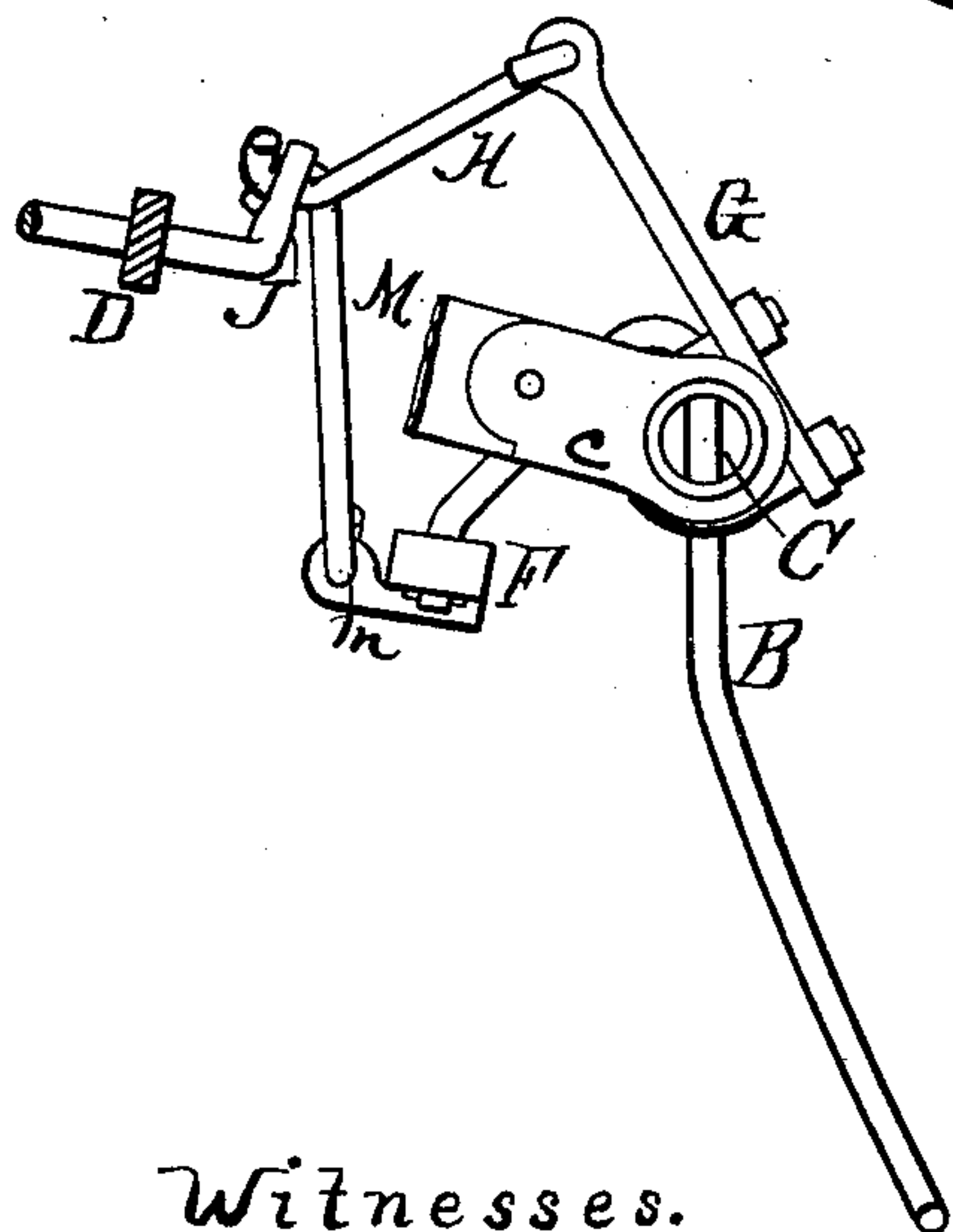


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN J. COURTNEY, OF MINNEAPOLIS, ASSIGNOR TO THE WALTER A. WOOD HARVESTER COMPANY, OF ST. PAUL, MINNESOTA.

BUNDLE-CARRIER FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 521,154, dated June 12, 1894.

Application filed July 8, 1893. Serial No. 479,962. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. COURTNEY, of Minneapolis, Minnesota, have invented a new and useful Improvement in Bundle-Carriers for Harvesters and Similar Machines, of which the following is a description, referring to the accompanying drawings, which form a part of this specification.

My invention is particularly applicable to harvesters having carriers with individually pivoted folding teeth. It has been usual heretofore to pivot these teeth to a stationary support, and as in most cases gravity has been employed to give the dumping motion and foot power to restore the carrier to its normal position, the pivots have been inclined so that the teeth have a positive inclined movement downward and backward, folding toward the machine. Without this inclination of the axes of motion there is no tendency of the carrier to dump unless actuated by the operator. On the other hand, when the axes are inclined, it is necessary to limit the upward and forward movement of teeth, in order that they may not reach a point in their rotation at which the motion is horizontal and therefore not capable of being started by the weight of the bundles.

One of the main objects of the present invention is to overcome these difficulties and objections, and the following is a full and clear description of the means I have invented for effecting such and certain other results; the distinctions between my invention and all similar devices with which I am acquainted being clearly pointed out.

In the present invention no inclination of the pivots is necessary, for the support of the teeth rocks downward, allowing the direct descent of the teeth in the action of dumping, while the folding motion takes place after the teeth have come in contact with the ground or stubble.

The object of my invention is, therefore, to produce a bundle carrier having a more direct action and a simpler and more easily operated motion, and whereby the sheaves or bundles may be dropped directly to the ground, and the fingers or teeth of the carrier subsequently withdrawn from beneath

the bundles and folded toward the machine. In restoring the carrier to its normal position, the teeth or fingers and the support are simultaneously returned to position, thus giving somewhat quicker action than would result if the two motions were successive instead of simultaneous.

To these and certain other ends and purposes which will be hereinafter described, my invention consists of the apparatus and its several parts, constructed, arranged, combined, and operating, substantially in the manner hereinafter described.

In the accompanying drawings, Figure 1 is a rear view showing a portion of the harvester and the automatic binder, with the carrier attached. Fig. 2 is a side elevation showing the carrier in position to receive the bundles. Fig. 3 is a similar view, showing the carrier in its first position of dumping before the teeth or fingers have begun to fold. Fig. 4 is a view similar to Fig. 3, showing the teeth folded. Figs. 2', 3', and 4', are views corresponding with Figs. 2, 3, and 4, looking along the support of the teeth in a direction at right angles to the normal position of the teeth.

Throughout the drawings, like letters of reference indicate like parts.

The teeth or fingers of the carrier are indicated by B.

C is a tubular rock shaft or support in which the teeth are severally pivoted. This rocking support is carried in clips, c, pivoted to the brackets, D, to allow the carrier to rise in passing over obstructions by swinging upon the pivots. The rods which form the teeth extend directly through the tubular support, C, as clearly shown in the figures, thus forming pivotal connections with the support without necessitating the use of specially designed clips or other attachments. The pivots in the normal position of the support incline toward the body of the harvester, as is clearly seen in the figures, but lie in planes perpendicular to the ground, in order that there may be no tendency to rotate under the weight of the bundles. This is one of the many distinctive features of my carrier. The inner ends of the teeth are pivotally secured to the reciprocating bar, F, by which they are

simultaneously returned to their normal position, or allowed to fold in as they trail along the ground.

G is an arm rigidly secured to the support, C, for rocking it.

H is a connecting rod or link extending from the end of the arm, G, to the crank, J, of the rock shaft, K, which transmits the motion from the pedal movement, L, to the carrier, and enables the driver or operator by depressing the crank or pedal, L, to rock the shaft, K, to the position shown in Figs. 1 and 2, and thereby draw down the arm G, and rock the support C into its normal position, with the teeth B horizontal.

To the reciprocating bar F is secured by a sliding or lost-motion connection, a second link or connecting rod, M, pivoted at its other end to the crank J. When the pedal is depressed and the crank is in the position shown in Figs. 1, 2, and 2', it is clear that both links, H and M, are brought in play, the one holding the carrier in its horizontal position, and the other drawing upon the bar F and holding the teeth in their outstretched position perpendicular to the rocking support C. When, however, the pedal is released by the operator, the weight of the bundles acting upon the carrier rocks the support C, drawing the crank J to the position shown in Figs. 3, 3', 4, and 4', and dropping the sheaves or bundles vertically until they rest upon the ground. The link M is thereby thrust through its clip, m, or other lost-motion connection, merely allowing the teeth to fall without turning upon their axes. When, however, the carrier is drawn forward from beneath the bundle the teeth B trail backward as they are withdrawn, folding toward the side of the machine, as seen in Fig. 4, and thereby taking up the lost-motion. When, therefore, the pedal is depressed by the operator, and the rock shaft or crank shaft J thereby turned, drawing upon both links H and M, the bar F and the rocking support C are simultaneously returned to their normal position and the teeth thereby simultaneously raised and rotated upon their pivots back to the position for receiving the sheaves or bundles.

In addition to the motions by which I successively dump and unfold my carrier and simultaneously rise and expand or unfold it, it will be seen that when it meets any obstacle the carrier as a whole is free to rise, the support C raising the ends of the clips or pieces c which turn freely upon their pivots unhindered by the operating connection. This permits the direct rise of the support C, as distinguished from a mere rocking of the support and consequent rise of the outer ends of the teeth, an action I believe heretofore employed. The operation of dumping and raising the teeth of my carrier by rocking the support C is quite independent of the pivotal connections between the clips c and the frame-work of the machine, and the

clips c do not participate in the action of dumping or raising. On the other hand, when the carrier encounters an obstacle over which it must rise, the operating connections (which as described are unyielding) would not permit the support C to rock and thereby raise the carrier, but my intermediate clips or pieces c allow the carrier as a whole to rise with an upward movement of the rocking support C. This free movement of the clips c and the carrier is entirely independent of the operating connections for dumping and raising the carrier, and, although the proportions of the operating connections may be such that a slight rocking or angular movement is incidentally produced by the turning of the clips c and the rise of the support, such action does not in any way hinder or interfere with the free motion of the clips. Preferably, there will be such slight rocking of the support C as will give the ends of the teeth a greater rise than the support C; but, in any case, the clips c are free to turn, and the support C free to rise, independently of the operating connections. In claims 5 and 6, I use the term "independently" in this sense.

The foregoing is a description of one embodiment of my invention. For of course it must not be understood that the precise pivotal connections shown are the only ones that can be used within my invention, nor that the lost-motion described is the only means of producing the successive operation of the carrier teeth in discharging and the simultaneous operation in returning.

Without, therefore, restricting myself to the details and construction of parts except as expressed or clearly implied in the claims, I claim as my own, desiring to secure to myself all such modifications as may be made by mere skill in the art without departing from the principles of my invention, the following:

1. In a bundle carrier or like device, a rocking support C, carrier fingers or teeth B pivoted thereto, connections for simultaneously dumping the carrier and releasing the teeth upon their pivots and unyielding connections for simultaneously and positively restoring the teeth and the carrier to position for receiving bundles, whereby the teeth may be allowed to fall directly toward the ground and thereafter to trail or fold toward the machine, and whereby all the parts may be simultaneously and positively restored to their normal position, substantially as and for the purposes set forth.

2. In a bundle carrier or like device, a rocking support C, carrier fingers or teeth B pivoted to the said support, a link M and connections or devices permitting or providing lost motion for the said fingers or teeth, and means for rocking the said support and actuating the said link, the said connections or devices permitting or providing lost motion

releasing the said fingers or teeth in dumping, and the said lost-motion being taken up by the folding of the teeth, thereby giving positive action in restoring them to normal position, substantially as and for the purposes set forth.

3. In a bundle carrier or like device, a rocking support C and carrier fingers or teeth B pivoted thereto, operating connections for rocking the said support and dumping or raising the carrier, and a device or connection for permitting or providing lost motion between the said operating connections and the said fingers, the proportions of the said lost-motion being such that in dumping the teeth are released and free to fold, taking up the lost-motion, and in returning the carrier to its normal position the actions of the teeth are simultaneous and positive, substantially as and for the purposes set forth.

4. In combination in a bundle carrier or like device, a rocking support C, carrier fingers or teeth B pivoted thereto, a reciprocating bar F for rotating the said teeth upon their pivots, an operating crank J, a positive and unyielding connection between the said crank and the said rocking support for dumping and raising the carrier, and a device or connection for permitting or providing lost motion between the said crank and the said bar F, the proportions of the said device or connection being such that on dumping the teeth are released and permitted freely to trail or fold, thereby taking up the lost-motion, and on the raising movement of the crank and carrier, the said device forms a positive regu-

lating connection, substantially as and for the purposes set forth.

5. In combination in a bundle carrier or like device a rocking support C, clips or pieces c to which the said support is pivoted, actuating connections for rocking the said support, and a pivotal connection between the said pieces c and the framework of the machine, upon which the said pieces are free to turn independently of the said actuating connections thereby permitting the rise of the said support, substantially as and for the purposes set forth.

6. In combination in a bundle carrier or like device, a rocking support C, carrier fingers or teeth B, intermediate pieces or clips c to which the said rocking support is pivoted, connections for rocking the said support upon the said pieces or clips for dumping and raising the carrier, and a pivotal connection between the said pieces or clips and the support of the machine, upon which the said pieces or clips are free to turn independently of the said connections, whereby the said rocking support and teeth may rise by the movement of the said pieces or clips in passing over obstructions, without disturbing the operating connections, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 5th day of June, 1893.

JOHN J. COURTNEY.

Witnesses:

G. J. PILKINTON,
R. F. BALL.