

(No Model.)

W. GAUSE.

PITMAN CONNECTION FOR MOWERS, &c.

No. 286,603.

Patented Oct. 16, 1883.

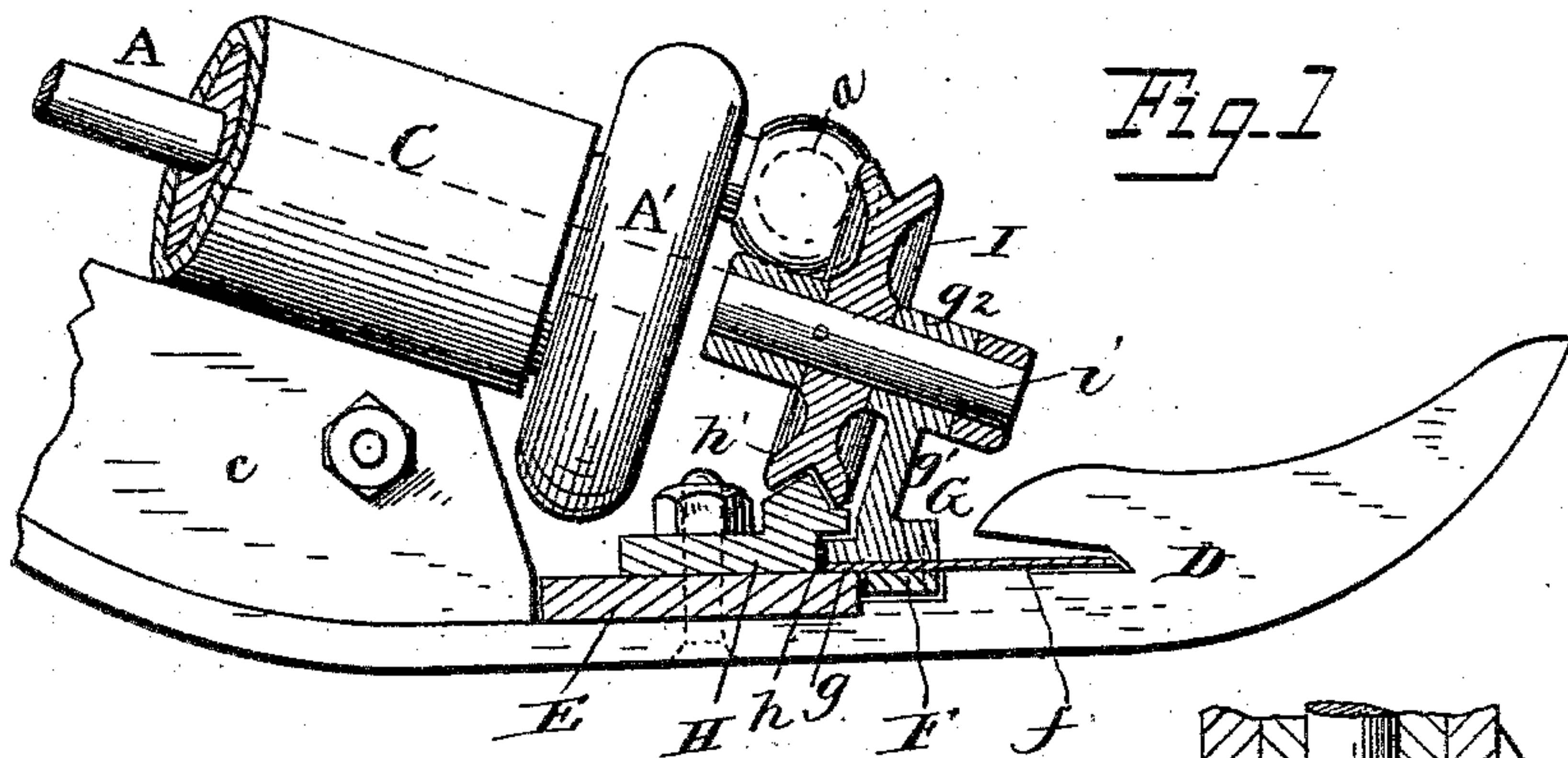


Fig. 2.

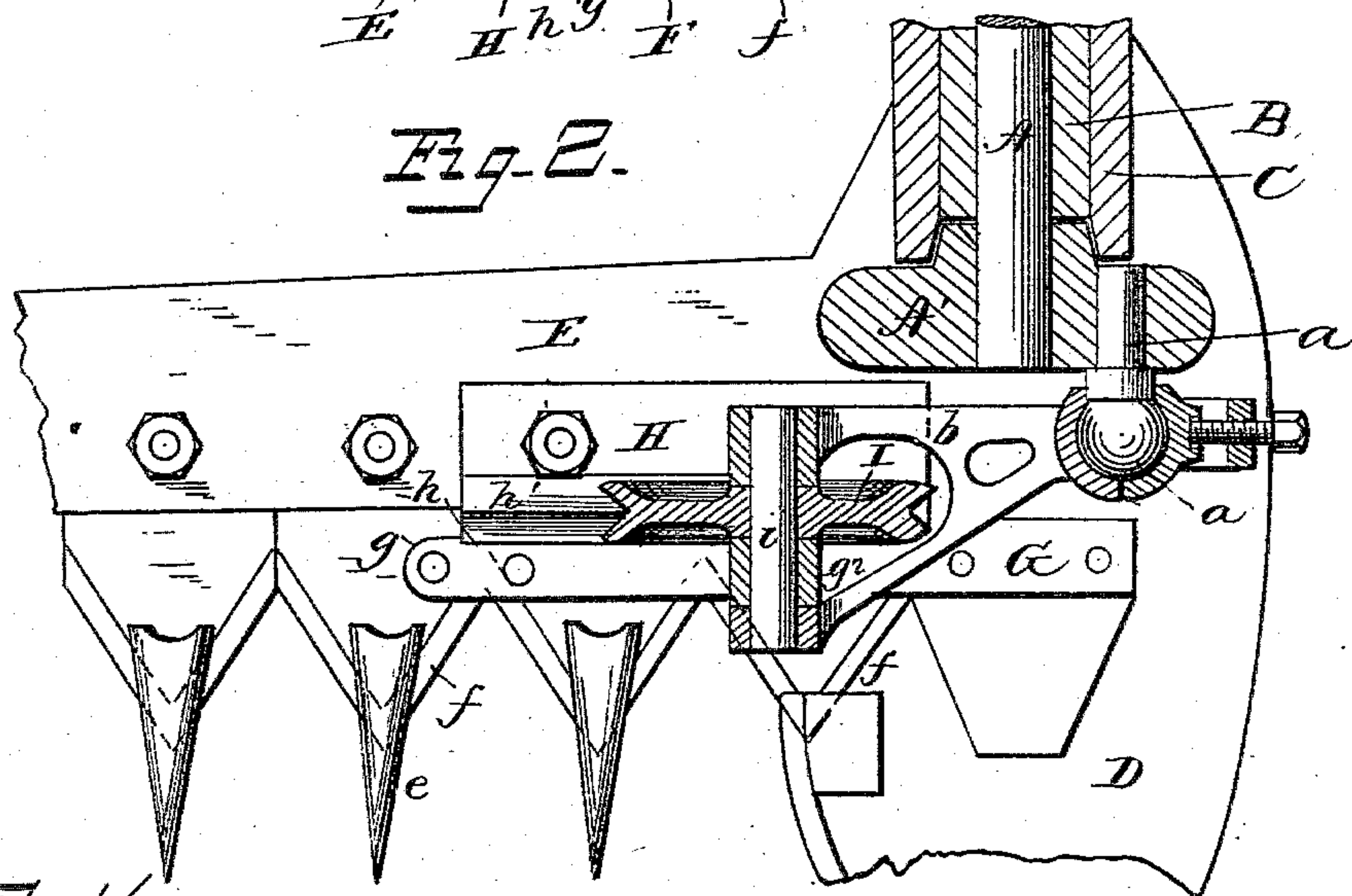


Fig. 4.

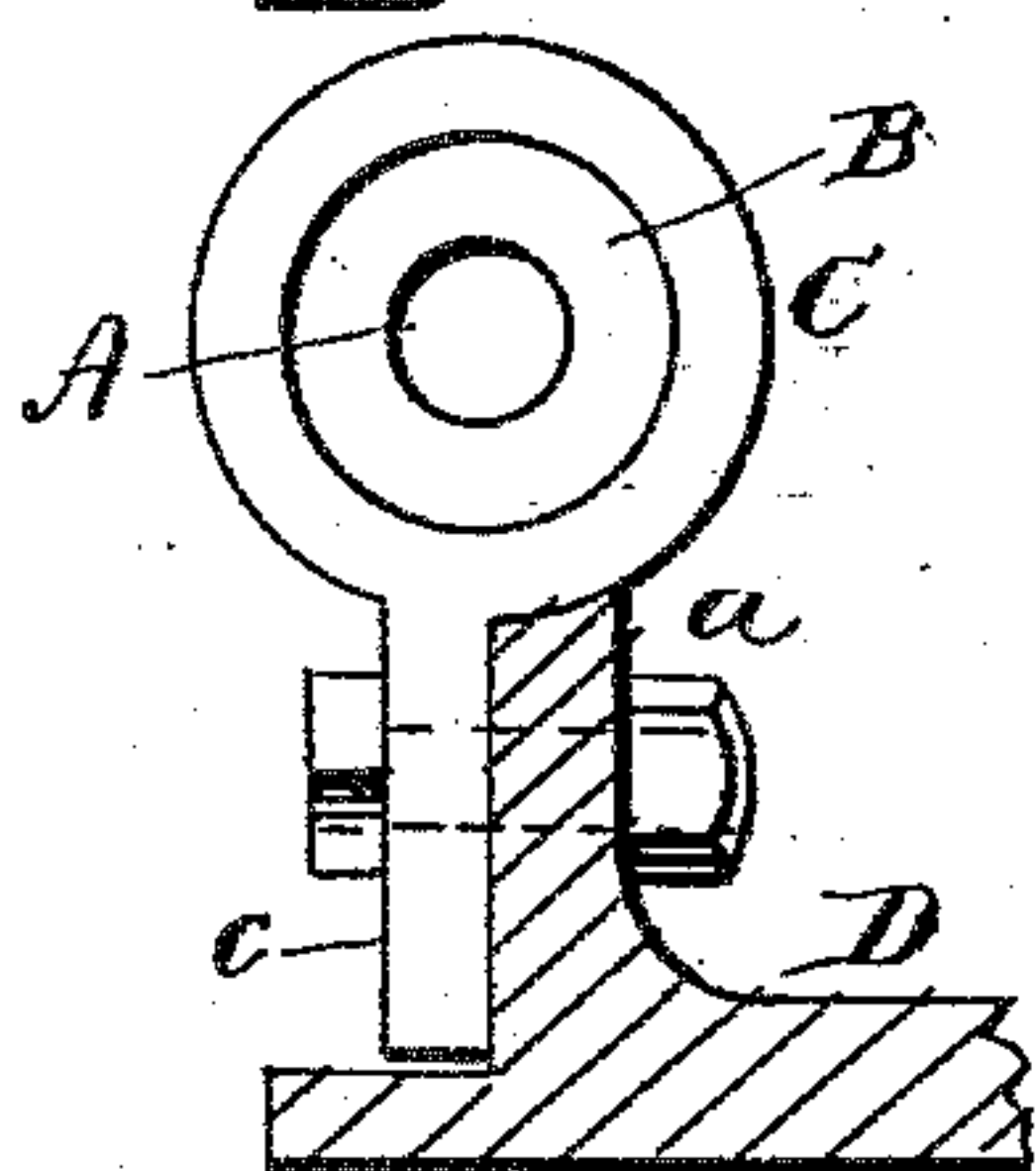
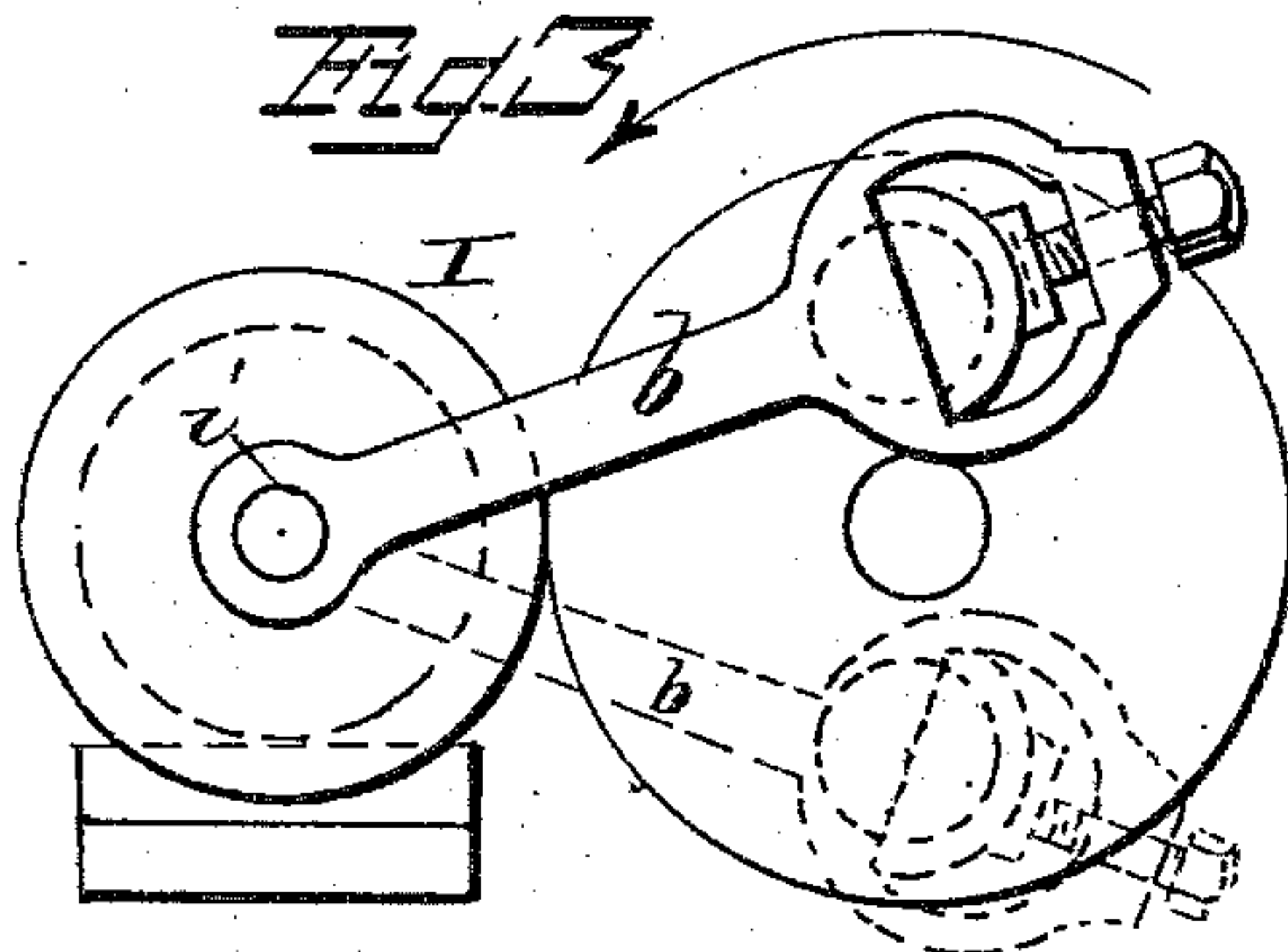


Fig. 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

WILLIAM GAUSE, OF FORT WAYNE, INDIANA.

## PITMAN-CONNECTION FOR MOWERS, &c.

SPECIFICATION forming part of Letters Patent No. 286,603, dated October 16, 1883.

Application filed September 3, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GAUSE, of Fort Wayne, county of Allen, and State of Indiana, have invented a new and useful

Improvement in Pitman - Connections for Mowers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to the construction of the pitman, and to the combination therewith and with the sickle-bar or other device actuated thereby of a friction-roller and roller-guideway under a peculiar arrangement hereinafter described, whereby I am enabled to employ a very short pitman, and thereby to bring the parts into compact shape, while at the same time avoiding the friction and lateral play or the cramping and binding of the parts incident to the use of a short pitman under the ordinary construction and arrangement of said parts, and is particularly designed in use for mowing and reaping machines for actuating the knife or sickle bar, but may be used elsewhere whenever economy of space is desirable.

In the accompanying drawings, for the purpose of illustration, I have shown my improved pitman applied to the knife of a mowing-machine.

Figure 1 represents a vertical section through the cutting apparatus, taken in line with the pivotal connection of the pitman with the knife-head. Fig. 2 is a plan view, showing the crank-shaft and shoe-sleeves and the joints between the pitman and the crank-shaft and knife-head in horizontal section. Fig. 3 is a front view of the pitman, its actuating-crank, and friction-wheels; and Fig. 4 represents a transverse section through a portion of the inner shoe, showing the crank-shaft sleeve and the parts connecting the shoe therewith in end elevation.

The portions of the frame and cutting apparatus shown in the drawings are similar to the corresponding parts described in Letters Patent for improvement in mowing-machines granted to me May 16, 1882, and need not, therefore, be herein described in detail.

A represents the crank-shaft, to which mo-

tion is communicated from the driving wheel or wheels in any usual or preferred manner; B, the sleeve in which said shaft has its bearing; C, the shoe-sleeve surrounding the end of the crank-shaft sleeve B, and adapted to turn freely thereon, and to this sleeve C the inner shoe, D, of the cutting apparatus is rigidly secured by means of lugs *c* and *d*, one pendent from sleeve C and the other upright on the shoe D and through bolts uniting said lugs, as shown.

E represents the bar to which the slotted guards or fingers *e* are secured, said bar being rigidly secured to the shoe D, and F is the reciprocating knife-bar to which the knife sections or cutters *f* are attached.

To the inner end of the knife-bar F is secured the knife-head G, provided with a heel projection, *g*, which, with the heel ends of the knife-sections *f*, project in rear of the bar F and overhang the forward edge of the finger-bar E, as shown in Fig. 1; and directly behind the head G is a guide-plate, H, secured to the inner end of the finger-bar, preferably by the same bolts which united the fingers and shoe thereto. This guide-plate is provided on its forward edge with a lip, *h*, which overhangs the heel projection *g* of the knife-head, serving to hold said knife-head in place and to guide and steady its movements, and upon the upper face of said lip *h*, or of the plate H in rear thereof, and which is of a length corresponding to the throw of the knife, or of the pitman hereinafter described, is formed a V-shaped rail or way, *h'*, which serves as a track for the friction-roller, also hereinafter described.

Upon the end of the shaft A is secured a crank and fly-wheel, A', provided on its outer face with a crank wrist or pin, *a*, to which one end of the pitman *b* is secured, preferably through a ball-and-socketed joint, as represented, as being best adapted to accommodate the lateral vibration of the end of the pitman connected with the pin *a* under the inclined arrangement of the crank-shaft shown. The spherical socket in the pitman end, for the ball *a'* on the crank-pin *a*, is formed one-half in the pitman-head *b'* proper and the other in a block, *b''*, adjustable in a slot in said head by



means of a screw or screws,  $b^3$ , for permitting the insertion and removal of the ball from the socket and adjustment of the latter to compensate for wear. The outer end of the pitman is bifurcated, and its arms stride the upright perforated lug  $g'$  on the knife-head G, and also a grooved friction-roller, I, arranged in rear of said lug  $g'$ , and secured to the same pin  $i$ , which connects the bifurcated end of the pitman with said lug  $g'$ . The lug or upright  $g'$  is set at an inclination corresponding to that of the shaft A and its crank-pin  $a$  in such manner as to bring the eye or sleeve  $g^2$ , in which the pin  $i$  has its bearing, into a plane parallel with said shaft, and the grooved roller I into a plane at right angles thereto. The roller I is keyed or otherwise secured to the pin  $i$ , causing the latter to roll in its bearings in the sleeve  $g^2$  and in the bifurcated end of the pitman, thereby preventing wear in the hub of said roller. The roller has a V-shaped groove formed in its periphery, matching the V-shaped guide-rail  $h'$  on the plate H, on which said roller moves, said formation serving to prevent lateral play and displacement of the roller and to guide and steady the movements of the inner end of the knife connected therewith.

Under the construction described and shown it will be seen that the pin or shaft  $i$  of the friction-roller I and the end or shaft A, with which said pin is connected through the pitman  $b$ , are brought into or about into the same horizontal plane and into close proximity one with the other, necessitating the employment of a very short pitman, which, under the ordinary arrangement of parts, would serve to vibrate the inner end of the knife-bar vertically, and so cause it to bind in its guideways and seriously impair its efficiency. By giving to the crank-shaft a direction of rotation from its upper side outward, as indicated by the arrow in Fig. 3, it will be seen that in the outward throw of the knife the crank-pin is above the plane of the pin  $i$  of roller I, and the pitman is thereby made to push downward on the roller I, causing the latter to take the vertical thrust of the pitman, and so prevent any binding of the inner end of the knife in its ways, while in

the inner movement of the pitman the crank-pin  $a$  will have passed below the plane of the pin  $i$ , and the pitman  $b$  will consequently pull downward on said pin, again throwing its vertical thrust or pull on the roller I, said roller being thus made to take all the vertical thrust of the pitman, and thereby rendering it practicable to employ a pitman of but little greater length than the throw of its actuating-crank, and enabling me to bring the parts connected by it into compact shape.

Having now described my invention, I claim as new—

1. The short bifurcated pitman, in combination with the friction-roller and the knife-head, or the equivalent thereof, connected with said pitman, substantially as and for the purpose described.

2. The combination, with the crank-shaft, of the pitman, the grooved friction-roller, connected with said pitman by a pin or pivot arranged about in the same horizontal plane with the end of the actuating crank-shaft with which it is connected by said pitman, and a fixed track or way for said roller, substantially as described.

3. The combination, with the crank-shaft, of the short bifurcated pitman, the grooved friction-roller, the fixed rail or track for said grooved roller, the knife-head, or the equivalent thereof, connected with said pitman and friction-roller, and provided with the heel-extension, serving, in connection with a lip or the guide-rail plate, to guide and steady the movement of the knife-head, all substantially as described.

4. The short bifurcated pitman provided with the hemispherical half-socket, in combination with the adjustable half-socket connected therewith, and the screw or screws for adjusting the same, substantially as described.

In testimony whereof I have hereunto set my hand this 22d day of August, A. D. 1883.

WM. GAUSE.

Witnesses:

T. N. McBRIDE,  
A. B. TRENTMAN.