

No. 676,911.

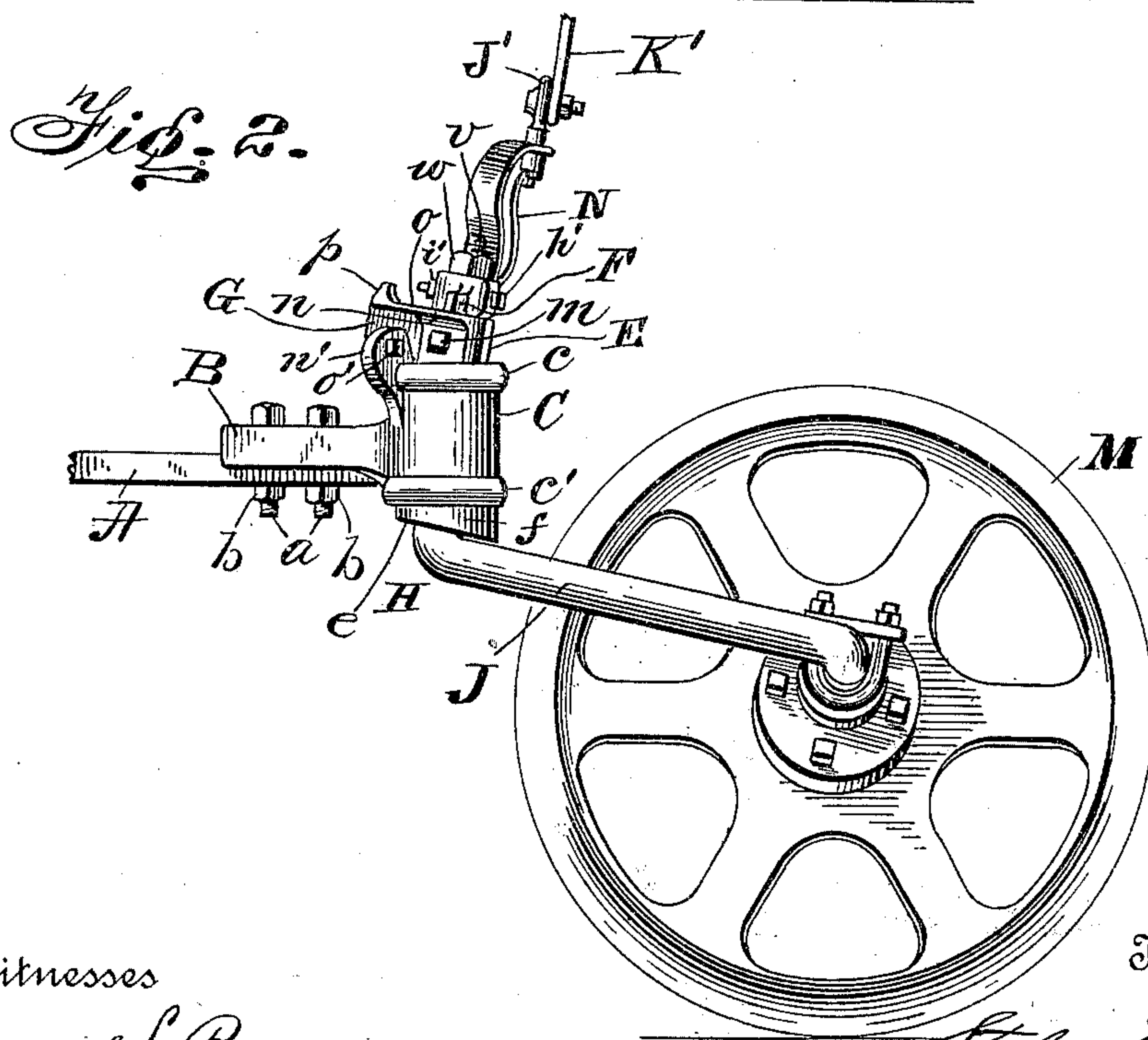
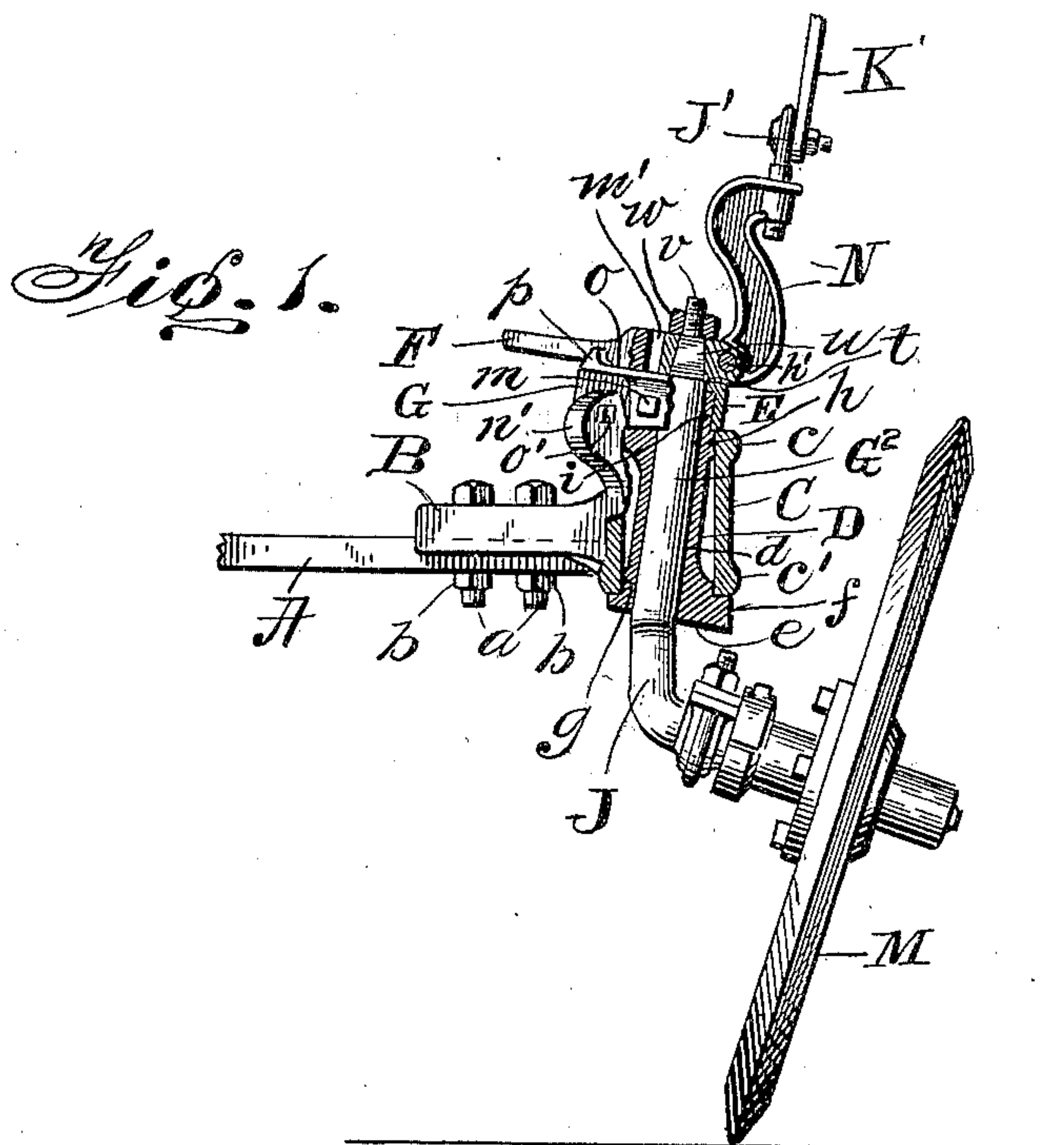
Patented June 25 1901.

S. D. POOLE.  
CASTER WHEEL FOR PLOWS.

(Application filed Mar. 18, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. 3.

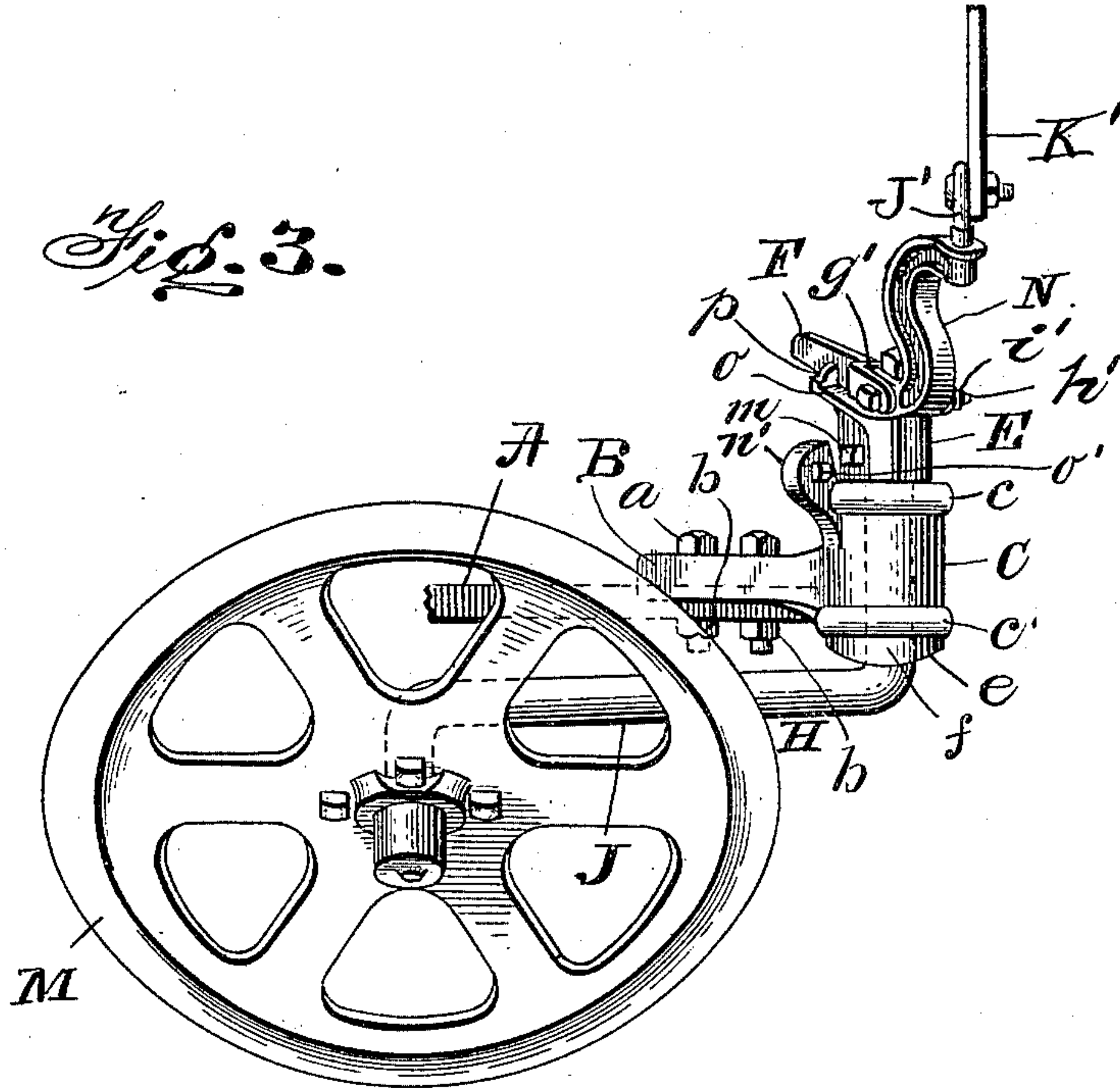


Fig. 4.

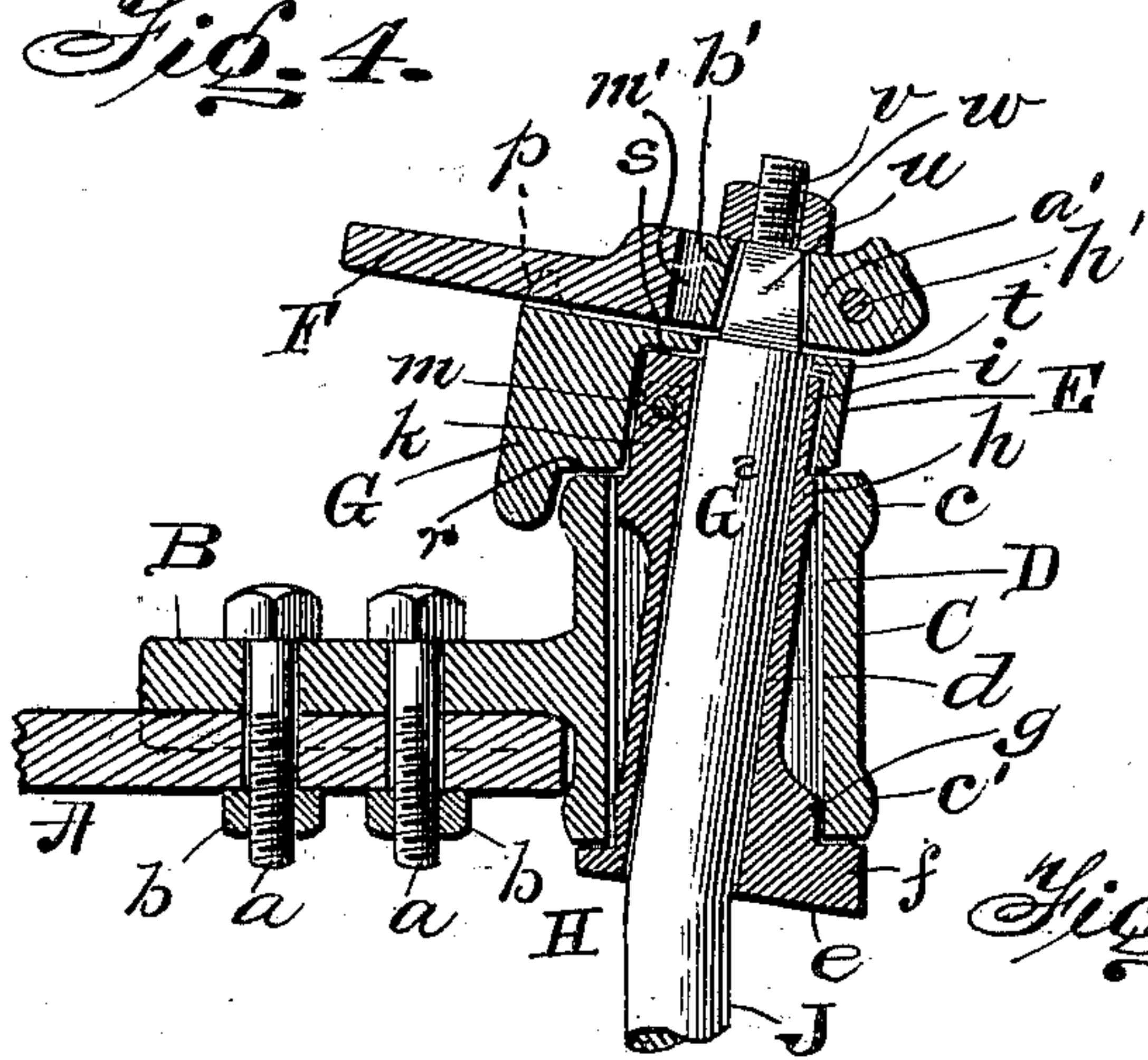
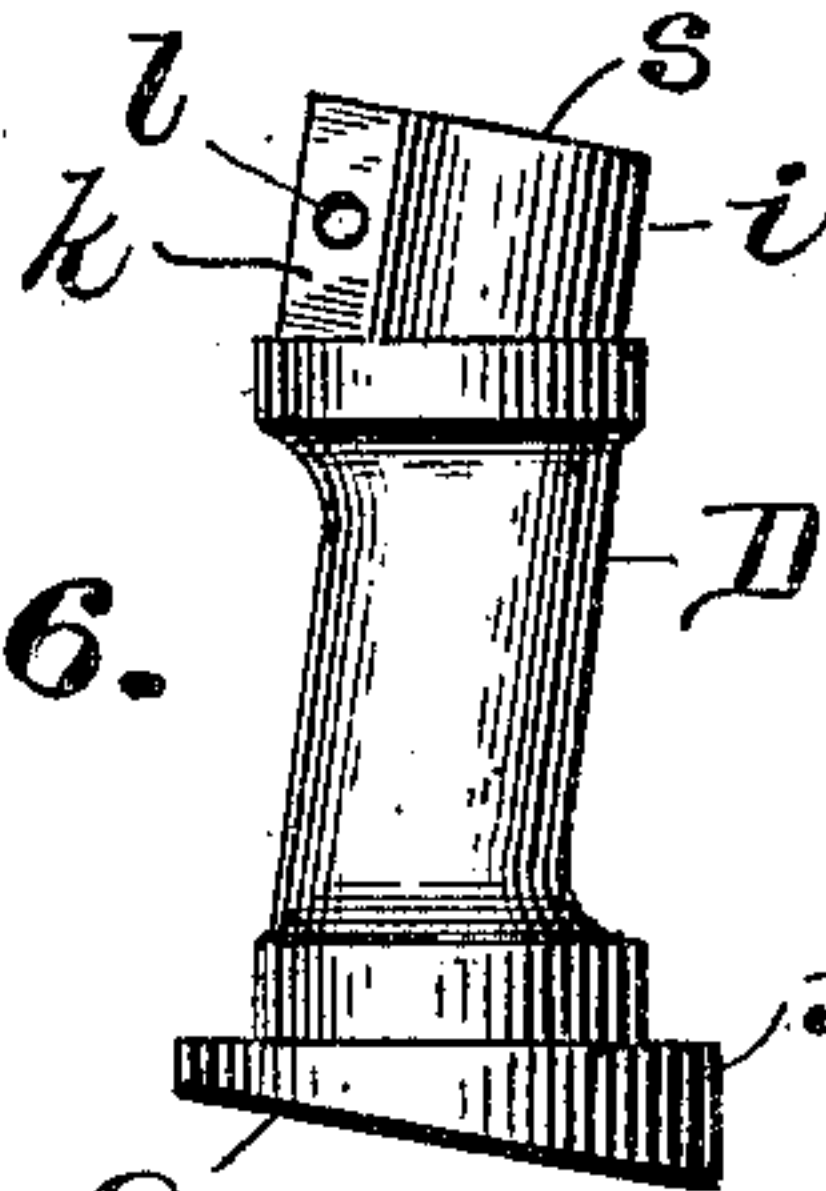
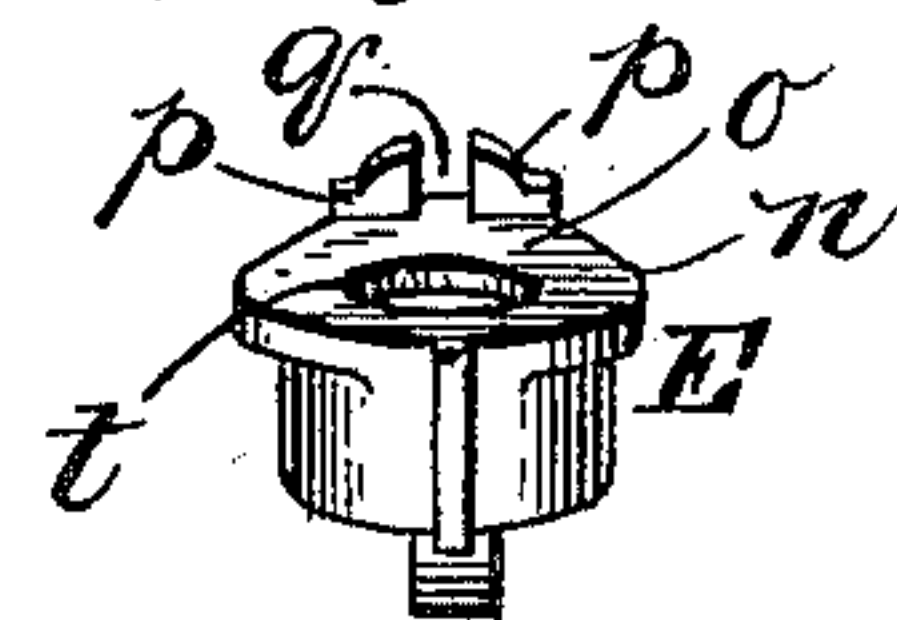


Fig. 5.



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# UNITED STATES PATENT OFFICE.

STALEY D. POOLE, OF MOLINE, ILLINOIS, ASSIGNOR TO DEERE & COMPANY,  
OF SAME PLACE.

## CASTER-WHEEL FOR PLOWS.

SPECIFICATION forming part of Letters Patent No. 676,911, dated June 25, 1901.

Application filed March 18, 1901. Serial No. 51,688. (No model.)

*To all whom it may concern:*

Be it known that I, STALEY D. POOLE, a citizen of the United States, residing at Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Caster-Wheels for Plows; 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.

This invention relates to caster-wheels for three-wheeled riding-plows; and it consists, substantially, in such features of improvement as will hereinafter be more particularly described.

The invention has reference more particularly to "rear" caster-wheels, such as are employed at the rear end of wheeled plows; and the object of the invention is to provide a simple and reliable device which will so operate that when the plow is turned "gee" or "haw" the caster-wheel will automatically hold the plow-bottom in proper relation to its work. For example, when a right-hand-wheeled plow is plowing around a "land" and a corner is reached the plow is turned "haw." In such a turn the plow-bottom should remain in the ground, cutting its full depth, and by means of my device this result is accomplished automatically. On the other hand, a "gee" turn automatically raises the plow-bottom out of the furrow, so that when it is desired to leave the work the team is turned "gee" and the plow-bottom is raised out of the furrow without operating any mechanism, except the lifting of a latch-bar.

The above and additional objects I attain by means substantially such as are illustrated in the accompanying drawings, which show my device as applied to right-hand-wheeled plows, it being understood that for left-hand plows the arrangement of parts and the operation thereof are reversed.

In the drawings, Figure 1 is a rear view of my improved caster-wheel, together with the supporting and operating devices therefor, attached to a plow-frame, the said view being in part section. Fig. 2 is an elevation showing the caster-wheel turned to the right, the plow-frame being in the same position as in

Fig. 1 and the said caster-wheel and its supporting and operating devices having the same relation to said plow-frame as when the plow is turned "gee." Fig. 3 is a similar view to Fig. 2, but showing the caster-wheel turned to the left, the wheel and its supporting and operating devices bearing the same relation to the plow-frame as when the plow is turned "haw." Fig. 4 is an enlarged sectional detail in part elevation, more clearly indicating the construction and arrangement of certain parts. Fig. 5 is a top perspective view of a part of the locking and stop mechanisms; and Fig. 6 is an enlarged view of the inner semi-rotatable sleeve, which has its bearings in the supporting-socket attached or secured to the plow-frame.

Preliminarily to a more detailed description it may be stated that the caster-wheel is carried at the end of a bent arm, of which one member is supported by and has an independent semirotation in an inclined bearing within a vertical semirotatable sleeve held in a socket on the plow-frame, the said sleeve and the said member being locked together when desired to turn the caster-wheel in one direction and back again to mid-position; but to turn the said wheel in the opposite direction and back again it is necessary to disengage said sleeve and member, so as to permit the latter to work independently in the said sleeve. The said arm member partially rotates on the inclined axis, while the sleeve partially rotates on the vertical axis, and it is in virtue of this arrangement that the devices operate, as will hereinafter be more fully understood. When the sleeve and said arm member are locked together and the plow is turned to the left on a "haw" turn, the sleeve revolving in its vertical socket turns with the arm member and the plow-frame remains at the same level in all positions of the turn. When the arm member is unlocked from the sleeve and the plow is turned to the right on a "gee" turn, the arm member revolving on the inclined journal within the socket raises the rear end of the plow-frame and tends to throw the plow-frame out of the ground. This operation permits the plow in turning "haw," as is done when plowing continuously around a land, to keep its position locked down to



its work without the manipulation of any levers. On the other hand, when it is desired to run the plow out of the ground a latch-bar is lifted, and a "gee" turn causes the caster-wheel automatically to raise the frame, and likewise the plow-bottom, out of the ground, thus relieving the operator from the exertion of lifting the plow-bottom with levers or other mechanism. The parts are simple, besides being easily operated and thoroughly reliable in use.

Reference being had to the accompanying drawings, A represents a part of the plow-frame, to which is attached, by bolts *a a* and nuts *b b*, a bracket B, formed at its outer end with a vertical socket or bearing C, having flanges *c c'* at its upper and lower ends, respectively. Located within the said socket is a vertical sleeve D, having an inclined bore *d* passing through it from top to bottom, and this sleeve is beveled or sloping on its under or lower surface at *e*. Said sleeve is formed at or near the lower end with a flange *f*, with which the lower end of socket C engages, and it is also formed with rings *g* and *h*, which furnish bearings for the sleeve upon the inner surface of the said socket. The said sleeve extends above the socket, as shown at *i*, Fig. 6, and formed at one side of said extended portion is a vertical rib *k*, having an opening *l* for the passage of a bolt *m*, which secures a cap E in place upon the said upper extended portion. The said cap is spread outwardly at the top, as seen at *n*, Fig. 5, and it is also formed at the top with a projecting horizontal surface or ledge *o*, upon which are arranged or formed the lugs *p p*, said lugs being separated from each other, so as to leave a notch *q*, in which the latch-bar F is received, as hereinafter set forth. The cap E is also formed or provided with a vertical rib G, located beneath the projecting ledge, and which rib is notched at *r*, so as to move upon the upper edge of the socket C as well as to partially overhang the upper flange *c* of said socket. The upper surface *s* of the sleeve D is inclined or beveled in the same direction as the lower face or surface thereof, and therefore the cap E, with its appurtenances, is also made to assume an inclined position. The lower edge of the cap rests upon the upper edge of socket C, as shown in Figs. 1 and 4, and it is also obvious that when the sleeve is turned the cap turns with it, the two being bolted thereto, as already explained. In virtue of this support of the cap, taken in connection with the fact of the flange *f* of the sleeve coming beneath the lower flange *c'* of the socket C, it will be seen that the said sleeve is prevented from any vertical or up-and-down movement in said socket.

Passing upwardly through the sleeve or bearing D and out through an opening *t* in the top of cap E is the member  $G^2$  of a bent arm H, which member is inclined from a vertical line corresponding to the opening or bore of said sleeve. The other member J of said

arm is bent to an approximately horizontal position, and the end or extremity of the same is bent outwardly to form an axle for the caster-wheel M. The upper end of the said inclined member  $G^2$  of the bent arm H is squared at *u* and is also reduced in diameter and screw-threaded at *v* to receive a fastening-nut *w*. (See Figs. 1 and 4.) Fitting upon the said squared portion *u* of the said member is a curved bracket N, which is provided with a horizontal portion *a'*, Fig. 4, also having a squared opening *b'* to fit this portion of the arm member, and said bracket carries a stem J' and a link K', connecting either with the front caster-wheel, the pole of the plow, or the front portion of the plow-frame, as may be desired, neither of these several mentioned parts being shown.

The device for locking the arm member  $G^2$  and the sleeve D together consists of the latch-bar F for engaging in the notch *q* on the upper surface of the cap E, the said latch-bar being bifurcated at *g'* to embrace the sides of the bracket N (see Fig. 3) and also being pivotally attached to said bracket by means of a bolt *h'*, passing through the said latch-bar and bracket and secured by a nut *i'*, as shown. A clearance-space *m'*, Fig. 4, is left between the said latch-bar and bracket, so as to allow the former to be raised and lowered on its pivot at will.

On reference to Figs. 1, 2, and 3 it will be seen that the socket or bearing C is provided with a wing *n'*, through which passes a set-screw *o'* for adjusting and limiting the movement of the caster-wheel and the rotatable devices whenever they are turned or brought around from the position shown in Fig. 3 to that shown in Fig. 1. When the parts are thus turned, the rib G on the cap E comes into contact with the end of set-screw *o'*, which obviously acts as a stop therefor. If desired, a similar arrangement (not shown) is or may be employed to limit the movement of the wheel and said devices when moved or turned from the position of Fig. 1 to that of Fig. 3.

In Fig. 1 the caster-wheel is in mid-position, between the positions of "gee" and "haw," and the wing G abuts against the regulating-stop *o'*. In this position the latch-bar is down in the notch *q*, and the bent arm H and sleeve D and its appurtenances are locked together practically as an integral structure. Now when it is desired to turn the plow (not shown) "haw" the sleeve D, being locked to the arm  $G^2$  by latch-bar F and cap E and being free to turn in the one direction, rotates in the socket C, and the caster-wheel and other parts automatically take or assume the position shown in Fig. 3, the plow-frame still keeping or maintaining the same level. After such turn and as the plow continues in its direct course the caster-wheel automatically trails again into the position shown in Fig. 1. Normally and as shown in Fig. 1 all of the caster-wheel parts in a right-hand plow are locked as against a "gee" turn into an integral struc-



ture. By raising the latch-bar F, however, from its locking engagement with lugs *p p* a "gee" turn of the team rotates the arm member G<sup>2</sup> in the inclined bore of the sleeve D, (said sleeve, as stated, being locked to the socket C against a "gee" turn,) and the horizontal part J of the arm member bears in its turn against the bottom beveled surface of said sleeve, thus raising the socket, the plow-frame, and the entire plow-bottom out of the ground.

From the foregoing it will be seen that the wheel operates upon different axes as the plow is turned in opposite directions, the turn of the wheel in one direction being effected on an inclined axis or center of movement and the turn in the opposite direction taking place on a vertical axis passing through an inclosing socket in the manner shown and described.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A caster-wheel for plows, comprising the wheel, a bent arm supporting the same and being semirotatable on an inclined axis, so that a "gee" turn raises the frame of the plow.

2. A caster-wheel for plows, comprising the wheel, a bent arm supporting the same and being semirotatable on an inclined axis, means for supporting said arm from the plow-frame; and means whereby said arm is normally locked against a "gee" turn of the plow.

3. A caster-wheel for plows, comprising the wheel, a bent arm supporting the same and being semirotatable on an inclined axis, a sleeve carrying said axis and being itself semirotatable vertically in a fixed socket supported on the plow-frame, and a stop for locking said sleeve against a "gee" turn so that on a "haw" turn the caster-wheel revolves about a vertical axis and on a "gee" turn said wheel revolves about an inclined axis.

4. A caster-wheel for plows, comprising a socket supported from the plow-frame, an inclined sleeve therein engaging the socket vertically, and beveled at its lower end, the wheel, the bent arm semirotatable in said

sleeve on an inclined axis, its horizontal member on a "gee" turn bearing on the beveled part of the socket from first to last position in such rotation.

5. A caster-wheel for plows, comprising a wheel, a bent arm supporting the same and being semirotatable on an inclined axis, an inclined sleeve or bearing inclosing said axis and being semirotatable on a vertical axis, means for locking the arm and sleeve, so that they rotate together to and from positions of "gee" turn.

6. A caster-wheel for plows, comprising a wheel, a bent arm supporting the same and being semirotatable on an inclined axis, an inclined sleeve or bearing surrounding said axis and being semirotatable on a vertical axis, means for locking the arm and sleeve so that they rotate together to and from positions of "gee" turn, and means for limiting such movements.

7. A caster-wheel for plows, comprising a socket supported from the plow-frame and having the wing provided with the adjustable stop, an inclined semirotatable sleeve or bearing turning in said socket and flanged at its upper and lower ends and beveled on its under surface, a semirotatable bent arm having an inclined member working in said sleeve, and having another member supporting the wheel, the cap having the side wing and lugs *p, p*, and slotted to the upper end of said sleeve, and the pivoted latch for engaging between said lugs; substantially as described.

8. A caster-wheel for plows, comprising a wheel, a bent arm supporting the same, a sleeve inclosing one member of said arm, said arm and sleeve each having an independent semirotatable movement, and means for engaging and disengaging the said arm with said sleeve; substantially as described.

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

STALEY D. POOLE.

Witnesses:

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CHAS. T. MOREY.