

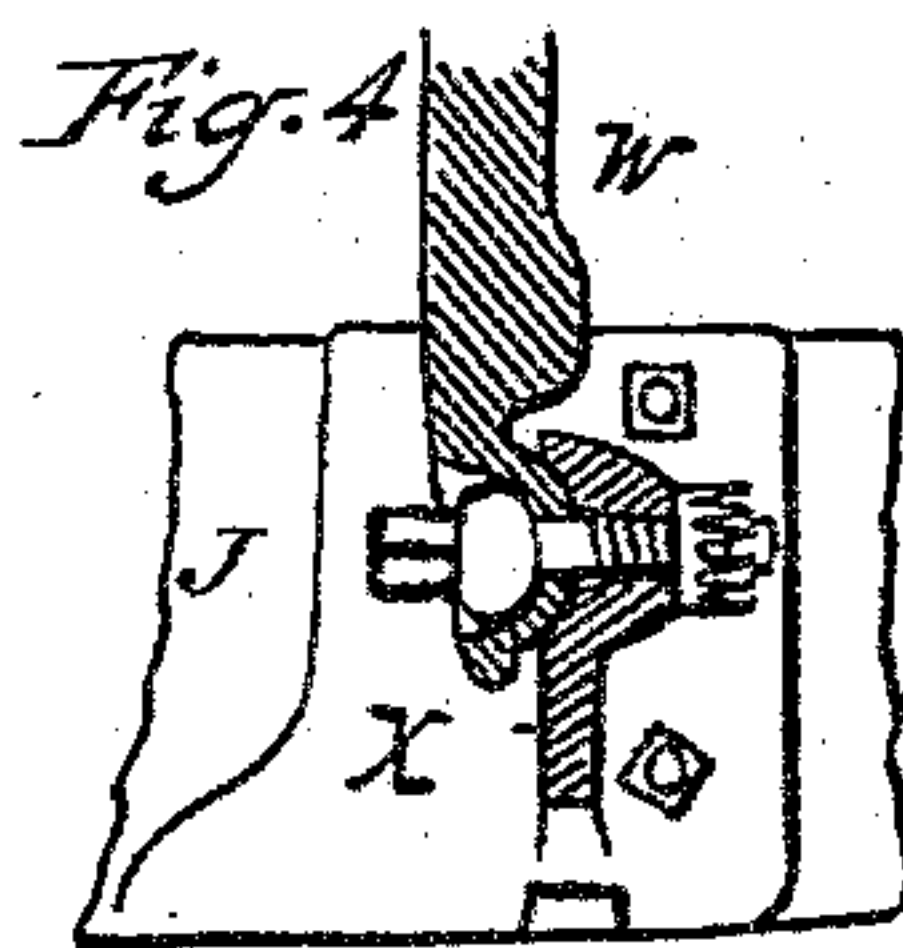
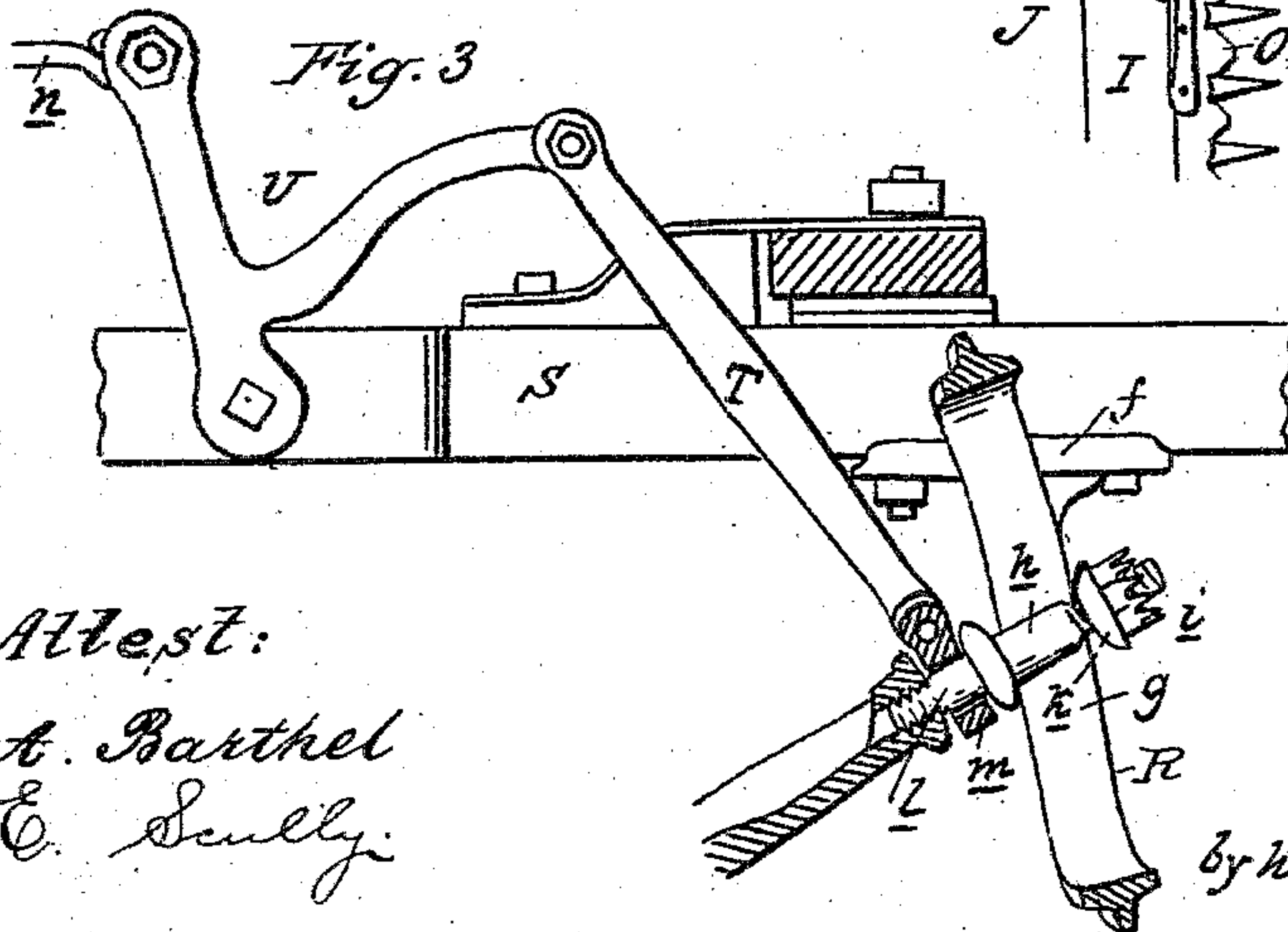
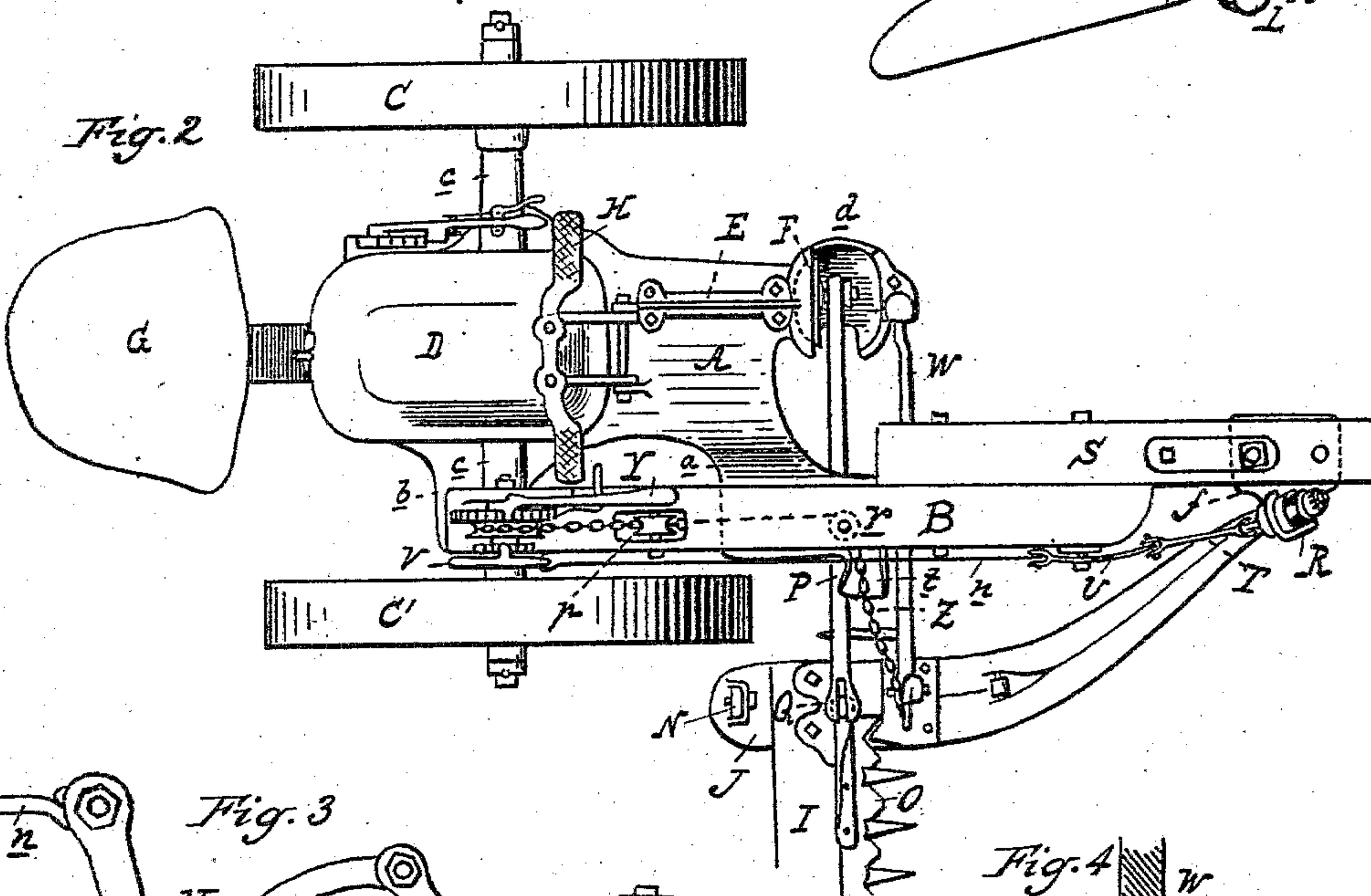
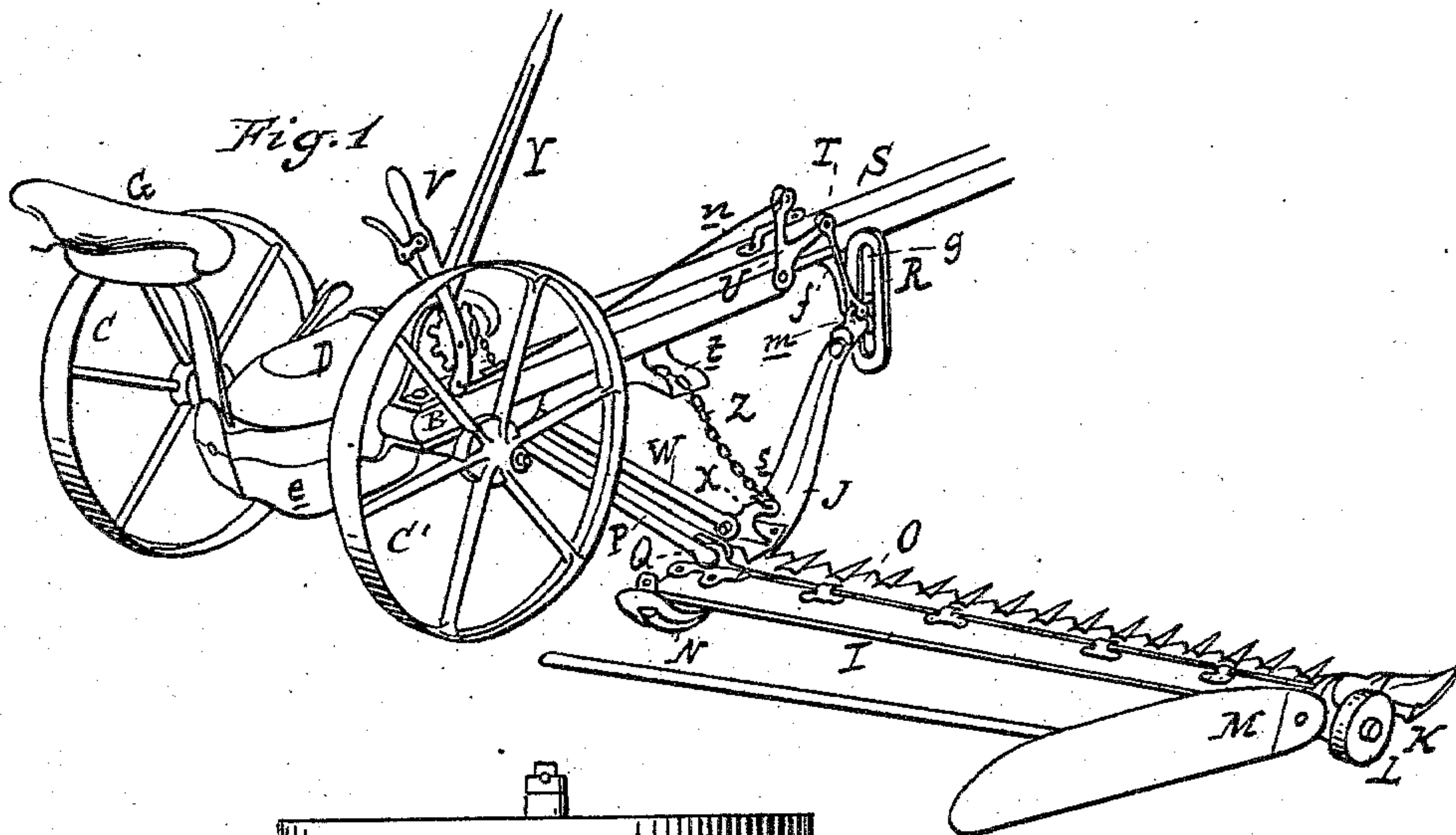
(No Model.)

H. A. HOWE

MOWER.

No. 296,412.

Patented Apr. 8, 1884.



Attest:

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UNITED STATES PATENT OFFICE.

HENRY A. HOWE, OF ALBION, NEW YORK.

MOWER.

SPECIFICATION forming part of Letters Patent No. 296,412, dated April 8, 1884.

Application filed June 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY ARCHIBALD HOWE, of Albion, in the county of Orleans and State of New York, have invented new and useful Improvements in Mowers; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in mowers; and the improvement consists of such constructive changes and alterations whereby the mower for which a patent was granted to me March 16, 1880, and numbered 225,607, is transformed into a so-called "front-cut" mower, all as hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a perspective view of my improved mower. Fig. 2 is a plan thereof. Fig. 3 is a detail, showing the connection of the shoe with the pole by means of a slotted arm or bracket. Fig. 4 is a section, showing connection of coupling-arm and shoe.

A is the main frame. It is provided with the flanges *a* and *b*, to which the rear extension, B, of the pole is bolted, the axle-boxes *c c*, by means of which the frame is supported upon the drive-wheels C C', and the front extension, *d*, which forms a shield for the crank-wheel and pitman connection, and also forms a support for the inner end of the coupling-arm W. The gearing is inclosed in an iron case, *e*, formed by a depression of the main frame itself, is covered by a hinged cover, D, and has a shipping-lever for throwing in and out of gear.

E is the pipe-box which incloses the crank-shaft, and F is the crank-wheel. All these parts are constructed and arranged the same as in my aforesaid Letters Patent, except that the whole arrangement is turned end for end, so as to bring the crank toward the front of the machine.

G is the driver's seat, secured to the rear end of the frame A, and H is a foot-rest bolted on top of the cover D.

I is a finger-bar of usual construction. It is secured with its inner end upon the combined draw-bar and shoe J, and with its outer end to the divider K, which is supported by

an adjustable wheel, L, and has a track-clearer, M, bolted to its rear end.

The combined draw-bar and shoe J has adjustably secured to its under side a sub-shoe, N, which, in connection with the adjustability of the wheel L, provides means to adjust the height of cut.

The cutting apparatus is of the usual description, and the cutter-bar O connects with the pitman P by means of a ball-and-socket joint, Q. The combined draw-bar and shoe J is curved up at the rear, and its front end extends forward and is curved upward and inward until it reaches with its forward end near the line of draft, where it is held adjustably within a vertical slot in the bracket R. The bracket R is bolted to the pole S by means of its flange *f*, and it forms on the side of the pole a vertical guide for the forward end of the draw-bar, which is held therein in the following manner, as shown in Fig. 3. *g* is the slot in the bracket R. *h* is the forward end of the draw-bar. It is turned round and made of proper size to pass freely through the slot *g*. Its outer end is threaded and engages with a screw-nut, *i*, which is provided with a spherical washer, *k*.

The device for locking the forward end of the combined shoe and draw-bar in position is constructed as follows: A neck, *l*, is formed near its end, and this is provided with an eared collar, *m*, to which one end of the link T is pivoted. The other end connects with the bent lever U, which is pivoted to the side of the pole.

n is a rod connecting one end of the bent lever U with the hand-lever V, which is pivoted within easy reach of the driver from his seat. The hand-lever V is provided with the usual devices for locking it in any desired position. Thus the driver can from his seat, by actuating the lever V, raise or lower at will the forward end of the draw-bar—in other words, tilt the finger-bar of the machine without stopping his horses or getting off his seat. As the tilting operation has for its center of motion the point where the shoe J touches the ground, it is necessary that the bracket R should have a curved slot—that is to say, one that will admit of the radial movement of the

combined shoe and draw-bar without binding its forward end, which is held and guided by the bracket R.

W is the coupling-arm. It forms a connection between the finger-bar and the frame of the machine, securing the finger-bar against any lateral motion. Its inner end is connected by means of a spherical joint (shown in detail in Fig. 4) to one side of the upright X, which is bolted to the top of the shoe.

Y is the lifting-lever. It is placed within easy reach of the driver from his seat, and is constructed and operated in the same manner as in my aforesaid Letters Patent, or in any other suitable way.

Z is the lifting-chain. It passes from the tilting lever under the pulley *p*, then around the pulley *r*, and over the guide *t* to the top of the upright X, to which its end is connected by a clevis. If the operator winds up the lifting-chain by actuating the lifting-lever in the proper manner, it will first lift the finger-bar horizontally, and then fold the same in a vertical position at the side of the machine and lock it in position.

From the foregoing description it will be seen that the shoe and draw-bar are combined in one piece, making a perfect floating draw-bar, which enables the shoe to pass over any obstruction and easily follow all inequalities of the ground; and, owing to its rolling connection with the slotted bracket and tilting device, it can never bind nor cramp at these connections, thus making the operation of the tilting device at all times easy and perfect. None of the draft transmitted to the draw-bar can affect the tilting device, owing to the curvature of the bracket R, which is a segment of a circle with its center in the axis of the finger-bar.

The coupling-arm is in front of the pitman, and has the same general inclination. It thus does duty as a guard for the same. Moreover it is also in line with the finger-bar, thus acting as a perfect brace to the same, keeping it always in line with the pitman, no matter how the finger-bar is adjusted. The coupling-arm and the draw-bar are the only connections I

have between the finger-bar or shoe N, to the exclusion of all braces back to the main frame or axle. I thus avoid all tendency to lift the truck from the ground when cutting in heavy grass, which tendency reduces or destroys the cutting power of the machine. The coupling-arm is attached to the upright upon the shoe by means of a spherical joint, which has the advantage of being well protected against clogging, and also gives the coupling-arm more freedom to adjust itself readily without binding or cramping when the finger-bar is folded up.

The slotted guide-bracket for holding the end of the draw-bar extension of the shoe is a simple device for transmitting the draft to the finger-bar, and allows of all the various adjustments thereto. It forms no obstruction to the horses, as it is bolted close onto the pole and does not project above the same, thereby being entirely out of the way of the double-tree, which latter may be attached by one of the bolts which secure said bracket to the pole.

The operation of the tilting device requires but little exertion from the driver, as there is nothing but the friction to overcome. Its connection with the draw-bar extension of the shoe is by means of a rolling joint, which prevents any binding. This admits of the use of a comparatively small tilting-lever for the driver.

The operation of the lifting-lever is greatly facilitated by the overhanging chain-guide *t*, which guides the lifting-chain to a point nearly above the shoe, thus producing a nearly vertical lift, and to assist the folding of the finger-bar the upright X is curved, so as to afford leverage for that purpose.

What I claim as my invention, is—

In a mower, the connection between the forward end of the combined draw-bar and shoe with the slotted guide-bracket by a rolling joint, consisting of a rounded neck passing through the slot in the guide-bracket, and held therein by a screw-nut with a spherical washer, substantially in the manner described.

HENRY A. HOWE.

Witnesses:

CLARK D. KNAPP,
H. S. GOFF.