

(No Model.)

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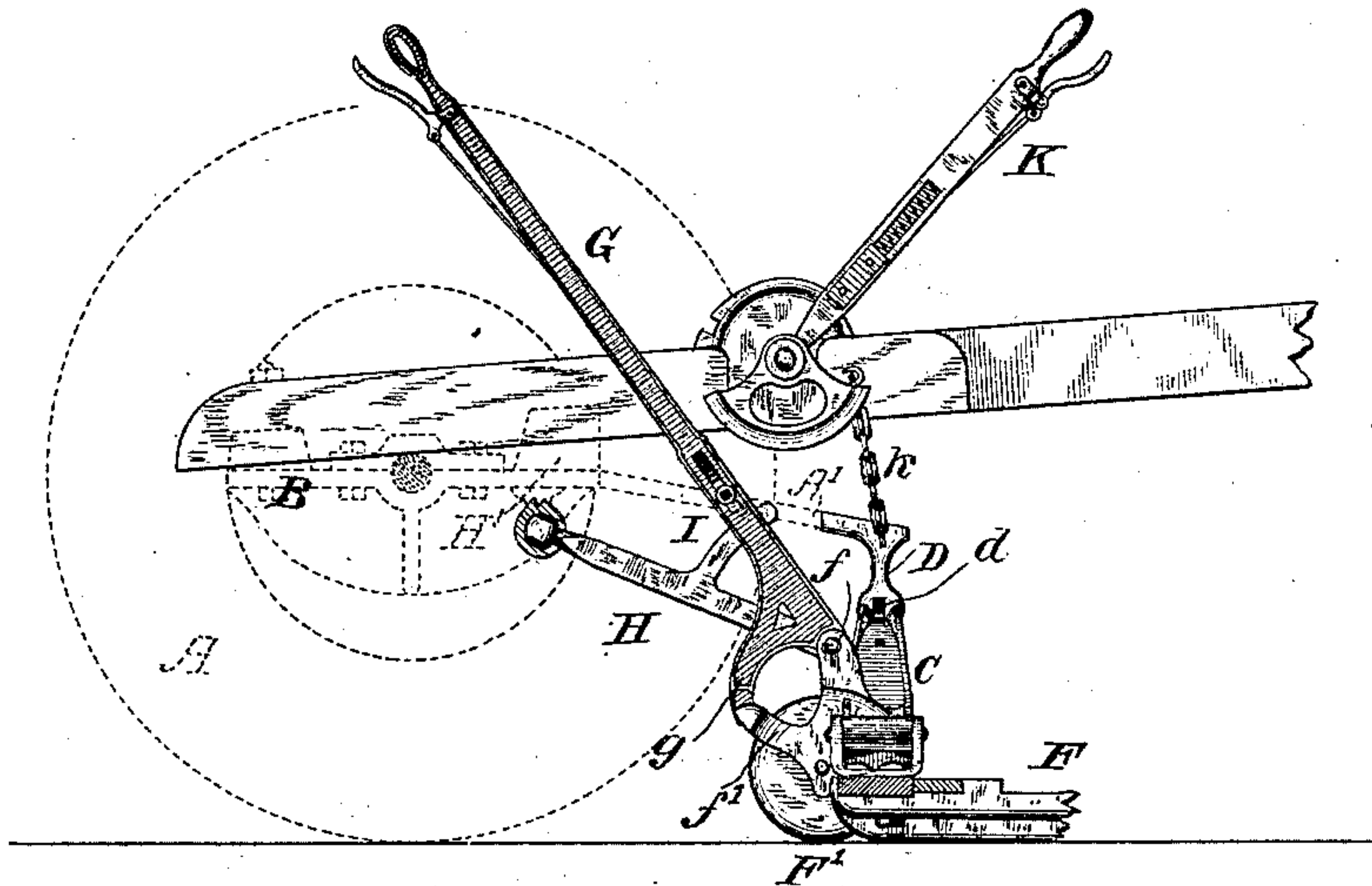
R. W. BENEDICT.

## HARVESTER.

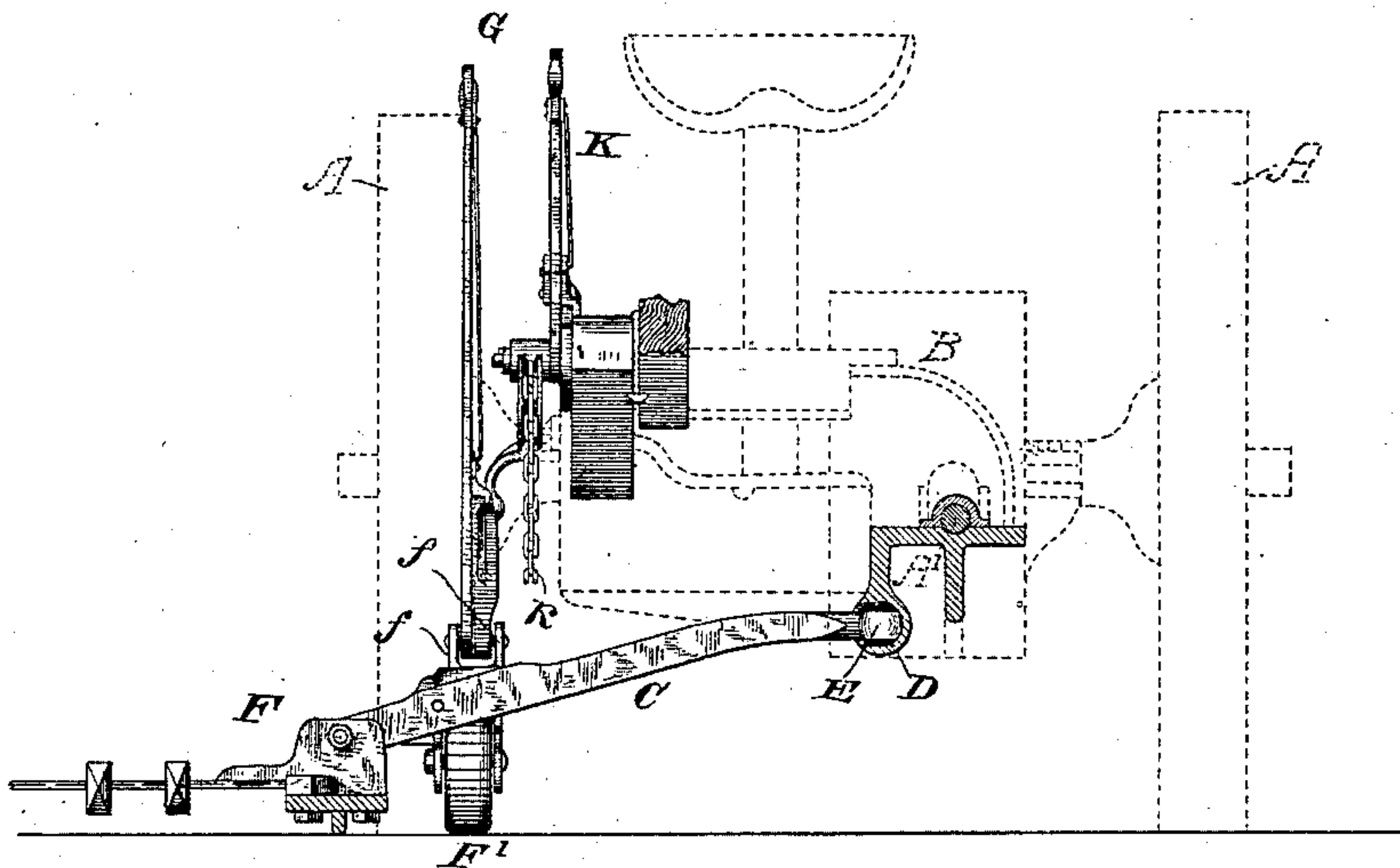
No. 282,040.

Patented July 31, 1883.

*Fig. 1.*



*Fig. 2.*



WITNESSES

Wm A. Skinkle  
Geo. W. Young

INVENTOR

By his Attorneys *Richard W. Benedict.*  
*Gouldwin, Hopkins & Payson.*

(No Model.)

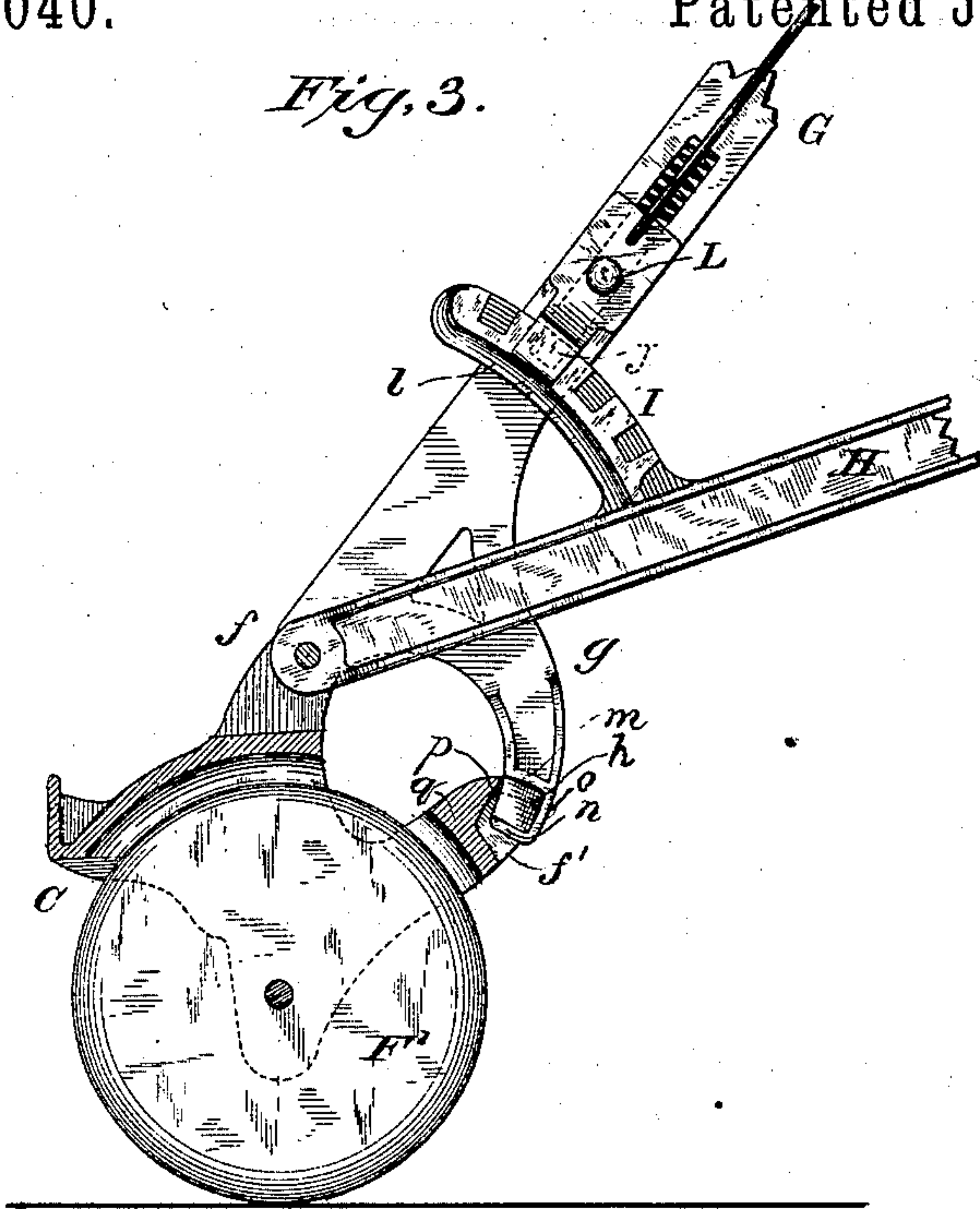
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R. W. BENEDICT.  
HARVESTER.

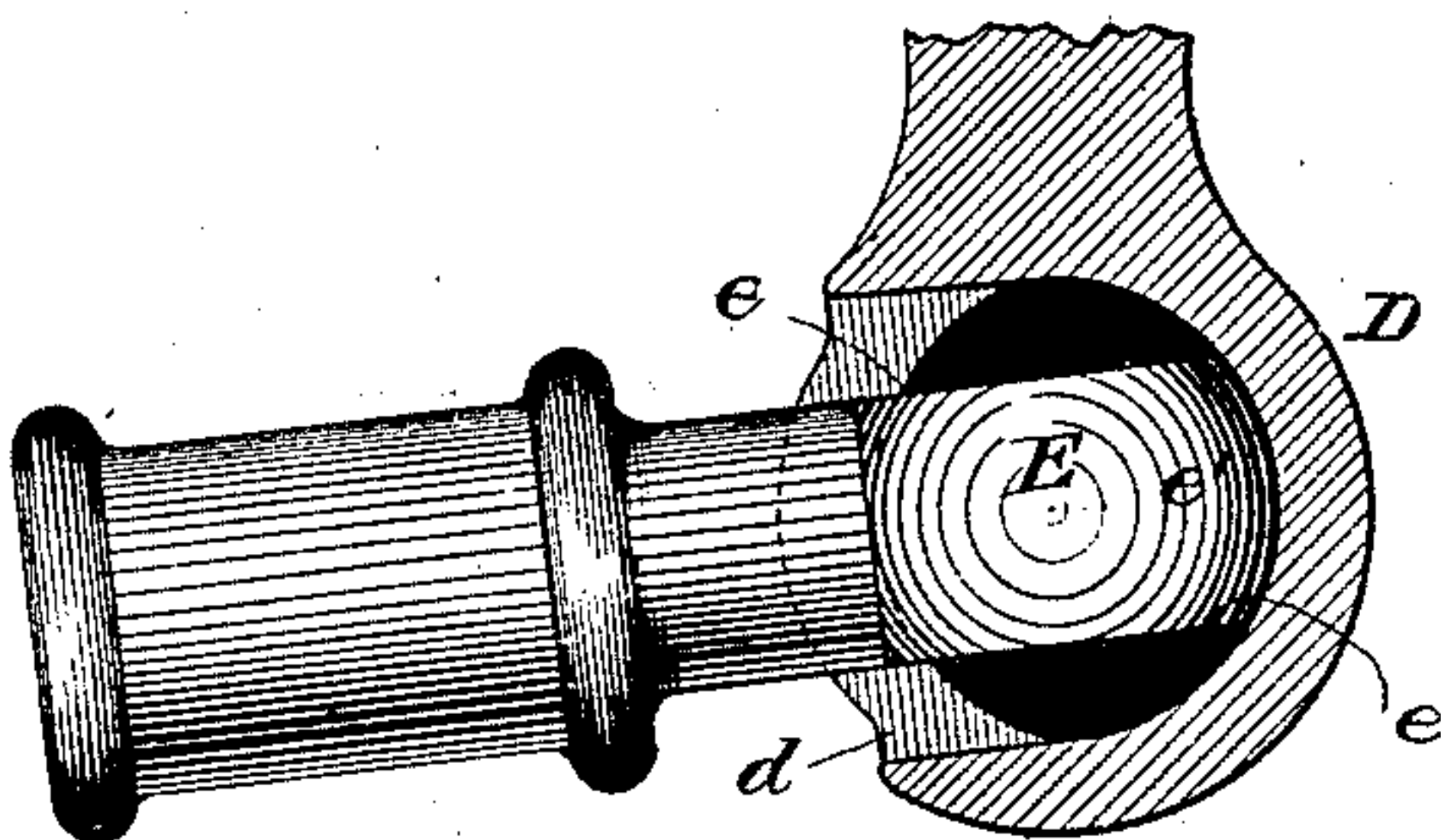
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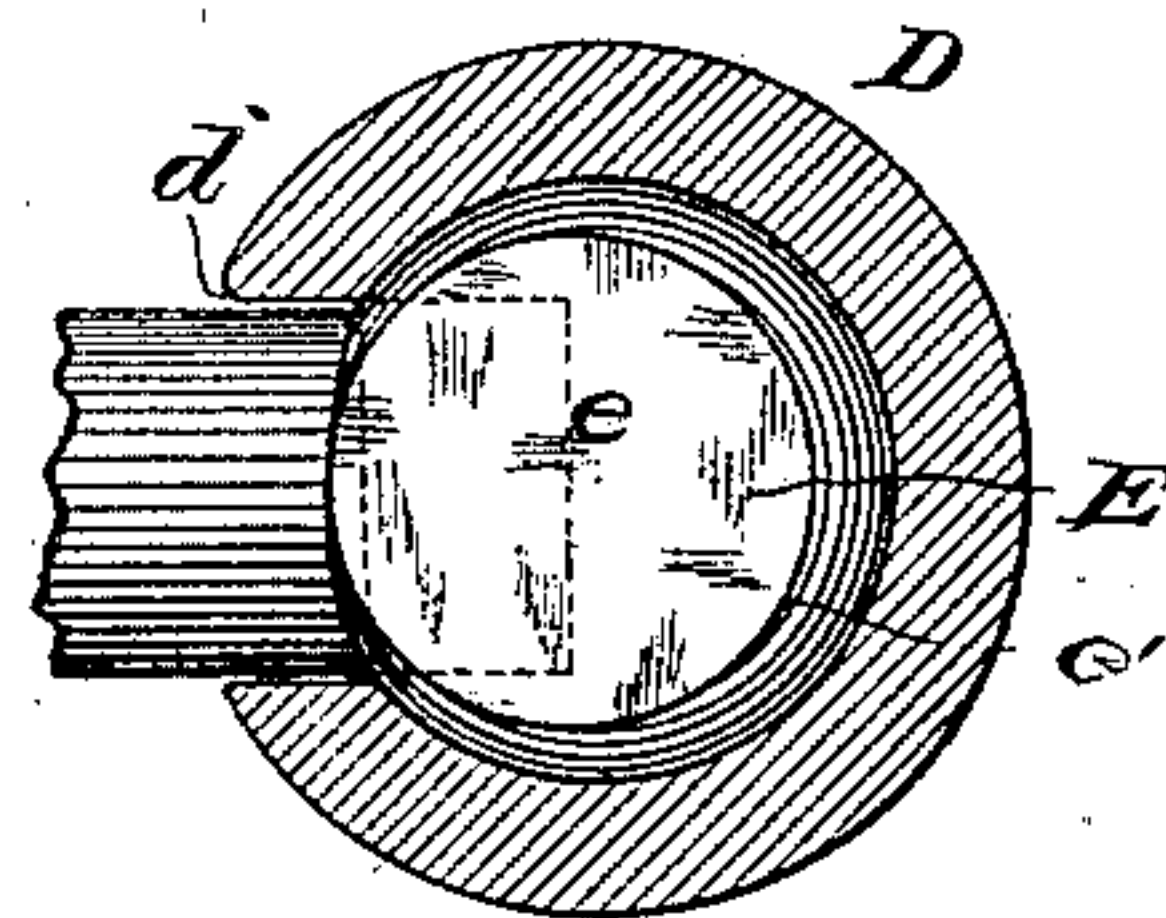
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



WITNESSES

*Wm A. Skink*  
*Geo W. Young*

INVENTOR

*Richard W. Benedict*  
By *his Attorneys*  
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# UNITED STATES PATENT OFFICE.

RICHARD W. BENEDICT, OF PERRY, NEW YORK, ASSIGNOR TO JAMES WYCKOFF AND RICHARD T. TUTTLE, BOTH OF SAME PLACE.

## HARVESTER.

SPECIFICATION forming part of Letters Patent No. 282,040, dated July 31, 1883.

Application filed March 10, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD W. BENEDICT, of Perry, in the county of Wyoming and State of New York, have invented certain new and useful Improvements in Harvesters, of which the following is a specification.

My invention relates to improvements applicable to machines of the type especially designed for cutting grass, and usually termed "two-wheeled front-cut mowers." A machine of this type is shown in United States Letters Patent No. 247,707, of September 27, 1881.

My object is mainly to simplify and cheapen in construction and give increased strength and greater durability to certain parts, as will in detail be described in connection with the accompanying drawings, which show in part only a suitable machine embodying my improvements.

Figures 1 and 2 are respectively a side elevation and a front elevation, with portions of the machine shown by dotted lines, parts broken away and other parts in section. Fig. 3 is a side elevation, partly in section, showing portions of a tilting-lever and brace-bar, and the manner in which they connect with each other and with a coupling-arm. Fig. 4 is a view partly in section of a universal joint by which the brace-bar and coupling-arm are connected with the main frame. Fig. 5 is a view in section at a right angle to the line of section shown by Fig. 4.

Driving-wheels A A, a main frame, B, a main-frame arm or corner-extension, A', together with a tongue, a driver's seat, and all other necessary parts of a suitable machine are of ordinary well-known construction. A coupling-arm, C, is connected at its inner or heel end to the front corner projection of the main frame by a peculiar universal or double joint, instead of being united, as heretofore, by devices requiring a number of parts in their construction, and necessitating more or less difficulty in the separation and connection of the coupling-arm and frame.

As shown in Figs. 4 and 5, the socket D, instead of being made in two parts detachably connected for insertion and removal of a ball, or, as has sometimes been the custom, by casting it about the ball, is constructed as follows: The socket D is formed at its side with an

elongated opening, *d*, and instead of the spherical connecting part or ball of the joint a partly circular and partly flattened joint-head, E, is provided. This joint-head is of a shape such as would be produced by taking the ordinary ball of the ball-and-socket joint and grinding it down on opposite sides to produce the flattened faces *e e*, while leaving the circular or unground portion *e'* similar in shape to the corresponding part of the ordinary ball of such joints. By so forming the joint-head it may readily be inserted into the side opening of the socket, and thus admit of ready connection and separation of the two parts of the joint, while answering all the requirements for ordinary purposes of such joints that the usually employed full ball-and-socket joints do. As will be seen by inspection of the drawings, the length of the opening in the side of the socket is equal to or very slightly in excess of the diameter of the circular portion of the joint-head, while the width of this opening is such as to correspond with or slightly exceed the thickness of the joint-head—that is to say, the distance between its two flattened faces. When the two parts are connected and the joint-head turned to the position shown in Figs. 4 and 5, it will be perceived that to separate the two parts of the joint would require a quarter-turn. The play thus allowed during the working of the joint is ample for the purpose that I especially design it for.

At the outer or free end the coupling-arm has jointed connection with a shoe, F, to which the finger-beam of the cutting apparatus is connected in well-known way. A roller or ground-wheel, F', is mounted in down-hangers of the coupling-arms, as heretofore, and this coupling-arm also has two pairs of lugs, *f f f' f'*, projecting upwardly and rearwardly therefrom.

A tilting-lever, G, has pivotal connection with the lugs *f* of the coupling-arm, and is provided with a downwardly and rearwardly projecting arm, *g*, having suitable jointed connection with the lugs *f'* of the coupling-arm.

A short brace-bar or push-rod, H, has universal-joint connection, such as hereinbefore described, with the down-hanger H' of the main frame at its rear end, and at its front end is secured with the coupling-arm by the same piv-



ot which joins the tilting-lever thereto. A rack-arm, I, projects upwardly and curves forwardly from the brace-bar close to the inner side of the tilting-lever. A suitable  
 5 spring-actuated detent or engaging-lug, J, of the tilting-lever is caused to interlock with any one of the rack-teeth on the brace-bar which may be desired, so as to hold the cutting apparatus in the desired tilted position.  
 10 A suitable rocking lever, K, chain k, and detent devices serve to lift the coupling-arm in well-known way for an obvious purpose. From the above description it will be seen that the coupling-arm and the brace-bar may  
 15 readily be connected with and detached from the main frame without the removal of any bolts and nuts, such as are usually employed to unite the two sections of the socket of the joint; and, further, that the ordinarily-  
 20 employed separately-formed tilting-levers and connecting-rods, by which they are connected with the coupling-arm or other part of the machine are dispensed with, and the com-  
 25 pound or combined tilting-lever and connection with the coupling-arm is provided, thus greatly simplifying the construction of this part of the machine.

As in this instance shown, the connection between the arm *g* of the tilting-lever and the  
 30 coupling-arm is a loose joint-connection, which facilitates the ready attachment and separation of the parts, and is as follows: The arm *g* at and near its lower end is provided on each side with two transverse ears, *m n*, joining  
 35 with the rear side ribs, *o*. In this way a partly-open recess or socket, *h*, is provided on each side of the arm *g*, at its end, to receive engaging-lips *p*, one on each of the lugs *f' f'*, and projecting inwardly therefrom. The lugs *f'*  
 40 *f'* are strengthened by being connected at *q* outside of the roller.

It should be noticed that accidental movement of the brace-bar rack-arm away from the side of the lever is prevented by the over-  
 45 lapping portion or embracing-lip *l* of the detent-slide L, the range of movement allowed this slide being such as not to permit it to move far enough to release the rack.

I claim as of my own invention—

50 1. The joint-socket having the single elongated side opening to admit of the insertion and removal of the partly-circular joint-head, which about corresponds in diameter and thickness, respectively, with the length and width of  
 55 the socket-opening, substantially as and for the purpose hereinbefore set forth.

2. The joint-head, flattened or cut away, and having the circular portion to adapt it to work in the socket, the said circular portion about  
 60 corresponding with the internal diameter of the socket, substantially as and for the purpose hereinbefore set forth.

3. The two-part joint consisting of the combination of the joint-socket having an elon-

65 gated side opening and a partly-circular joint-head inserted in and removable from the socket by way of its opening, with the length of which opening the joint-head about corresponds in diameter, substantially as and for  
 70 the purpose hereinbefore set forth.

4. The coupling-arm having the joint-head flattened or cut away and partly circular, its said circular portion about corresponding in  
 75 diameter with the internal diameter of the joint-socket, substantially as and for the purpose hereinbefore set forth.

5. The combination of the main frame, the joint-socket having the elongated side opening, the coupling-arm, and the partly-circular  
 80 joint-head, substantially as and for the purpose hereinbefore set forth.

6. The brace-bar having the joint-head flattened or cut away and partly circular, substantially as and for the purpose hereinbefore set forth.  
 85

7. The combination, substantially as hereinbefore set forth, of the coupling-arm, the brace-bar having pivotal connection therewith, the tilting-lever, also pivotally connected with  
 90 the coupling-arm, the arm of the lever having jointed connection with the coupling-arm, and the rack and detent connection between the lever and brace-bar, for the purpose described.

8. The combination of the main frame, the coupling-arm, the brace-bar having pivotal  
 95 connection with the coupling-arm and provided with the rack-arm and the tilting-lever, substantially as and for the purpose hereinbefore set forth.

9. The combination of the coupling-arm provided with upwardly and rearwardly projecting  
 100 lugs, the tilting-lever provided with the downwardly-projecting arm, and means by which the lower end of the lever and its arm have jointed connection with their respective  
 105 lugs of the coupling-arm, substantially as and for the purpose hereinbefore set forth.

10. The combination of the main-frame arm, the coupling-arm doubly jointed at its heel  
 110 thereto, the cutting apparatus, the lugs of the coupling-arm, the tilting-lever provided with the downwardly-projecting arm, means by which the lower end of the lever and its arm have jointed connection with their respective  
 115 lugs of the coupling-arm, the brace-bar jointed at its end to the coupling-arm with the lower end of the lever, the down-hanger of the frame, to which the heel end of the brace-bar is jointed, the rack-arm of the brace-bar, and the  
 120 detent of the tilting-lever engaging therewith, substantially as and for the purpose hereinbefore set forth.

In testimony whereof I have hereunto subscribed my name.

R. W. BENEDICT.

Witnesses:

F. H. WYCKOFF,  
 A. W. BENEDICT.