

No. 775,906.

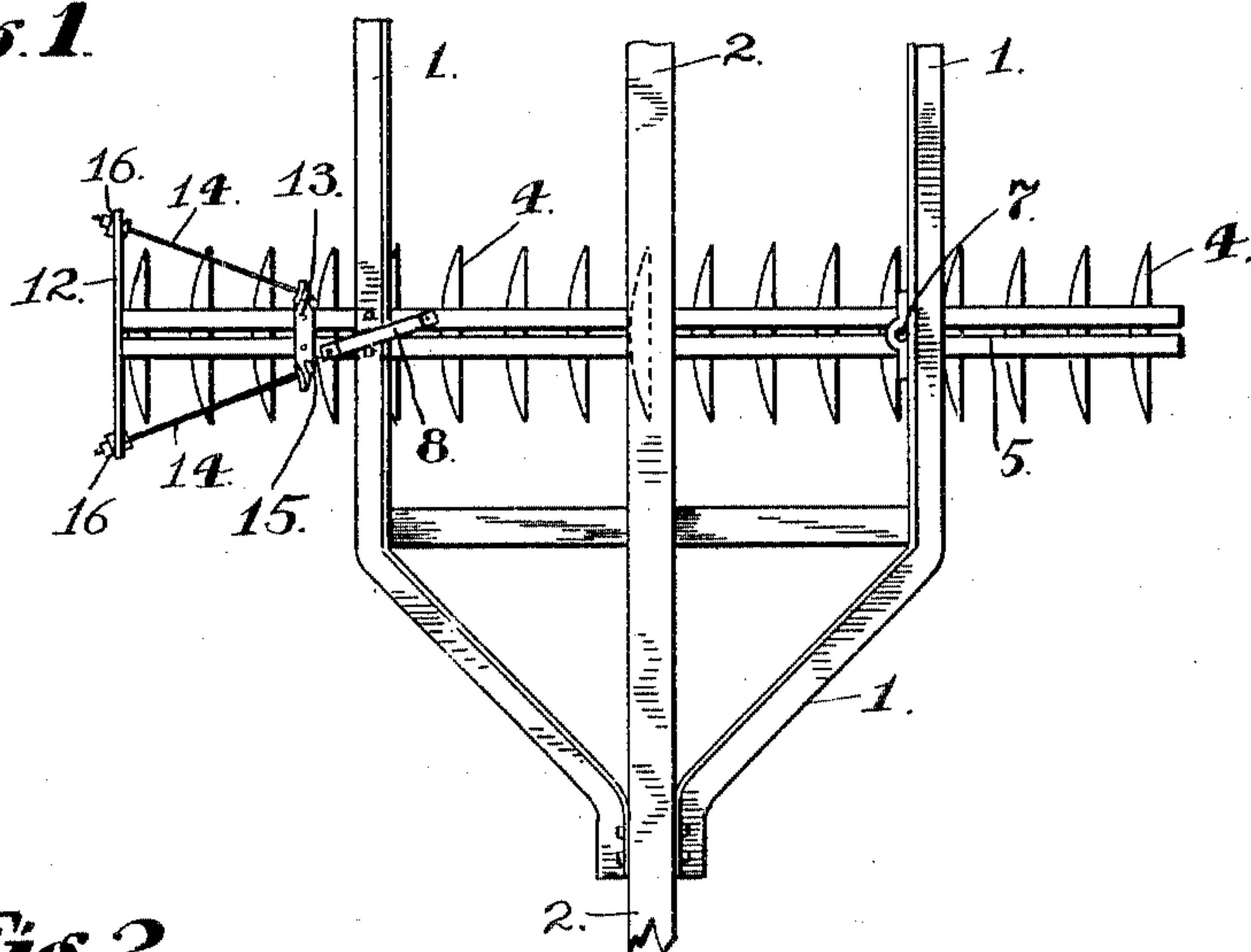
PATENTED NOV. 22, 1904.

A. H. KOPPERUD.  
CULTIVATOR.

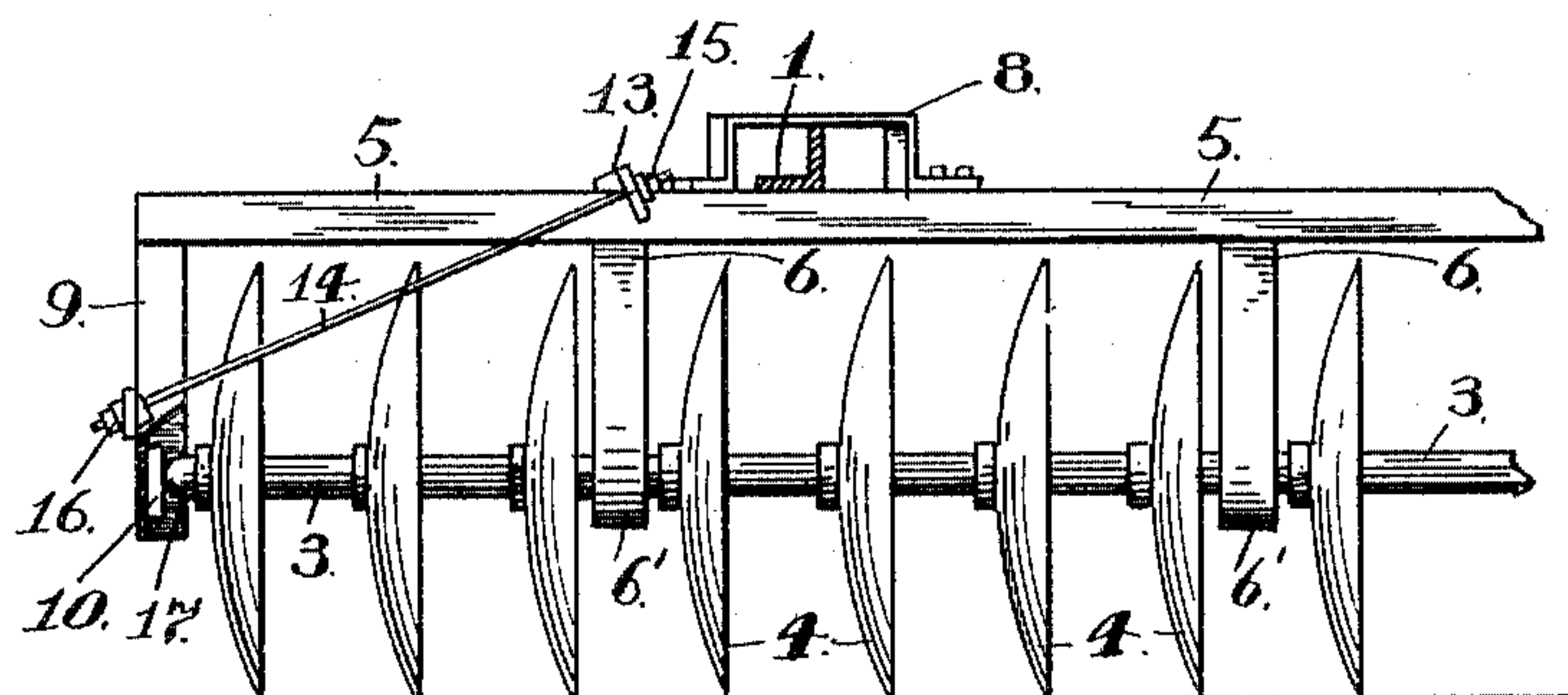
APPLICATION FILED APR. 25, 1904.

NO MODEL.

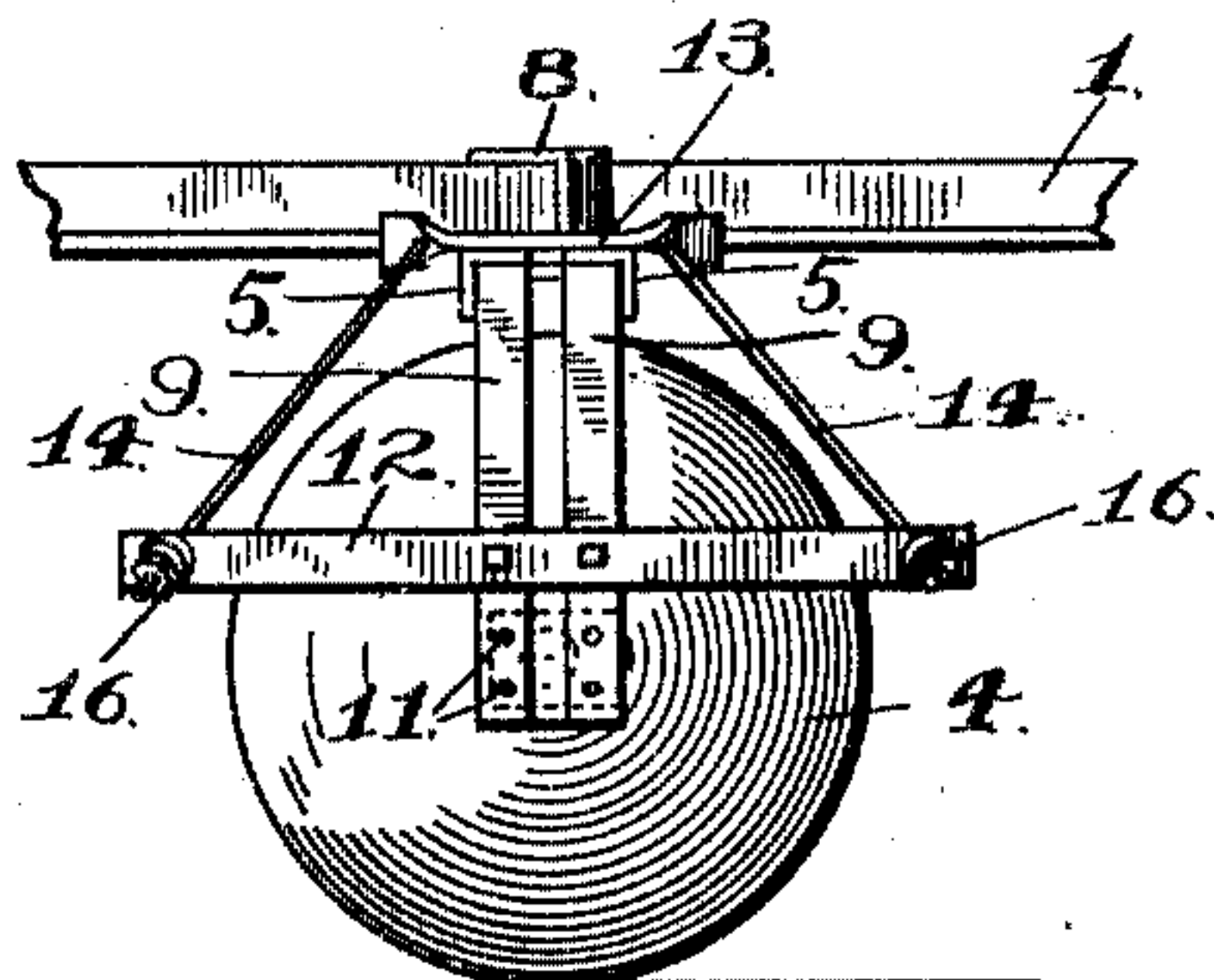
**Fig. 1.**



**Fig. 2.**



**Fig. 3.**



WITNESSES.

Arthur J. Lee.  
Charles E. Vance.

INVENTOR  
A. H. Kopperud  
by N. A. Kopperud  
his atty



# UNITED STATES PATENT OFFICE.

ANDERS H. KOPPERUD, OF BYRON, CALIFORNIA, ASSIGNOR OF ONE-FOURTH TO ROY LESTER McCABE, OF BYRON, CALIFORNIA.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 775,906, dated November 22, 1904.

Application filed April 25, 1904. Serial No. 204,685. (No model.)

*To all whom it may concern:*

Be it known that I, ANDERS H. KOPPERUD, a citizen of the United States, residing at Byron, Contra Costa county, State of California, have  
5 invented certain new and useful Improvements in Cultivators; and I do hereby declare the following to be a full, clear, and exact description of the same.

The hereinafter-described invention is designed for use more particularly in connection with side-draft colter-disk cultivators, the object of the invention being to provide means for taking up or compensating for the end thrust of the axle carrying the row of colter-disks, whereby undue strain is removed from  
15 the cultivator-frame and the axle for the colter-disks held in proper position during the working of the cultivator.

To comprehend the invention, reference  
20 should be had to the accompanying sheet of drawings, wherein—

Figure 1 is a broken top plan view of a colter-disk cultivator disclosing one row of colter-disks, the cross-beam pivoted to the  
25 frame of the cultivator, from which cross-beam the axle for the colter-disks is suspended, and the take-up mechanism for the end thrust of the suspended axle. Fig. 2 is a broken front view in elevation of the cross-beam and axle  
30 suspended therefrom carrying the colter-disks, one of the angle-brackets for holding the case-hardened shoe against which the free end of the axle works being sectioned, a portion of the cultivator-frame which extends  
35 through the guide-bracket of the pivoted cross-beam being sectioned; and Fig. 3 is an end view of the take-up mechanism for the end thrust, the said mechanism being illustrated attached to the cross-beam from which  
40 the colter-disks axle is suspended.

In the drawings the numeral 1 is used to indicate any suitable form of frame for a cultivator, and 2 the pole connected thereto. This frame supports the axle 3 for the row of colter-disks 4, only one axle and one row of colter-disks being disclosed in the present case, which axle 3 is suspended from a cross-beam 5 by

means of the standards 6, Fig. 2 of the drawings. Said axle works in bearings 6' of said standards.

The cross-beam 5 is attached near its inner end portion to the frame of the cultivator by the hinged joint 7, Fig. 1 of the drawings, its outer or free end portion being connected to the said frame by means of a guide or stirrup  
55 plate 8.

To the outer or free end of the pivoted cross-beam 5 is attached the depending brackets 9, which brackets near their lower end carry the case-hardened shoe 10, which shoe is detach-  
60 ably secured to the inner face of said brackets in any suitable manner, preferably by screw-bolts 11.

To the outer face of the brackets 9, preferably a slight distance above the line of the upper edge of the case-hardened shoe 10, is attached a brace or strengthening plate 12, the outer ends of which are secured to a plate 13, attached to the free-end portion of the cross-  
65 beam 5 by means of the tie-rods 14. The upper ends of these tie-rods pass through holes in the upset edge of the tie-rod plate 13, being held by heads 15. To the lower screw-threaded end of the tie-rods 14 are secured the nuts 16, the tightening of which through  
75 the medium of the brace or strengthening plate 12 forces the brackets or standards 9 inward, so as to cause the case-hardened shoe 10 to bear firmly against the free or outer end 17 of the axle 3, which works against said  
80 shoe. By means of the adjustment thus permitted the tie-rods 14 wear of the case-hardened shoe 10 is compensated for. When the said case-hardened shoe has become worn out, the same is removed and a new one inserted  
85 in place thereof.

The mechanism for swinging the cross-beam 5 to change the position of the row of colter-disks is not illustrated in the present case, inasmuch as any suitable form of lever mech-  
90 anism may be employed for this purpose.

Inasmuch as the take-up mechanism for the end thrust of the axle is mounted to swing with movement of the hinged or pivoted cross-

beam 5, it is apparent that the case-hardened shoe 10 at all times bears firmly against the said axle and prevents loose play thereof.

Having thus described the invention, what  
5 is claimed as new, and desired to be protected by Letters Patent, is—

In a colter-disk cultivator, the combination  
with the frame thereof, of a cross-beam piv-  
oted at one end to the frame, an axle depend-  
10 ing from the cross-beam, of colter-disks on  
the axle, of depending supporting-brackets  
carried by the free-end portion of the cross-

beam, a wear-shoe against which one end of  
the axle works removably secured to the in-  
ner face of the brackets, a brace-plate at- 15  
tached to the brackets, and adjustable con-  
nection between the brace-plate and the cross-  
beam.

In witness whereof I have hereunto set my  
hand.

ANDERS H. KOPPERUD.

Witnesses:

NINIAR E. GREY,  
JAMES M. GREY.