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G. E. BLAINE.  
ADJUSTING LEVER AND RATCHET CONNECTION FOR HARROWS.  
APPLICATION FILED JUNE 14, 1906.

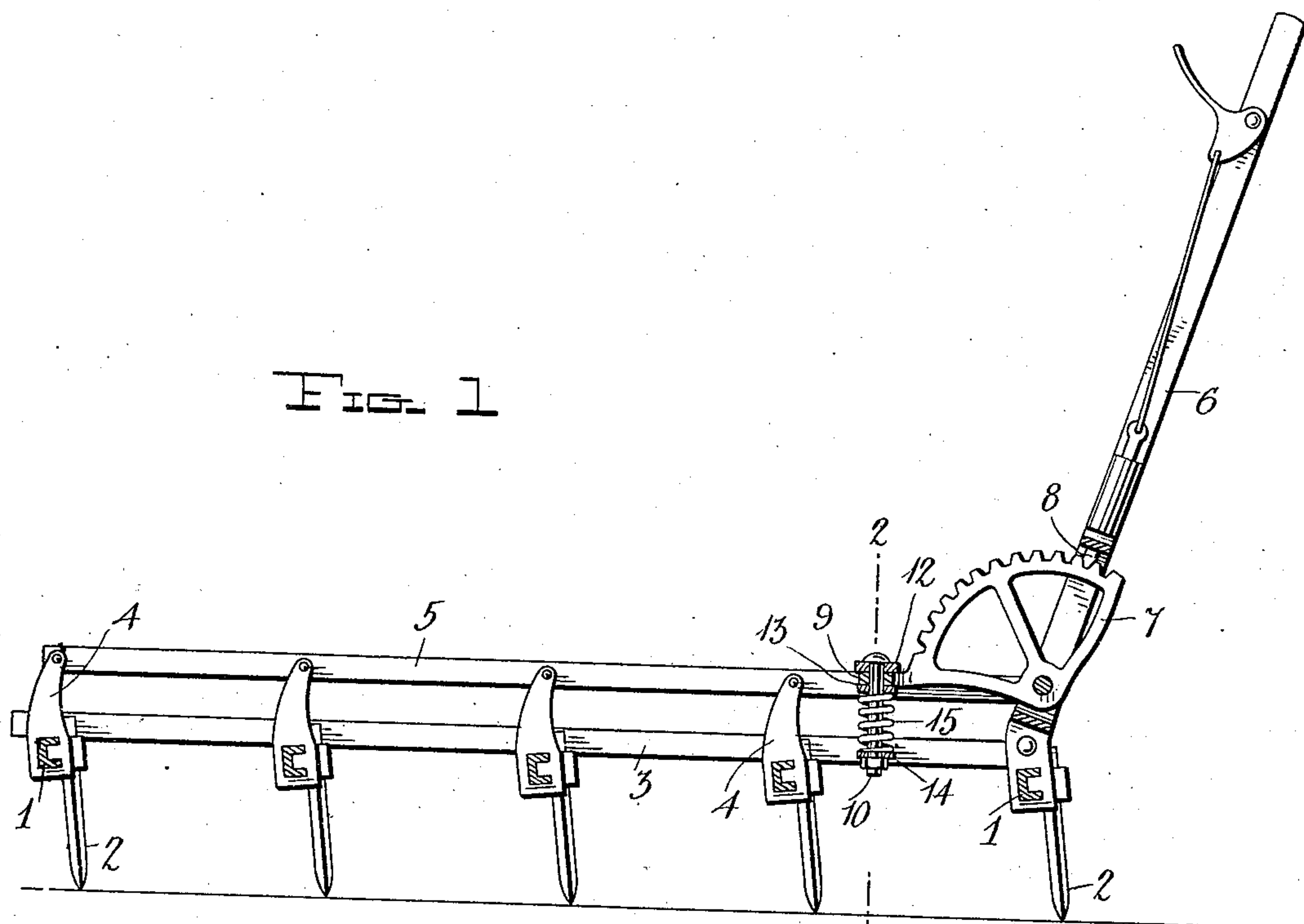
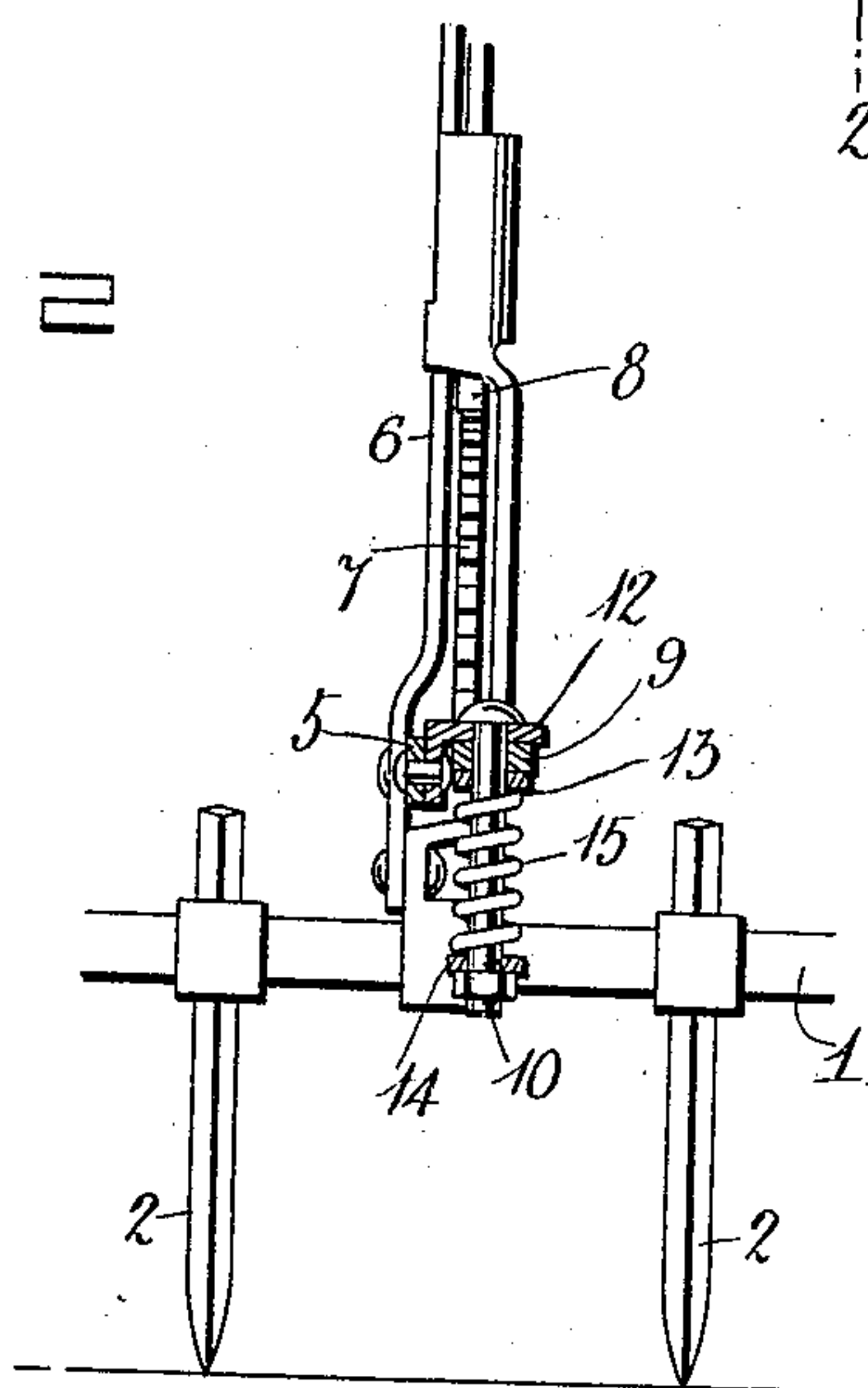


FIG. 2



Witnesses  
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# UNITED STATES PATENT OFFICE.

GEORGE E. BLAINE, OF INDIANAPOLIS, INDIANA.

## ADJUSTING-LEVER AND RATCHET CONNECTION FOR HARROWS.

No. 842,996.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed June 14, 1906. Serial No. 321,780.

*To all whom it may concern:*

Be it known that I, GEORGE E. BLAINE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Adjusting-Lever and Ratchet Connections for Harrows; and I do declare the following to be a full, clear, and exact description of the invention, such as it will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in adjusting-lever and ratchet connections for harrows.

The object of the invention is to provide an adjusting-lever and ratchet having means whereby the same may be yieldingly connected to the adjusting-bar of the harrow to yieldingly hold the harrow-toothed bars and the teeth thereon in their adjusted position.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical sectional view through a harrow, showing an adjusting-lever and ratchet with the improved connections applied thereto; and Fig. 2 is a vertical sectional view through the connections, taken at right angles to Fig. 1 on the line 2 2 of said figure.

Referring more particularly to the drawings, 1 denotes the harrow-tooth bars, on which are fastened harrow-teeth 2. The bars 1 are revolubly mounted on or secured to connecting-bars 3, whereby said harrow-tooth bars may be turned or adjusted to vary the angle of the harrow-teeth. Connected to the harrow-tooth bars 1 are upwardly-projecting segmental arms 4, which are pivotally connected to an adjusting-bar 5.

Rigidly secured to the rear harrow-tooth bar is an upwardly-projecting adjusting-lever 6, which is pivotally connected to the rear end of the adjusting-bar 5, as shown. On the pivot-bolt connecting the rear end of the adjusting-bar to the lever 6 and arranged in the bifurcated lower end of said lever is a segmental rack 7, with the teeth of which is adapted to be engaged a locking-pawl 8, car-

ried by the adjusting-lever and operated in the usual manner.

In order that the harrow-tooth bars and harrow-teeth may be yieldingly held in their adjusted positions, the forward end of the segmental rack is provided with an apertured lug or ear 9, through which is adapted to be passed a depending bolt 10, the upper end of which is secured in a bracket 12 on the adjusting-bar 5. On the bolt 10 below the apertured lug 9 of the rack is arranged an upper washer 13, while on the lower end of the bolt is arranged a lower washer 14, and on said bolt between the washers 13 14 is arranged a coil-spring 15, against the tension of which the rack 7 bears in holding the tooth-bars on the harrow in their adjusted positions, whereby should the teeth on said bars be engaged with an obstruction the parts of the harrow will yield, thereby preventing the breaking or bending of said parts, as will be understood. The action of the spring on the rack 7 serves to hold the parts tight and to take up all lost motion, thereby preventing the rattling or creaking of any of the movable parts.

By placing the washers one at the top and one at the bottom of the spring on the bolt 10 the spring is compelled to press on the radius of the ratchet, the top washer receiving the bearing of the ratchet in the compression of the spring, so that it yields to a radial motion, thereby preventing friction and noise.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined by the appended claim.

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

In a harrow the combination of tooth-bars, an adjusting-bar pivotally connected to said tooth-bars, an adjusting-lever and rack pivotally connected to said adjusting-bar, a lat-



erally-projecting bracket secured to said ad-  
justing-bar, a bolt depending from said  
bracket, washers disposed on said bolt, a  
spring on said bolt between said washers,  
5 said rack having an apertured lug or ear en-  
gaging said bolt between said bracket and the  
top washer.

In testimony whereof I have hereunto set  
my hand in presence of two subscribing wit-  
nesses.

GEORGE E. BLAINE.

Witnesses:

MINNIE BLAINE.

CLEO HUMES.