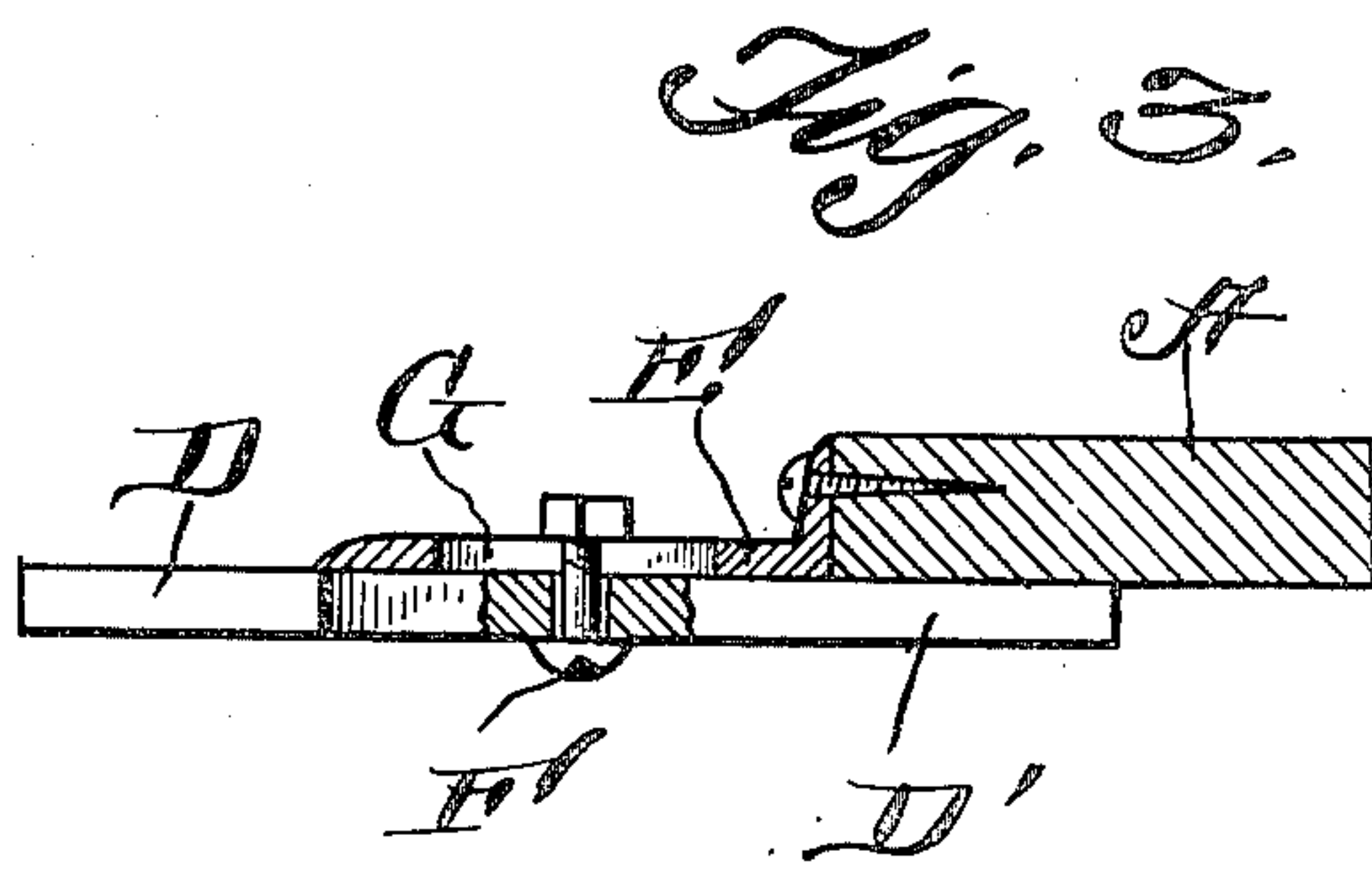
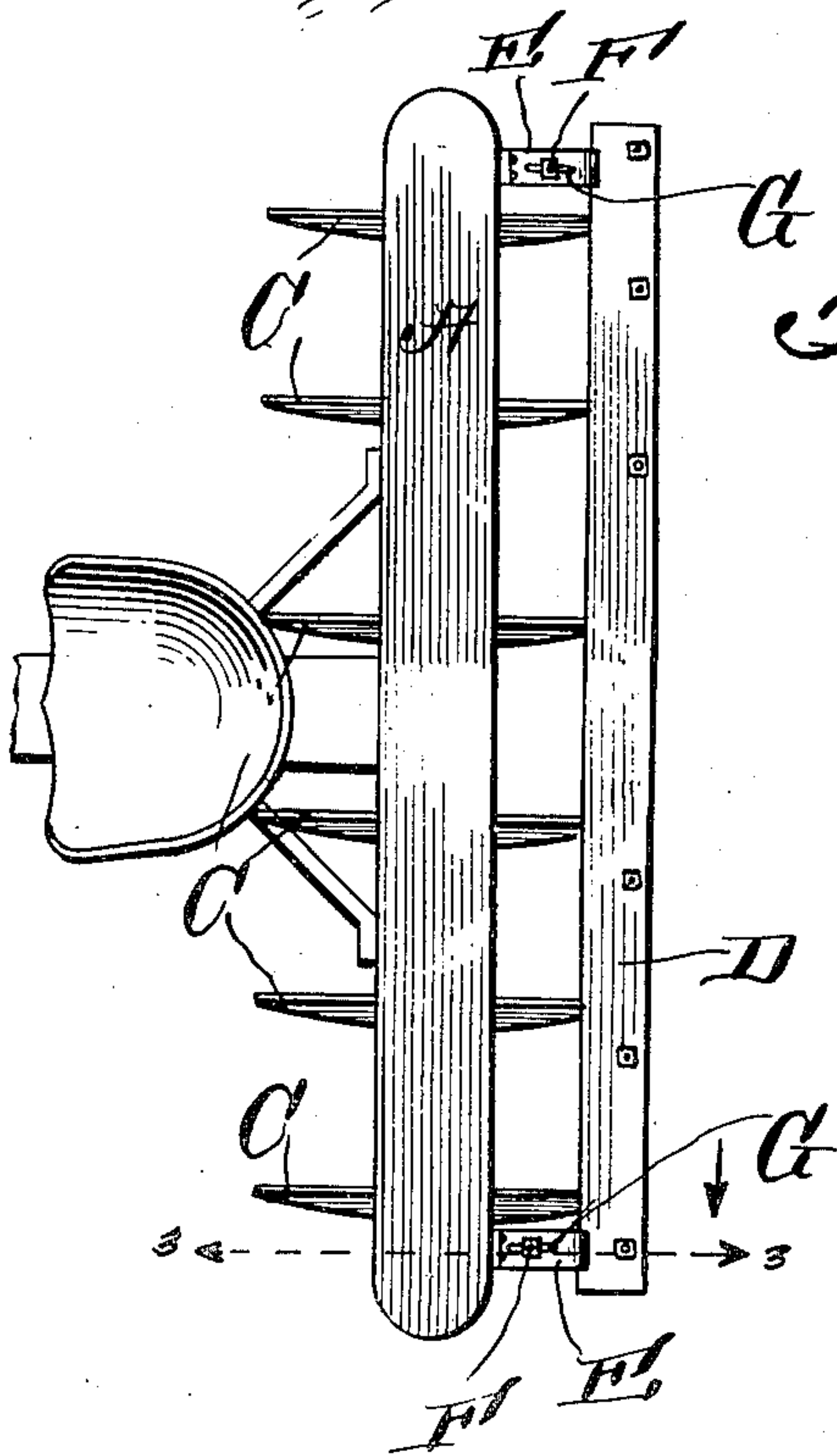
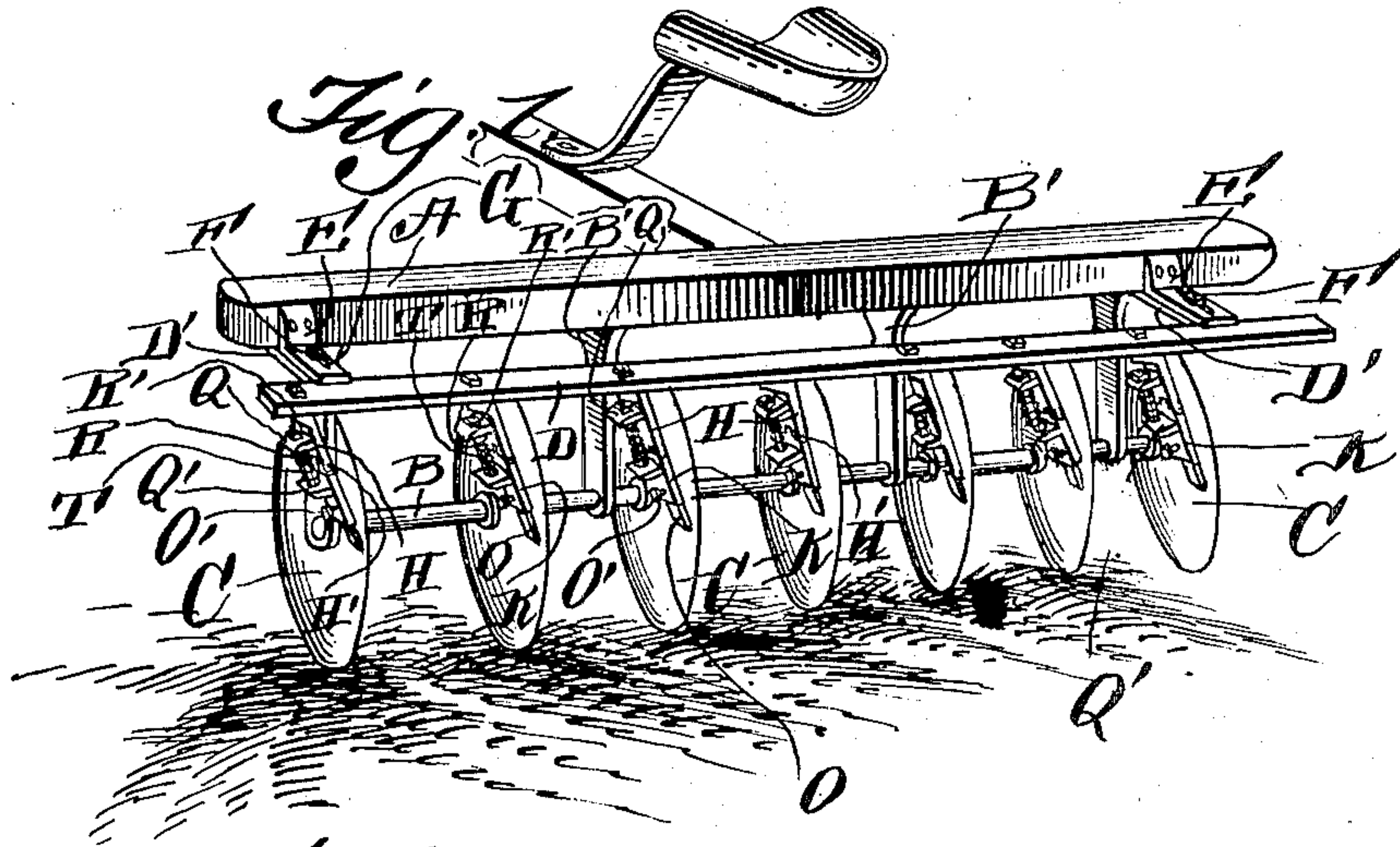


P. BENDER.  
DISK HARROW SHARPENING APPARATUS.  
APPLICATION FILED NOV. 17, 1909.

958,077.

Patented May 17, 1910.

2 SHEETS—SHEET 1.



Witnesses

*R. S. Caswell*  
*A. R. Stough*

Inventor

*Peter Bender.*

*Francis N. Doyl*

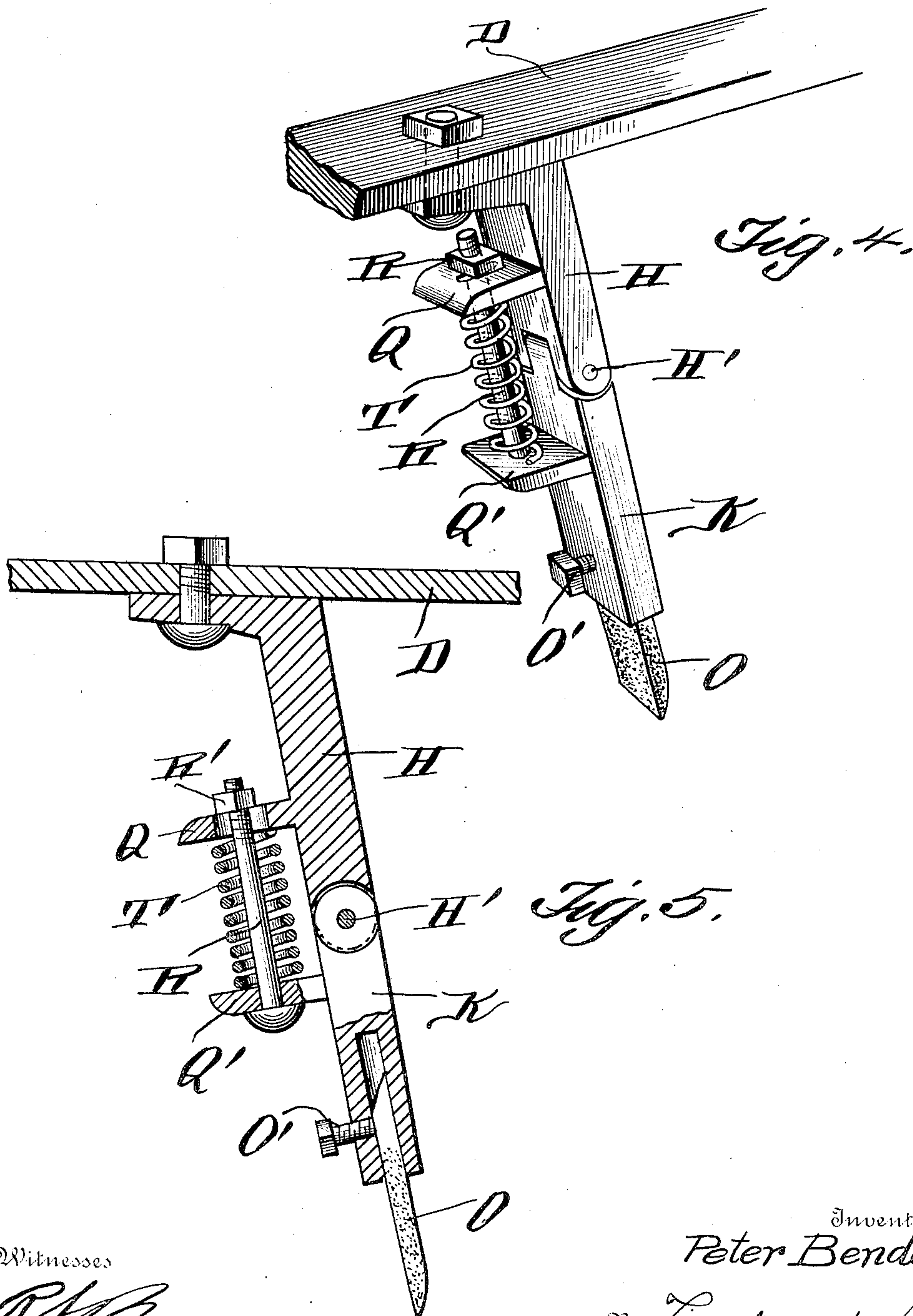
Attorneys

P. BENDER.  
DISK HARROW SHARPENING APPARATUS.  
APPLICATION FILED NOV. 17, 1909.

958,077.

Patented May 17, 1910.

2 SHEETS—SHEET 2.



Witnesses

*R. A. Jewell.*  
*A. L. Hough.*

Inventor  
*Peter Bender.*

By *Franklin D. Hough*

Attorneys



# UNITED STATES PATENT OFFICE.

PETER BENDER, OF SLATER, MISSOURI.

## DISK-HARROW-SHARPENING APPARATUS.

958,077.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed November 17, 1909. Serial No. 528,519.

*To all whom it may concern:*

Be it known that I, PETER BENDER, a citizen of the United States, residing at Slater, in the county of Saline and State of Missouri, have invented certain new and useful Improvements in Disk-Harrow-Sharp-  
5 Sharpening Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as  
10 will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specifica-  
15 tion.

This invention relates to new and useful improvements in apparatus for sharpening disk harrows and comprises various details of construction and combinations and ar-  
20 rangements of parts which will be herein-after fully described and then specifically defined in the appended claim.

I illustrate my invention in the accom-panying drawings, in which:—

25 Figure 1 is a perspective view of a harrow and sharpening device embodying the features of my invention. Fig. 2 is a top plan view. Fig. 3 is a sectional view on line 3—3 of Fig. 2. Fig. 4 is a detail per-  
30 spective view of one of the spring-pressed members carrying the cutting knife, and Fig. 5 is a sectional view through the members carrying a cutting knife.

Reference now being had to the details of  
35 the drawings by letter, A designates the frame bar of the harrow and B the axle mounted in the bracket arms B', and C the harrow disks of the usual construction mounted upon said axle. Mounted upon  
40 said frame bar is the adjustable rack D having arms D' fixed thereto and each of which is held to the bracket extension member E by means of set screws F passing through the slots G, thereby affording means for  
45 holding the rack nearer to or farther from the disks to be sharpened, which latter may be of different diameters. Fixed to the under face of said rack is a series of arms, each designated by letter H, one for each har-  
50 row disk. One of said arms, which are seated preferably at an inclination, has a slotted end carrying a pin H' to which a socket knife carrying member K is pivoted. O designates a cutting blade which is re-

versible and provided with a cutting edge 55 upon each end and held in said socket member by means of a set screw O'. Projecting from each arm is a lug Q and also from each socket member a similar lug Q', which lugs are provided with registering apertures for  
60 the reception of a bolt R upon which is mounted a threaded nut R'. Intermediate each of said lugs, one upon an arm and the other upon a socket member, is positioned a spring T provided for the purpose of caus-  
65 ing the cutting edge of the sharpening knife to be held yieldingly against the edge of the harrow to be sharpened.

By the provision of the nut upon the threaded end of the bolt passing through  
70 said lug, the tension of the spring may be regulated and thereby a greater or less pressure may be applied to the cutting edge which is held against the harrow as it  
75 rotates.

From the foregoing, it will be noted that, by the provision of a sharpening device as shown and described, a simple and efficient device is provided whereby the various har-  
80 row disks may be sharpened simultaneously, the cutting edge of the knife being regulated by the pressure brought to bear against the same, as will be readily understood. When the cutting edge of the knife becomes  
85 dull, the same may be reversed as will be readily understood.

What I claim to be new is:—

An apparatus for sharpening harrow disks comprising, in combination with the cross beam of a harrow frame, slotted  
90 bracket arms fastened to the edge of said beam, a rack having laterally projecting arms, bolts passing through apertures in said arms and slots of said bracket mem-  
95 bers, flanged bars fastened to the under face of said rack, a pivotal socket member mounted upon each of said bars, an integral lug projecting from each bar and socket  
100 member, a bolt passing through registering apertures in said lugs, a coiled spring mounted upon each bolt and interposed between said lugs.

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

PETER BENDER.

Witnesses:

O. A. KRAMER,  
DAN EHLERS.