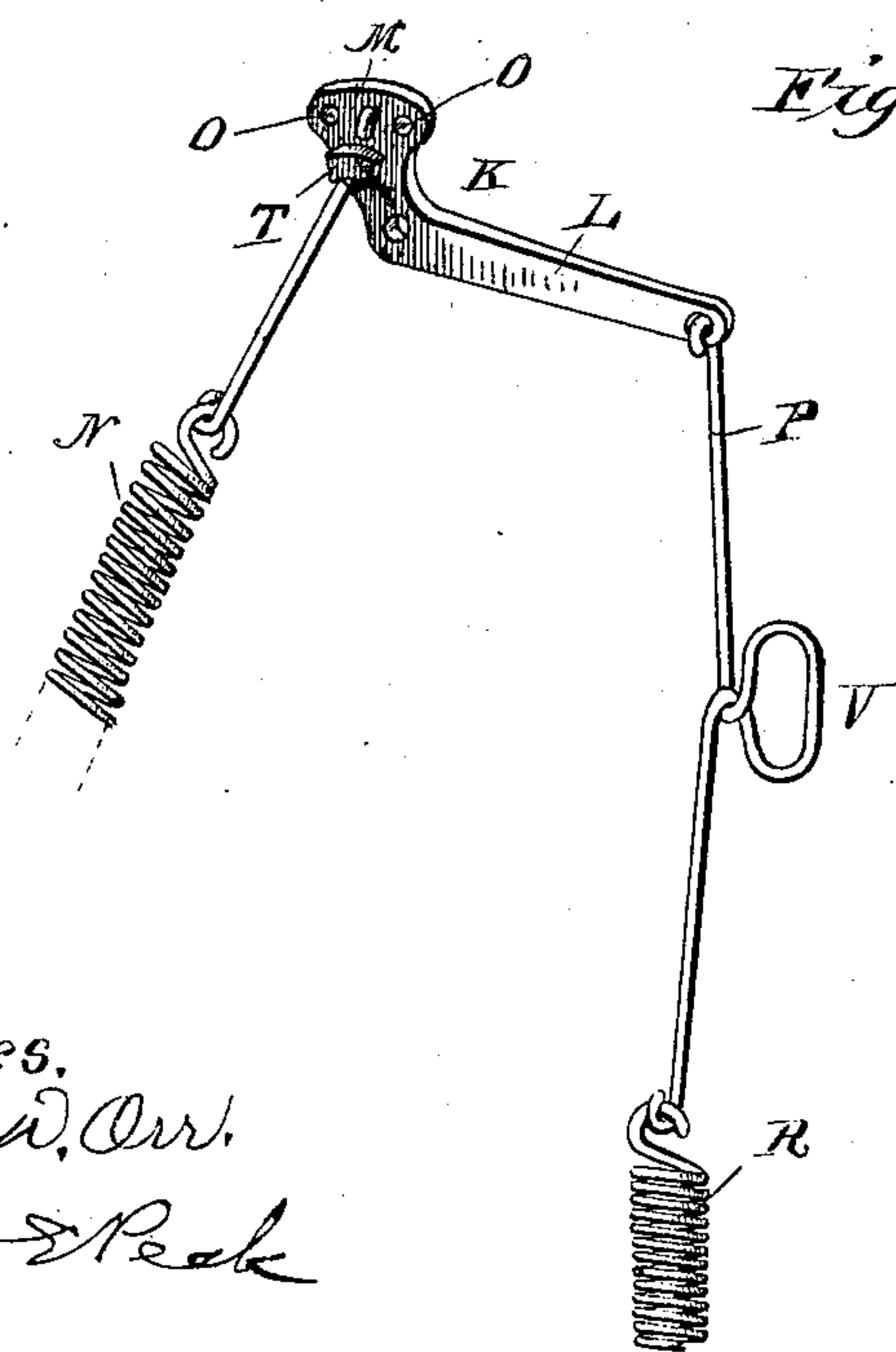
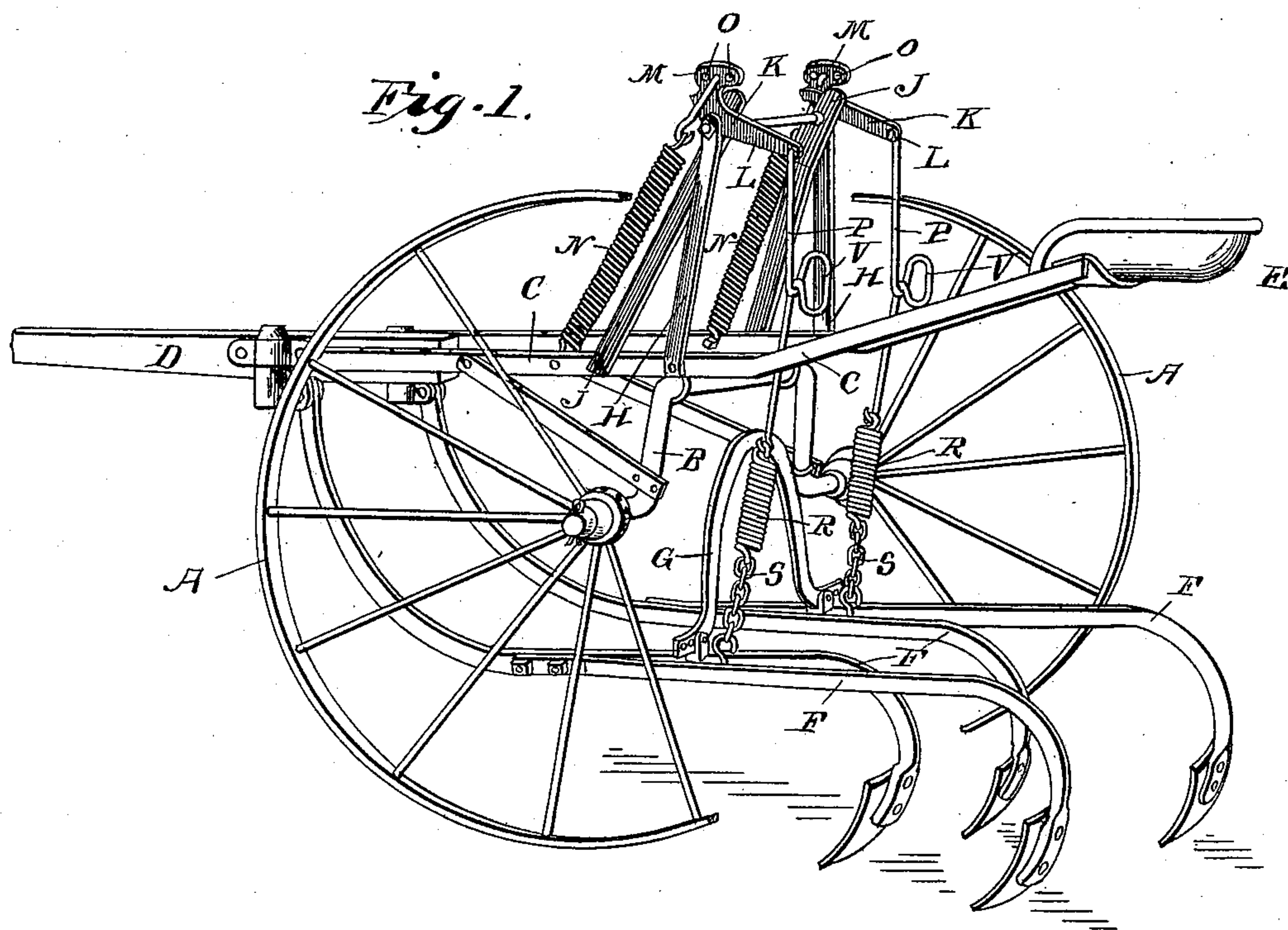


(No Model.)

C. S. RUEF.  
CULTIVATOR.

No. 565,509.

Patented Aug. 11, 1896.



Witnesses,  
Howard W. Orr.  
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By  
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Att'y.



# UNITED STATES PATENT OFFICE.

CHARLES S. RUEF, OF DIXON, ILLINOIS, ASSIGNOR TO THE GRAND DETOUR  
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## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 565,509, dated August 11, 1896.

Application filed August 16, 1895. Serial No. 559,447. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES S. RUEF, a citizen of the United States, residing at Dixon, in the county of Lee and State of Illinois, have  
5 invented certain new and useful Improvements in Cultivators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable  
10 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 specification.

My invention has reference to improvements in straddle-row cultivators; and it consists in certain novel means for adjustably supporting the shovel-gangs while at work  
15 and for automatically locking them in an elevated position when not in use.

As several of the parts of the machine embodying my invention are in use and well known, and my invention, with obvious changes, can be applied to nearly all of the different types of such cultivators, I do not  
20 deem it necessary to describe the entire machine; or any more of the several parts thereof, than will render intelligible the location, relation, and operation of the several parts constituting said invention.

The object of my invention is to provide such a relation and coöperation of devices as that the shovel-gangs when at work may have a slight elastic support at some intermediate point on their beam, and that said gangs may  
25 be lifted and locked at the will of the operator in an elevated position by a slight initiate lift of said gang.

I attain the above purpose by the construction illustrated in the accompanying drawings, in which—  
30

Figure 1 is a perspective of a machine embodying my invention. Fig. 2 is a more enlarged detail of the bell-crank lever and its adjuncts, which support and optionally lift the  
35 shovel-gangs.

Similar letters refer to similar parts throughout both views.

As my invention is shown and used in duplicate, a description in reference to only one  
40 shovel-gang will be given herein.

A A are the carrying-wheels, seated upon

the usual bowed axle B, upon which is imposed the frame C, provided at its forward end with a tongue D and at its rear end with a driver's seat E, the shovel-gangs F respectively connected pivotally at their forward  
55 ends to the frame C and adjustably interconnected by the arched bar G.

A standard H is rigidly seated on the frame C about over the axle B and preferably  
60 strengthened in place by a brace J, suitably attached at its upper end to said standard and at its lower end to said frame C. A bell-crank lever K is pivotally attached at its angle to the side of the standard H, near the  
65 top of the latter, with its longer arm L projected normally in a horizontal position to the rear and its short arm M upward. A coiled spring N is attached at its lower end to the frame C a short distance in front of the base  
70 of standard H and at its upper end in any one of the horizontal series of openings O, formed for that purpose in the upper end of the arm M of the lever K. The rear end of the horizontal arm L of said lever K is connected  
75 to the shovel-gang F by a vertical rod P, coiled spring R, and links S. The three parts last named jointly form the connection between the arm L and shovel-gang. The links S at the lower end of said connection  
80 afford means for adjusting the shovel-gangs vertically. The spring R when the parts are in the position shown in Fig. 1 exerts any desired lifting action upon said gangs, the amount of the action of the spring in that  
85 behalf being regulated by the hitch of the links S to the shovel-gang.

The bell-crank lever K is pivotally seated upon the standard H on the outside of the latter, a short distance below the upper end  
90 of said standard, so that the short arm M of lever K, in the oscillations of the latter, swings to and from the upper extremity of said standard. On the inner face of the arm M, and beneath the openings O therein, is formed  
95 a double-faced cam or stop T, having somewhat the form of the keystone of an arch.

When the gangs F are in position for work, one side of the stop T abuts against the front edge of the standard H, as shown in Fig. 1,  
100 and thereby locks the lever against any further depression of its long arm L. In this



position of the parts the line of contraction of the spring N is so nearly across the pivotal seat of the lever K as that said spring exerts little or no influence to raise the cultivator-gang, but the moment the latter is raised slightly by the operator, and the upper end of the arm M thereby thrown forward of its pivotal seat, the contractile action of the spring N serves to raise the cultivator-gang into a suspended position. In order that this movement should not be too sudden, or casually occur, it is preferable that the spring N has not sufficient tension to raise the cultivator-gang without some slight assistance from the operator.

A hand-hole V is formed intermediately in the rear side of the rod P, by means of which the operator breaks the lock of the lever K, as shown in Fig. 1, and assists somewhat, if desired, in raising the cultivator-gang. Such hand-holes are also utilized to force the shovel-gang down to its working position.

In the process of raising the shovel-gang to the limit of its upward movement the upper end of the arm M is drawn downward by the spring N until it is below its pivotal seat and the opposite side of the stop T abuts against the front side of the standard H below said pivot. In this position the extremity of the arm L, to which the upper end of the rod P is attached, will be thrown forward of the pivot of lever K, which locks the shovel-gang in its elevated position until the operator shall break such lock by drawing backward on the hand-hole V.

My invention affords a simple, efficient, and durable mode of supporting the shovel-gang with any desired degree of elastic draft while at work, and of simply and certainly locking said gang in an elevated position for the purposes of turning, transportation, or storage.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. The combination of a suitably-supported

frame C, standard H rigidly seated thereon, angular lever K, pivoted at its angle to the said standard near the upper end of the latter, and provided with a stop T, a spring N connecting the forward end of said lever with the frame C in front of said standard, the shovel-gang F and the rod P and spring R connecting said gang to the opposite end of said lever K substantially as shown and for the purpose described.

2. The combination of a suitably-supported frame C, a standard H rigidly fixed thereon, an angular lever K provided with stop T and pivotally seated on said standard in position to be optionally locked against the latter in two positions, and suitable forward spring connection of said lever to the frame of the machine, and a flexible rear connection thereof to the shovel-gang substantially as shown and for the purpose specified.

3. The combination of a suitably-supported frame C, shovel-gang F pivotally connected thereto at its forward end, a fixed standard H seated on said frame, an angular lever K provided at one of its ends with a stop T pivotally seated on said standard, a spring N connecting the forward ends of said lever with said frame C forward of said standard H, and an adjustable spring connection between the rear end of said lever and said shovel-gang substantially as shown and for the purpose specified.

4. In a cultivator, the standard H seated on the frame thereof, and an angular lever K, pivoted at its angle, to said standard and provided with stop T, and adapted to be locked by said stop against the front edge of said standard in reverse positions substantially as shown and for the purpose described.

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

CHARLES S. RUEF.

Witnesses:

M. COOKSON,

F. T. HORSEMAN.