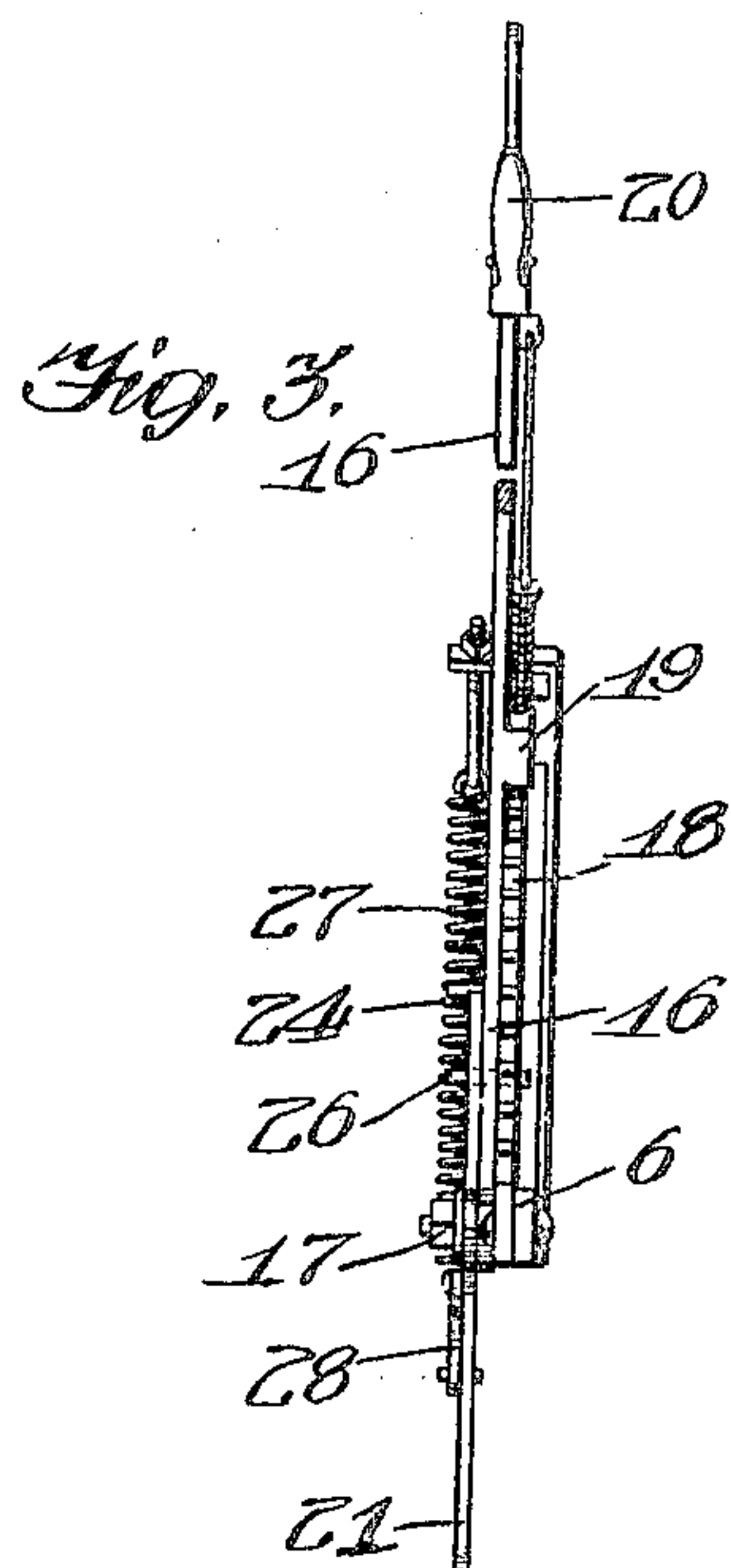
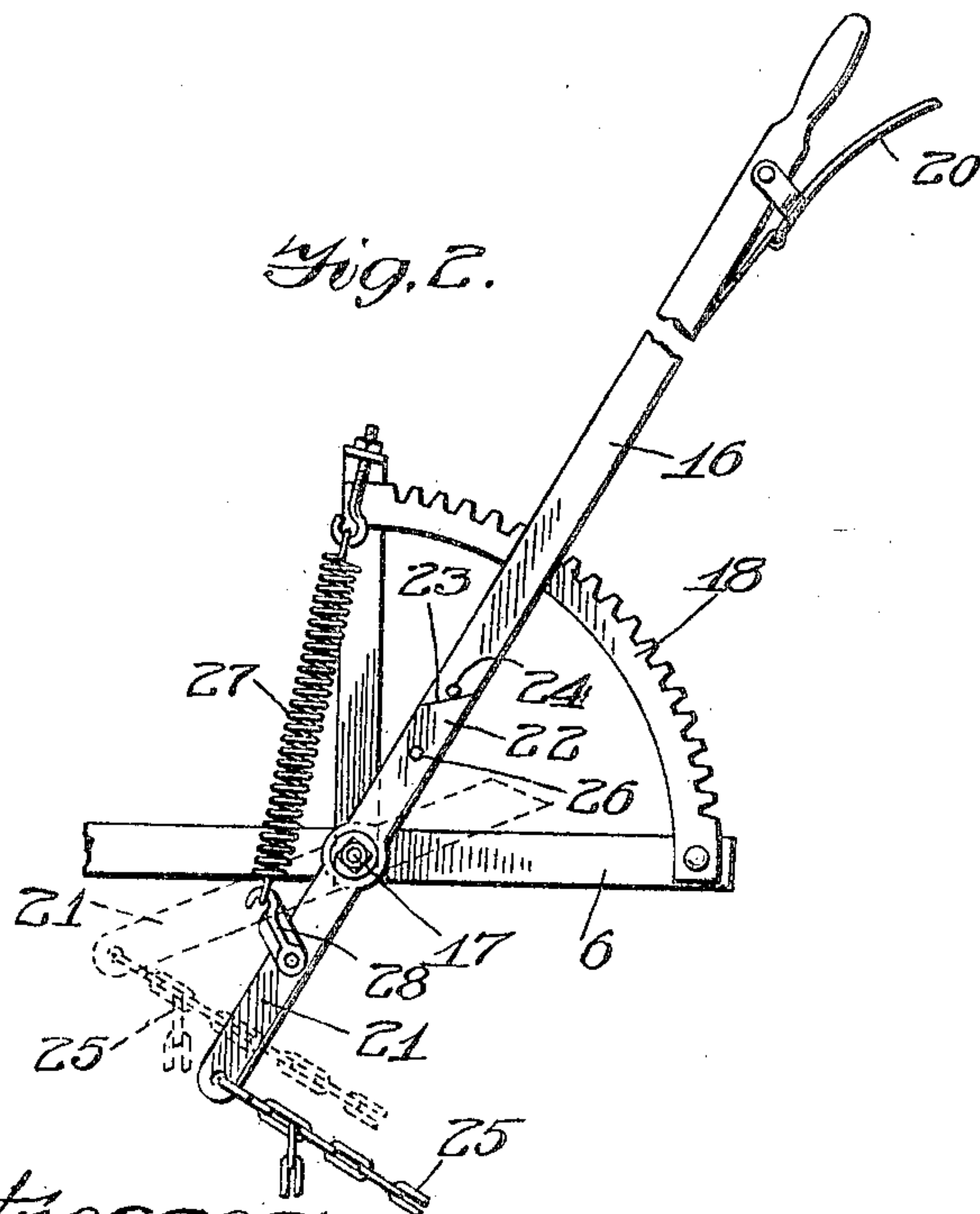
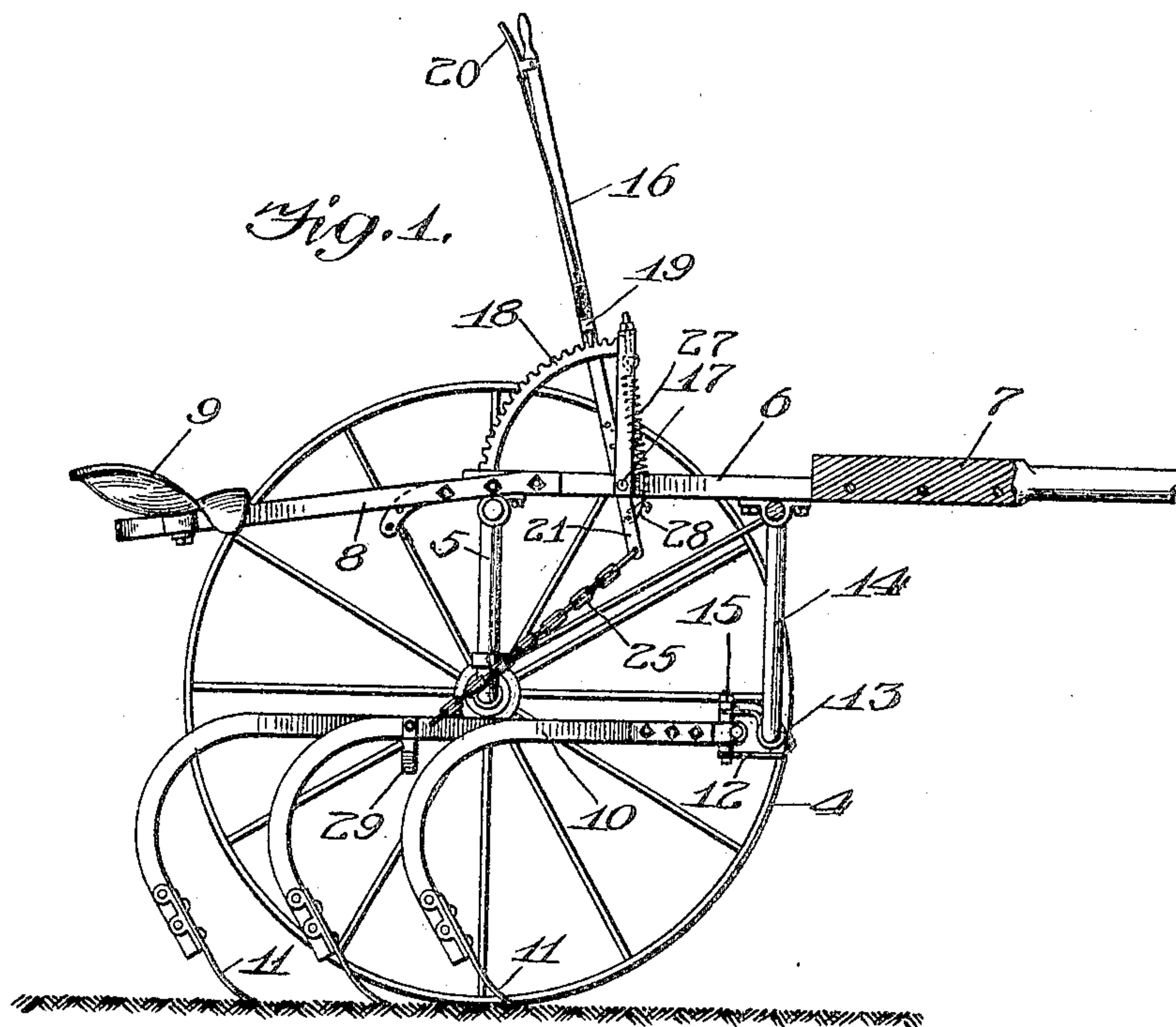


No. 821,119.

PATENTED MAY 22, 1906.

W. L. PAUL.
CULTIVATOR.

APPLICATION FILED APR. 17, 1905.



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CULTIVATOR.

No. 821,119.

Specification of Letters Patent.

Patented May 22, 1906.

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To all whom it may concern:

Be it known that I, WILLIAM L. PAUL, a citizen of the United States, residing at Bradley, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to cultivators, and has for its object to provide a new and improved construction by which cultivator-shovels may be set to work at any desired depth, but which will permit the shovels to be lifted to avoid obstructions, such lifting, however, being accomplished without the necessity of resetting the devices by which the depth of cultivation is controlled.

A further object is to provide such construction with spring mechanism for assisting in raising the cultivator-shovels, as well as to float the gangs when in use.

A still further object is to provide means for neutralizing the action of the spring mechanism, so that the cultivator-shovels may be held rigidly to their work.

I accomplish these objects as illustrated in the drawings and as hereinafter described.

What I regard as new is set forth in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a cultivator, illustrating my improvements. Fig. 2 is a detail illustrating the special features of improvement, and Fig. 3 is an end view of the parts shown in Fig. 2.

Referring to the drawings, 4 indicates one of the cultivator-wheels, 5 the axle, 6 the frame, 7 the tongue, 8 the seat-bar, and 9 the seat, all of which may be of any approved construction.

10 indicates one of the cultivator-gangs, having shovels 11. Any suitable number of shovels may be employed. As shown in Fig. 1, the gang 10 is connected by a bracket 12 and a sleeve 13 with one end of an arch 14 in the usual manner. The gang 10 is adapted to be raised and lowered, the sleeve 13 turning upon its bearing, or the gang may be swung laterally, turning upon a vertical pivot 15, carried by the bracket 12, as shown in Fig. 1. It will be understood that the cultivator is usually provided with two gangs and that

my improvements may be applied to other forms of cultivators.

16 indicates a lifting-lever, which is pivoted at 17 upon the frame 6. Said lever is provided with a segmental rack 18, which is engaged by the usual locking-dog 19, carried by the lever, said dog being controlled by a hand-lever 20 in the usual way. As best shown in Fig. 2, the lever 16 is provided with an extension or auxiliary lever 21, pivoted between its ends upon the pivot 17, the upper portion 22 thereof extending up parallel with and adjacent to the lever 16. As shown at 23 in Fig. 2, the upper end of said extension is beveled and is adapted to bear against a bolt 24 or other suitable stop, carried by the lever 16. The lower end of the extension 21 is connected by a chain 25 or other suitable connection with the gang 10, as shown in Fig. 1.

26 indicates registering bolt-holes in the lever 16 and the upper portion 22 of the extension 21. By placing the bolt 24 in the bolt-holes 26, the lever and the extension thereof may be secured together, so as to unite said parts rigidly together. As indicated by dotted lines in Fig. 2, when the lever and extension are not rigidly connected together the extension 21 may swing upon the pivot 17 independently of the lever 16.

27 indicates a spring, one end of which is connected with a stationary support, such as the segment 18, while the other end is connected with the lower portion of the extension 21, preferably by means of a connecting-piece 28, as shown in Fig. 2.

29 indicates a foot-rest carried by the gang 10.

By the construction described it will be evident that when the lever 16 and extension 21 are not rigidly connected together the spring 27 acts upon said extension and through it upon the gang to carry a greater or less portion of the weight of the gang, and in practice such spring is adjusted so that it practically floats the gang. When an obstruction is encountered, the operator may readily raise the gang through the foot-rest 29, and owing to the fact that the weight of the gang is counterbalanced by the spring the gang may be very quickly lifted, or may be thrust to one side or the other to avoid the

obstruction. When released, the gang returns to its normal working position, which is regulated by adjusting the lever 16. It will be apparent also that the raising and lowering of the gang is entirely independent of the lever 16, which may be left in such position as it previously has been set, so that the working position of the gang may be maintained constant. If it be desired to relieve the gang from the influence of the spring 27 and to control the position of the gang solely by operating the lever 16, this may be accomplished by placing the bolt 24 in the holes 26, thereby rigidly connecting the lever with the extension.

While I have described specifically the embodiment of my invention illustrated in the drawings, I wish it to be understood that I do not restrict myself to the details of the construction shown and described, except in so far as they are particularly claimed, but that I claim generically the subject-matter of the broader claims.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, a lifting-spring for the furrow-opener, means for locking said lever and extension together, and means connecting said extension with the furrow-opener.
2. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, means for locking said lever and extension together, means connecting said extension with the furrow-opener, and a lifting-spring connected with said furrow-opener independently of said lever.
3. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, means for locking said lever and extension together, means connecting said extension with the furrow-opener, and a lifting-spring connected with said extension.
4. The combination of a furrow-opener, a lifting-lever therefor, an auxiliary lever movable independently of said lifting-lever, means connecting said auxiliary lever with the furrow-opener, and a lifting-spring for the furrow-opener.
5. The combination of a furrow-opener, a pivotally-mounted lifting-lever therefor, an extension mounted on the pivot of said lever and having a portion registering therewith, means connecting said furrow-opener with said extension, and a lifting-spring connected with said extension.
6. The combination of a furrow-opener, an auxiliary lever connected with the furrow-opener, a lifting-spring connected with said

auxiliary lever, and a lever for controlling said auxiliary lever.

7. The combination of a furrow-opener, a pivotally-mounted lifting-lever therefor, an extension mounted on the pivot of said lever and having a portion registering therewith, means connecting said furrow-opener with said extension means for locking said lever and extension together, and a lifting-spring connected with said extension.

8. The combination of a furrow-opener, an auxiliary lever connected with the furrow-opener, a lifting-spring connected with said auxiliary lever, a lever for controlling said auxiliary lever, and means for locking said levers together.

9. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, a stop carried by said lever for limiting the movement of said extension, and means connecting said extension with said furrow-opener.

10. The combination of a furrow-opener, a lifting-lever therefor, a pivoted extension for said lever, said extension being movable independently of said lever, a stop carried by said lever for limiting the movement of said extension, means connecting said extension with said furrow-opener, and means for locking said lever and extension together.

11. The combination of a furrow-opener, an auxiliary lever connected with the furrow-opener, a lifting-spring connected with said auxiliary lever, a lever for controlling said auxiliary lever, and means for locking said controlling-lever in different positions of adjustment.

12. The combination of a furrow-opener, a lifting-lever therefor, means for locking said lever in various positions of adjustment, a pivoted extension for said lever, said extension being movable independently of said lever, means connecting said extension with the furrow-opener, and a lifting-spring connected with said extension.

13. The combination of a furrow-opener, a lifting-lever therefor, means for locking said lever in various positions of adjustment, a pivoted extension for said lever, said extension being movable independently of said lever, means connecting said extension with the furrow-opener, a lifting-spring connected with said extension, and means for locking said lever and extension together.

14. In a cultivator, the combination of a carriage, a vertically-movable cultivator-gang, a lifting-lever therefor, an extension for said lifting-lever, means connecting said extension with the gang, and a stop carried by said lever for limiting the movement of said extension.

15. In a cultivator, the combination of a carriage, a vertically-movable cultivator-gang, a lifting-lever therefor, an extension

for said lifting-lever, means connecting said extension with the gang, a stop carried by said lever for limiting the movement of said extension, and means for locking said lever and extension together.

16. In a cultivator, the combination of a carriage, a vertically - movable cultivator-gang, a lifting - lever therefor, an extension for said lifting-lever, means connecting said extension with the gang, a stop carried by said lever for limiting the movement of said extension, means for locking said lever and extension together, and a spring connected with the carriage and with said extension.

17. The combination of a furrow-opener pivotally mounted to swing vertically, a lifting-lever for said furrow-opener, a lifting-spring for said furrow-opener, and means operated by movement of the lever in one direction for raising the furrow-opener, said lever being movable in the opposite direction independently of the furrow-opener.

18. The combination of a furrow-opener pivotally mounted to swing vertically, an adjustable lever for limiting the downward

movement of the furrow-opener, an auxiliary lever and a lifting-spring acting through said auxiliary lever for lifting the furrow-opener.

19. The combination of a frame, a furrow-opener pivotally connected with said frame so as to swing vertically, an auxiliary lever fulcrumed on the frame and connected with the furrow-opener, a lifting-spring for the furrow-opener, and adjustable means for limiting the downward movement of the furrow-opener.

20. The combination of a frame, a furrow-opener pivotally connected with said frame so as to swing vertically, an auxiliary lever fulcrumed on the frame and connected with the furrow-opener, a lifting-spring for the furrow-opener, and a lifting-lever coacting with said auxiliary lever for raising said furrow - opener and limiting the downward movement thereof.

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Witnesses:

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