

W. H. MORENUS.
DEFLECTOR FOR ELEVATING GRADERS.
APPLICATION FILED JAN. 10, 1908.

907,700.

Patented Dec. 22, 1908.

Fig. 1.

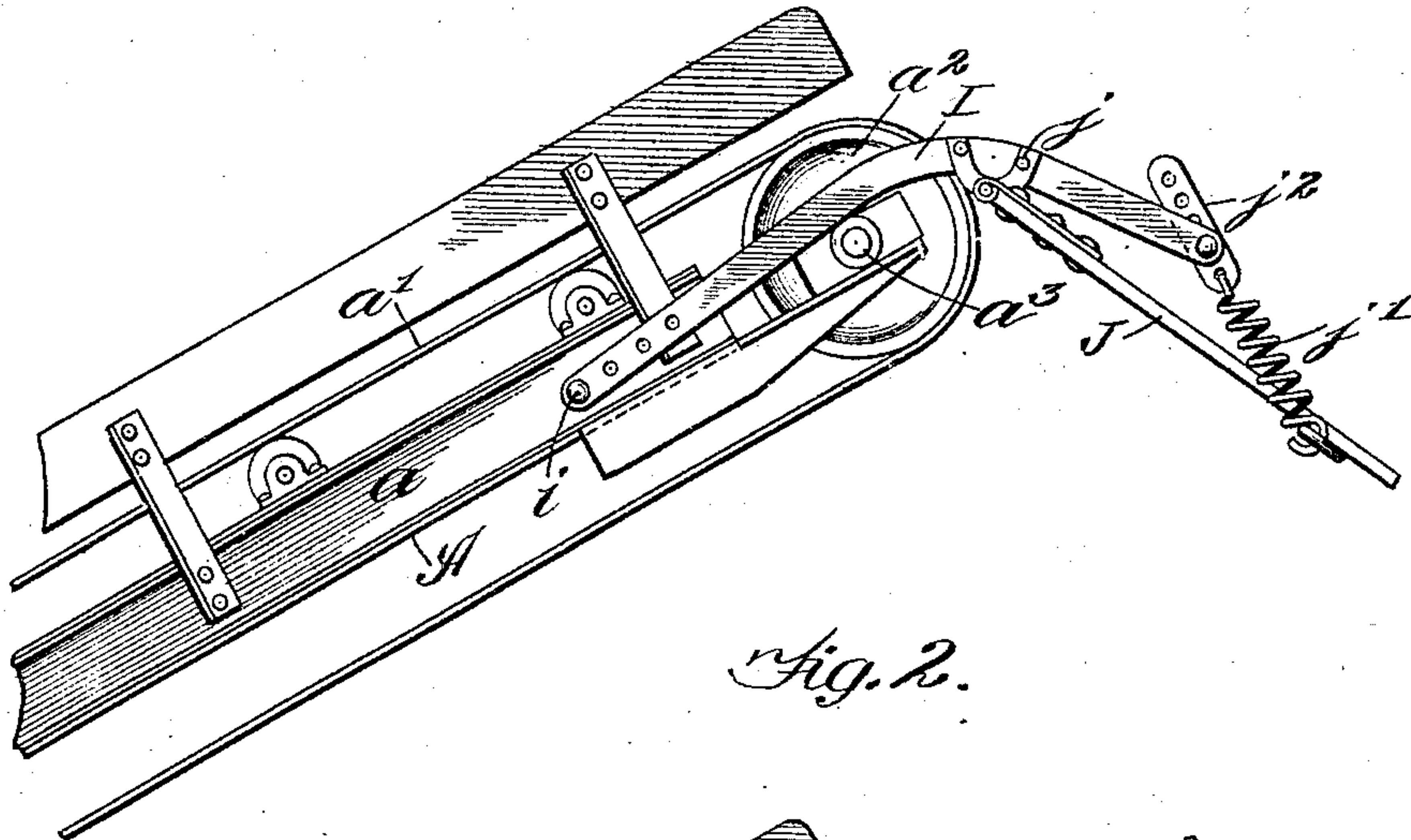
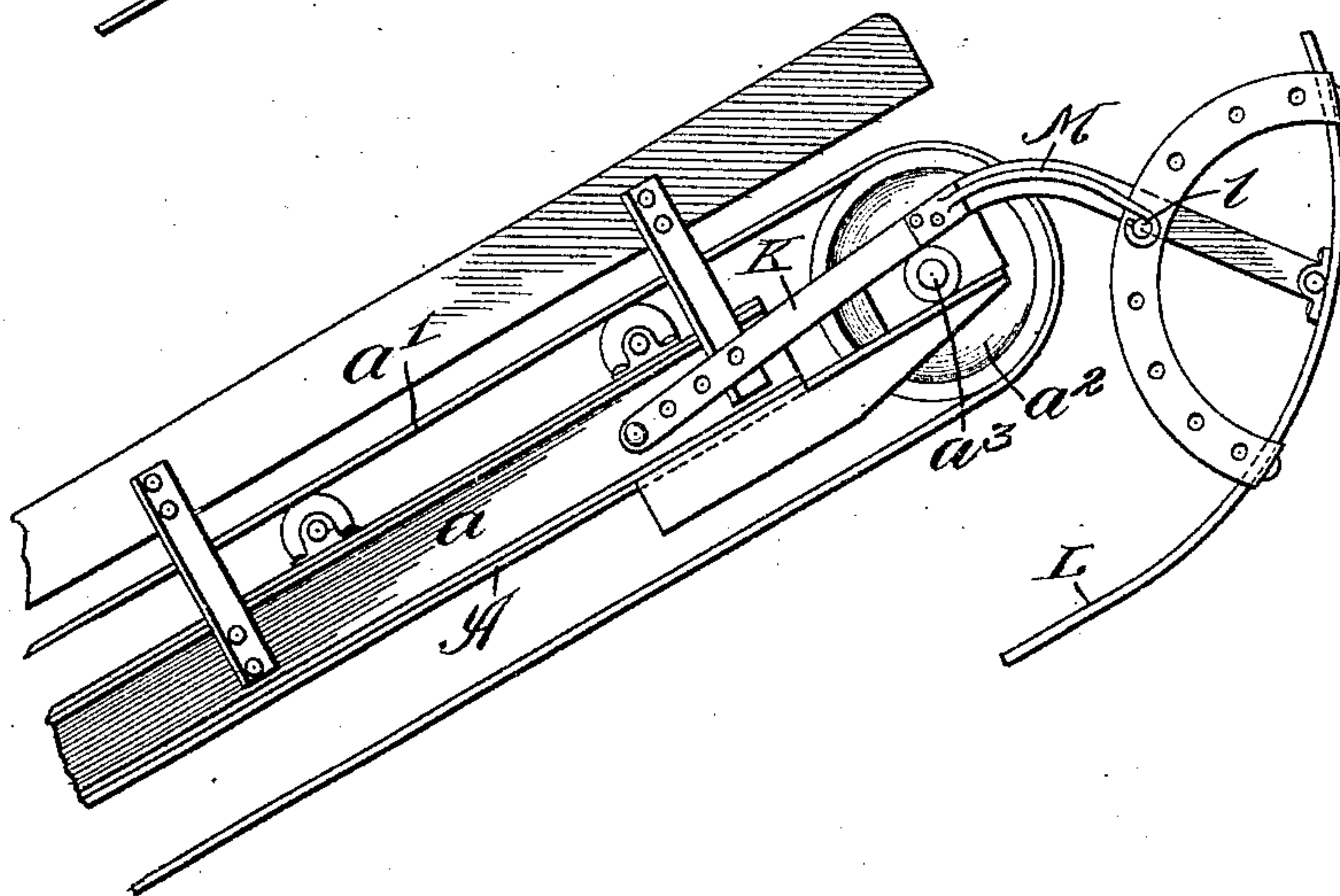


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. MORENUS, OF LAKE VIEW, IOWA, ASSIGNOR TO AUSTIN MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

DEFLECTOR FOR ELEVATING GRADERS.

No. 907,700.

Specification of Letters Patent.

Patented Dec. 22, 1908.

Original application filed August 2, 1907, Serial No. 386,713. Divided and this application filed January 10, 1908.
Serial No. 410,130.

To all whom it may concern:

Be it known that I, WILLIAM H. MORENUS, a citizen of the United States of America, and resident of Lake View, Sac county, Iowa, have invented a certain new and useful Improvement in Deflectors for Elevating Graders, of which the following is a specification.

This application is a division of my prior application No. 386,713, filed August 2, 1907. In my said prior application I have claimed my invention broadly, whereas in the present application I have claimed an improved deflector for the upper end of the elevator of a ditching and grading machine, said deflector being yieldingly supported, whereby it yields to stones or heavy masses of earth discharged from the upper end of the elevator. This I find to be of considerable importance, and of more or less advantage, inasmuch as it prevents the impact of stones or heavy masses of earth from breaking the deflector. The nature and advantages of my invention will, however, hereinafter more fully appear.

In the accompanying drawings—Figure 1 is a side elevation of the upper end of the elevator of an elevating grader, showing the same equipped with a yielding deflector, embodying the principles of my invention. Fig. 2 is a similar view showing another form of my invention.

As thus illustrated, the deflector can be employed for discharging the soil away from the elevator, as shown in Fig. 1, or for discharging the soil downwardly or underneath the elevator, as shown in Fig. 2. In either case, however, the deflector is yieldingly supported, so that stones or heavy masses of earth when discharged on it will not tend to injure or break it.

In Fig. 1, the elevator A has the frame a , the belt a^1 , the upper roll a^2 , and the bearings a^3 ; and the swinging or movable deflector arms I are pivoted at i and adapted to rest on said bearings. A deflector J is hinged to said arms at j , at its inner or upper edge, and has its free or outer edge yieldingly supported by the springs j^1 , which latter have their upper ends fastened to the apertured links j^2 , whereby the tension of the springs can be regulated. With this construction, the soil is discharged from the upper end of the elevator, and is received by the deflector J. If

a stone or heavy mass of earth falls into the deflector, or if the soil should tend to accumulate thereon, the springs j^1 yield and allow the load to slip off.

In Fig. 2, the elevator has the construction previously described, and the deflector arms K are like those previously described. The deflector L is suitably mounted in the manner shown. The bolts l , however, do not pass through the arms K, but are simply engaged by the free ends of the flexible springs M, which latter have their other ends secured to the said arms. In this way, the deflector L can swing about its axis and yield in either direction, so that it will not break or tend to become clogged.

The deflectors J and L are interchangeable, being similarly supported or applied to the machine, whereby the discharge of soil is given a wide range of variation, to meet the requirements of different kinds of work.

From the foregoing it will be seen that the deflector is yieldingly supported entirely by the outer end of the elevator, so that the latter can be raised or lowered or adjusted without interference, and without changing the relation of the deflector thereto. The deflector can be adjusted to assume different angles, according to the character of the soil and the work, and in order to meet the requirements of different conditions. The discharge is lateral in this sense, namely that it is in a direction crosswise of the line of travel of the machine, and at a distance from the side thereof. The yielding connections permit the deflector to yield and break the fall of stones and heavy masses of earth thereon, without danger of breakage thereof, which also tends to prevent overloading and clogging of the deflector. It is evident, of course, that when the deflector is not used it can be swung up to a position above the upper end of the elevator, where it may be supported by any suitable means. With the straight deflector, the dirt can be thrown some distance away from the side of the machine, and with the curved deflector the dirt can be brought underneath the elevator and discharged toward the side of the machine, as the latter travels along. It will be understood and seen that the space below the elevator is left clear and free, so that the soil may be discharged on to the ground toward the side of the machine or away therefrom.

In this way the soil is discharged downwardly on to the ground at a varying distance from the plow, without lengthening or shortening the elevator, and by means of interchangeable deflectors at least one of which is yieldingly mounted, as explained.

What I claim as my invention is:

1. In a ditching and grading machine, an elevator therefor having an endless traveling belt, and a yieldingly supported or held deflector for the upper end of said elevator, said deflector having an inner edge extending across and close to the outer surface of said belt.

2. In a ditching and grading machine, an elevator therefor having an endless traveling belt, a deflector for the upper end of said elevator, said deflector having an inner edge extending across and close to the outer surface of said belt, and means for yieldingly holding said deflector in position for discharging the soil outwardly and away from the elevator.

3. In a ditching and grading machine, an elevator therefor having an endless traveling belt, a deflector for the upper end of said elevator, said deflector having an inner edge extending across and close to the outer surface of said belt, and means for yieldingly holding said deflector in position to discharge the soil inwardly and underneath the elevator.

4. The improved deflector for the upper end of the elevator of an elevating grader, or of a ditching and grading machine, having springs and adjusting means for yieldingly holding the deflector in different positions to receive the soil from the endless belt of the elevator, substantially as shown and described.

5. A ditching and grading machine provided with an elevator, a pair of arms pivoted on the frame thereof and resting on the upper bearings of said elevator, and a spring-held deflector pivoted to and between said arms.

6. A ditching and grading machine provided with an elevator, a pair of arms supported upon the sides of the elevator and embracing the upper end thereof, and a

spring-held deflector pivoted upon and between the outer ends of said arms, disposed in position to support a moving load and yield under the weight thereof.

7. A ditching and grading machine provided with an elevator, a pair of arms adjustably supported upon the sides of the elevator and embracing the upper end thereof extending at an angle to the length of the same, and a spring-held deflector adjustably pivoted upon and between the outer ends of said arms.

8. A ditching and grading machine provided with an elevator, a pair of arms mounted upon the upper end of said elevator at opposite sides thereof, a deflector pivoted upon and between said arms, and springs and members having series of bolt holes for yieldingly and adjustably connecting said deflector with said arms.

9. The combination, with the belt conveyor of a ditching and grading machine, of a yieldingly supported deflector for the discharging end of said conveyor, carried by the frame thereof, adapted by gravity to discharge the soil downwardly and laterally, adapted also to yield under the weight of the load carried by it, as set forth.

10. The combination, with the belt conveyor of a ditching and grading machine, of a yieldingly and adjustably supported deflector for the discharging end of said conveyor, pivoted upon and carried by the frame thereof, adapted by gravity to discharge the soil downwardly and laterally, adapted also to yield under the weight of the load carried by it, as set forth.

11. In a ditching and grading machine provided with an elevator, interchangeable deflectors for the upper end of said elevator, at least one of which deflectors is yieldingly mounted, whereby the soil is discharged either toward or away from the side of the machine as the latter travels along.

Signed by me at Chicago, Illinois, this 18th day of December 1907.

WILLIAM H. MORENUS.

Witnesses:

SARAH LEWIS,

ALBERT JOHN SAUSER.