

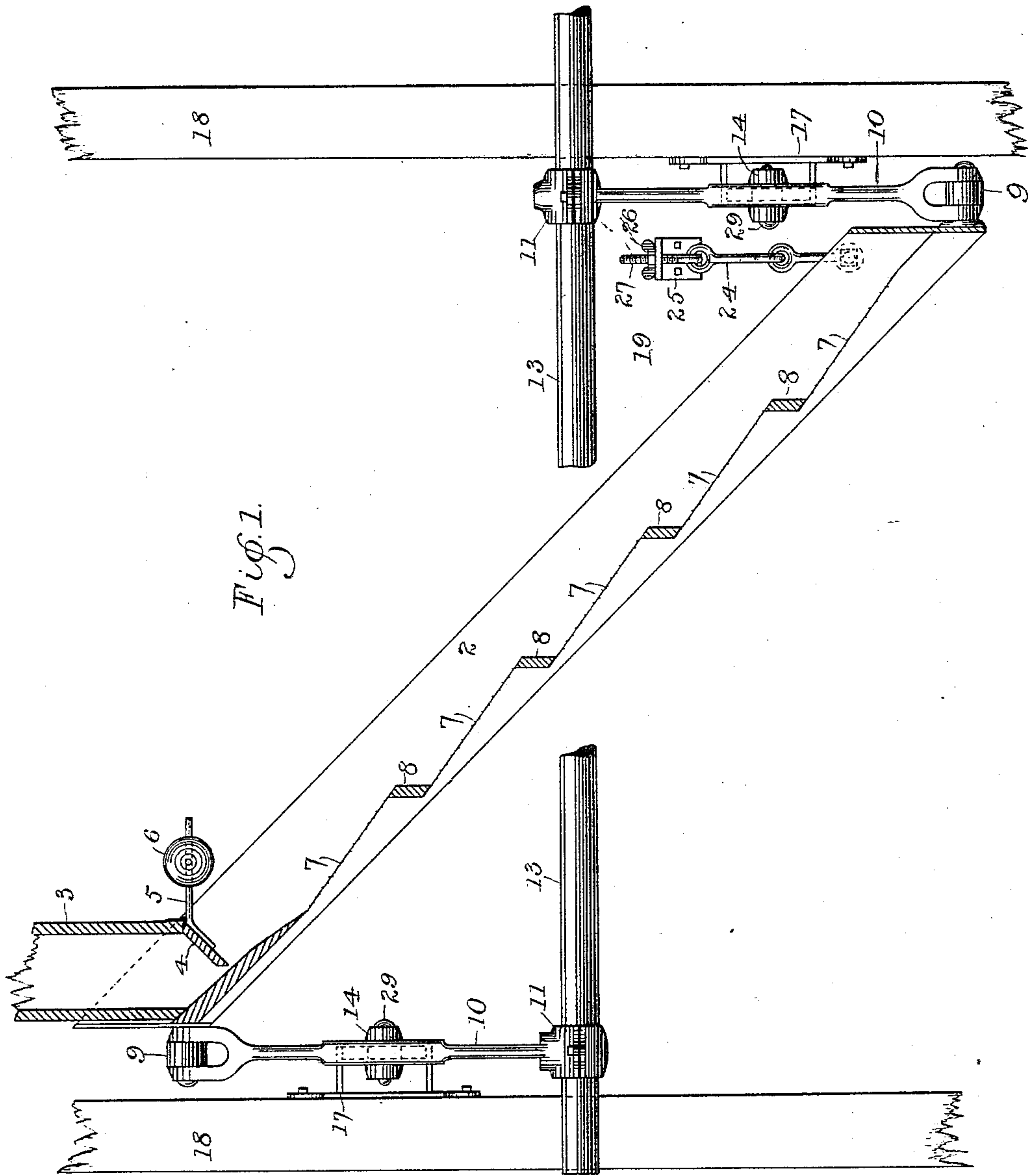
(No Model.)

2 Sheets—Sheet 1.

N. C. WESTERFIELD.  
SCALPER AND GRADER.

No. 458,246.

Patented Aug. 25, 1891.



Witnesses

A. Mae Wilson  
C. L. Caldwell.

Inventor

Newton C. Westerfield,  
per. Paul H. Merwin  
Attorneys.

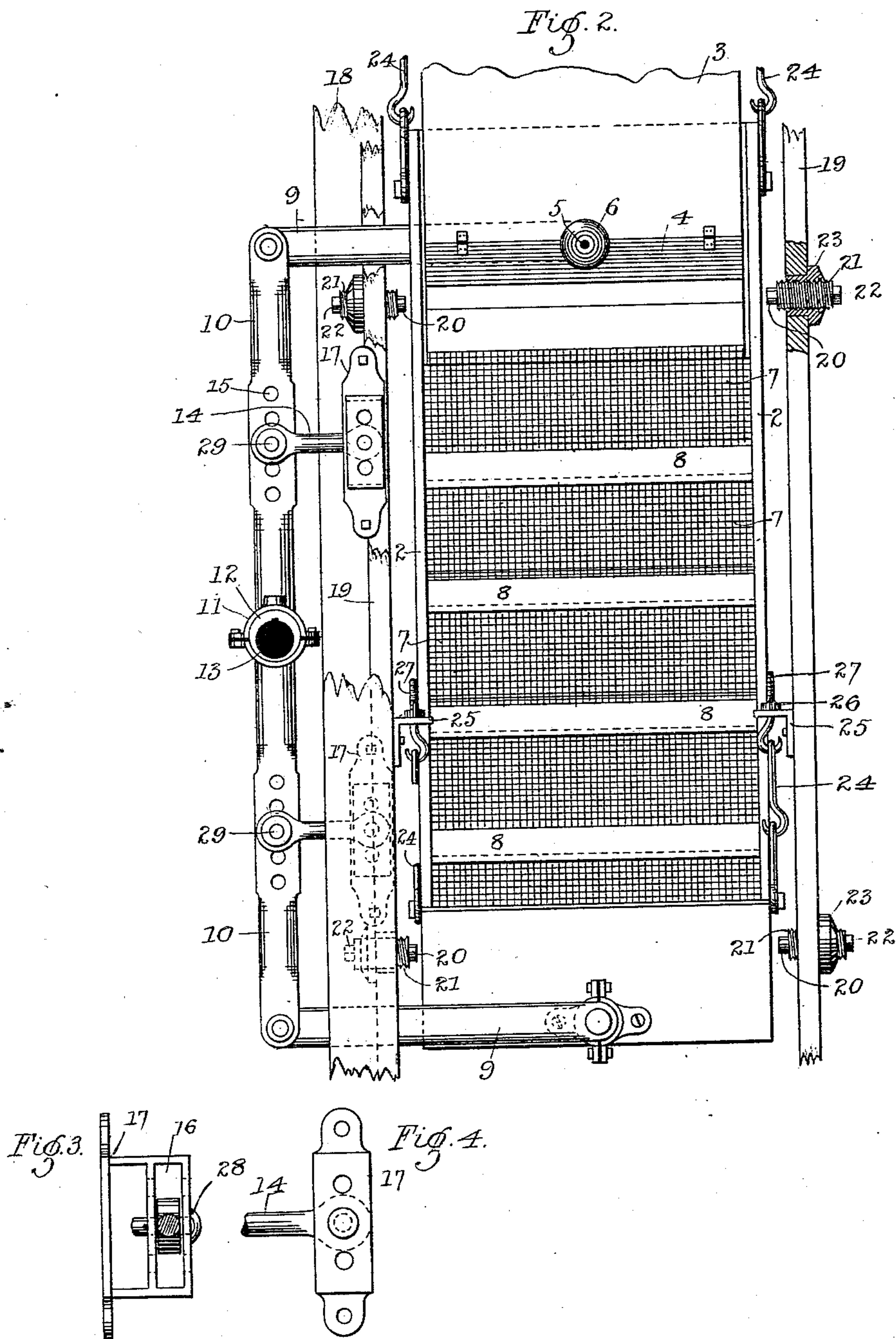
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2 Sheets—Sheet 2.

N. C. WESTERFIELD.  
SCALPER AND GRADER.

No. 458,246.

Patented Aug. 25, 1891.



Witnesses:-

A. Max Welch  
C. L. Caldwell.

Inventor:-

Norton C. Westerfield,  
per. Paul Merwin  
Attorneys.



# UNITED STATES PATENT OFFICE.

NEWTON C. WESTERFIELD, OF HASTINGS, MINNESOTA, ASSIGNOR TO HIMSELF, FREDERICK W. STAHLER, AND WARD B. DRUMMOND, OF SAME PLACE.

## SCALPER AND GRADER.

SPECIFICATION forming part of Letters Patent No. 458,246, dated August 25, 1891.

Application filed October 20, 1890. Serial No. 368,649. (No model.)

*To all whom it may concern:*

Be it known that I, NEWTON C. WESTERFIELD, of Hastings, Dakota county, Minnesota, have invented certain new and useful Improvements in Scalpers and Graders, of which the following is a specification.

My invention relates to improvements in screens used for the scalping and grading of milled stock and in the means for operating the same; and it consists in an improved attachment to the screen, by means of which both ends are vibrated equally and synchronously from a common shaft.

My invention further consists in the construction and combination hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a sectional side elevation of my improved screen, showing its construction and the manner of connecting the oscillating levers to it and to the main driving-shaft. Fig. 2 is a front elevation of the same, showing also the arrangement of the adjustable bumpers; and Figs. 3 and 4 are details of the bracket to which the adjustable fulcrum-arm of the oscillating lever is connected.

In the drawings, 2 represents the side of my improved screen; 3, the hopper for receiving and delivering the stock to the screen; 4, the gate fitted with an arm 5, on which is adjustably secured the counterbalancing-weight 6 in the ordinary manner. The body or netting of the screen is formed in sections 7, between each pair of which is interposed the step 8. This step is set at such an angle with the screen that the stock in descending from one section to the other will strike the lower section close to the foot of the step, thereby utilizing the entire screen surface. The stock in its descent is thus gently turned over in passing from one section to the other and is prevented from forming in cakes with fine middlings and flour on top to be carried over the tail of the screen.

In order to impart to the screen a smooth lateral vibratory motion without any vertical or irregular motion by which the stock would be thrown upward or outward from the screen

surface instead of being kept at all times in contact with it, I pivotally connect at each end of the sieve the arm 9, the outer end of which is pivoted to the rocker arm or lever 10, which is fitted at its other end with a bearing 11 to receive the eccentric 12, keyed upon the driving-shaft 13. The lever or rocker arm 10 has an adjustable fulcrum 14, one end of which is secured to the lever 10 by means of a pin 29, passed through one of a series of holes 15, and the other similarly secured within the slot 16 of the bracket 17, which is fixed to a post or other firm support 18 by means of the pin 28, passed through one of a vertical series of holes in the bracket and through an eye in the end of the fulcrum, the position of the fulcrum in the bracket being thus adjusted at will. The position of the shaft 13 is horizontal, that of the lever 10 approximately vertical, and that of the arm 9 horizontal.

In order to vary the throw of the arm 9 and adjust the motion it imparts to the screen, the fulcrum-arm 14 is adjusted up or down the lever and bracket. It will thus be seen that as the shaft 13 is driven a lateral motion is imparted to both ends of the screen at the same time without any irregular or vertical motion, which would tend to throw the stock off from it. The vibratory motion of the screen is sometimes not sufficient to prevent clogging of the meshes with the stock.

In order to impart a slight jar to the screen at each limit of its lateral movement, I arrange in the inclosing frame 19, on each side at each end of the screen, adjustable elastic bumpers. I prefer to form these of a plug of rubber 20, inserted in a socket in the end of a screw 21, which is provided with a squared outer end 22, to which a wrench may be employed for turning it. This screw is threaded into a block 23, secured to the frame 19. By turning the screw the bumper or plug is caused to approach toward or recede from the screen and to adjust the force of the impact of the screen upon it while in operation. This construction also serves to relieve the joints of the attachments from a part of the shock of the vibratory movement, and thus to diminish the wear upon them. While any suit-



able means may be employed for supporting or suspending the sieve, so as to permit its lateral movement, I prefer to use for this purpose one or more links 24, connected to each corner of the sieve and supported upon a bracket 25 by means of the hook 27, the stem of which is passed through the bracket and adjustably secured therein by means of the thumb-nut 26, so as to adjust the position of the sieve as desired.

I claim—

1. The combination, with an inclined screen, of a horizontal driving-shaft at one side and approximately midway of said screen, rocker arms or levers having at one end an eccentric or crank connection to said shaft and with their other ends linked, respectively, to the ends of the screen, and a fulcrum-arm for each of said levers, substantially as and for the purposes set forth.

2. The combination, with an inclined sieve or screen, of a horizontal driving-shaft at one side of said screen, vertical rocker arms or levers, one above and the other below said shaft, having an eccentric or crank connection with said shaft, arms or links pivotally connecting the other ends of said levers, respectively, with the ends of the screen, and adjustable fulcrum-arms for said levers, substantially as and for the purposes set forth.

3. The combination, with an inclined screen, of means for imparting a true lateral vibratory motion, comprising, in combination, a horizontal driving-shaft at one side and intermediate of the ends of the screen, eccentrics upon said shaft approximately opposite the ends of the screen, vertical levers journaled at one end upon said eccentrics and extending, respectively, above and below said shaft, arms or links pivotally connecting the other

ends of said levers to the adjacent ends of the screen, and fulcrum-arms for said levers adjustably pivoted to fixed supports and to said levers, whereby true and synchronous vibratory movement is imparted to each end of the screen by the turning of said shaft and the length of said movement accurately adjusted at will, substantially as and for the purposes set forth.

4. The combination, with an inclined screen, of adjustable elastic bumpers secured to the inclosing frame adjacent to each side of the screen at either end, a horizontal driving-shaft at one side of said screen and midway thereof, vertical rocker arms or levers, one above and the other below said shaft, journaled upon eccentrics on said shaft, arms or links pivotally connecting the other ends of said levers with the ends of the screen, and adjustable fulcrum-arms pivoted to said levers and to fixed supports intermediate of said levers and said screen, substantially as and for the purposes set forth.

5. Means for imparting synchronous vibrating movement to both ends of a screen, comprising, in combination, rocker arms or levers connected at one end, respectively, to the ends of the screen, a driving-shaft adjacent to the other ends of the levers, intermediate fulcrums for said levers, and attachments upon said shaft engaging said levers and vibrating the same with the rotation of the shaft, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 8th day of October, 1890.

NEWTON C. WESTERFIELD.

In presence of—  
WM. HODGSON,  
ED STEUDT.