

G. ANDERSON.  
THRESHING MACHINE.

APPLICATION FILED MAY 26, 1903.

2 SHEETS—SHEET 1.

Fig. 1.

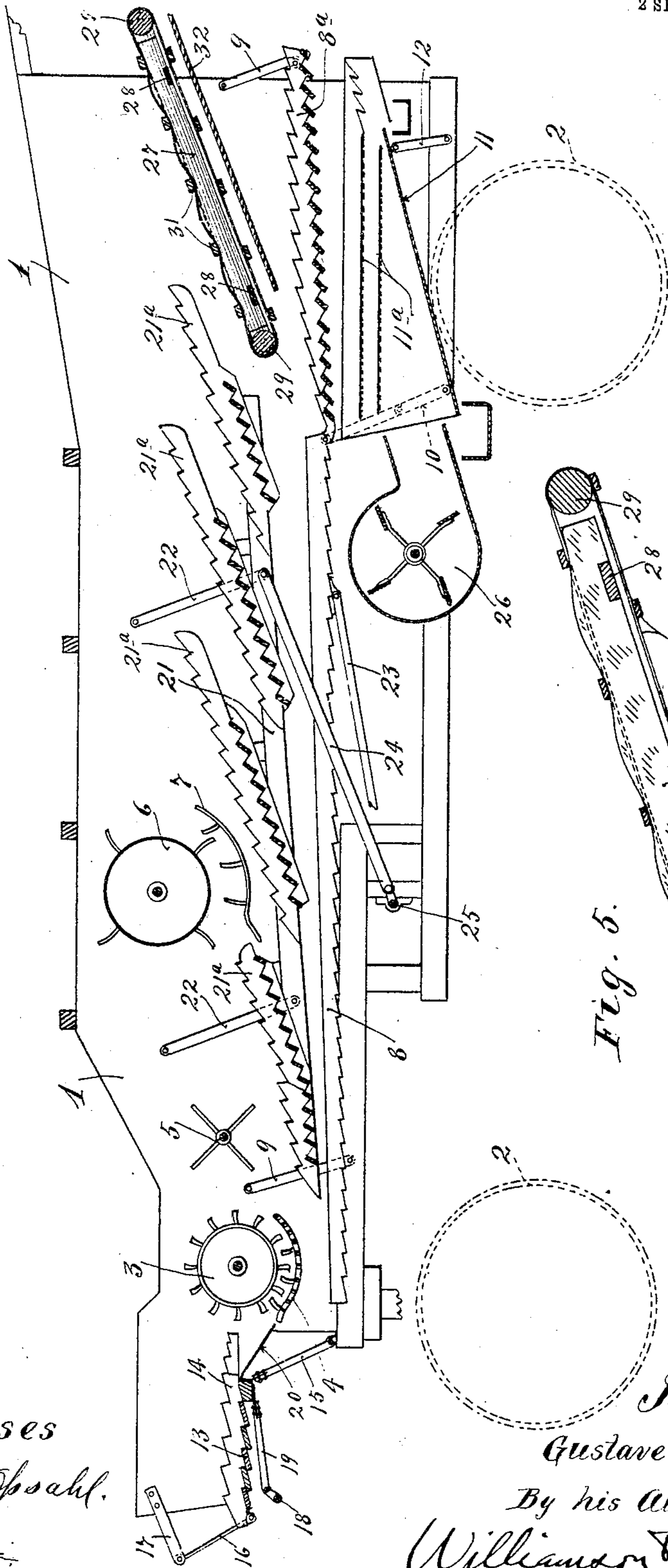
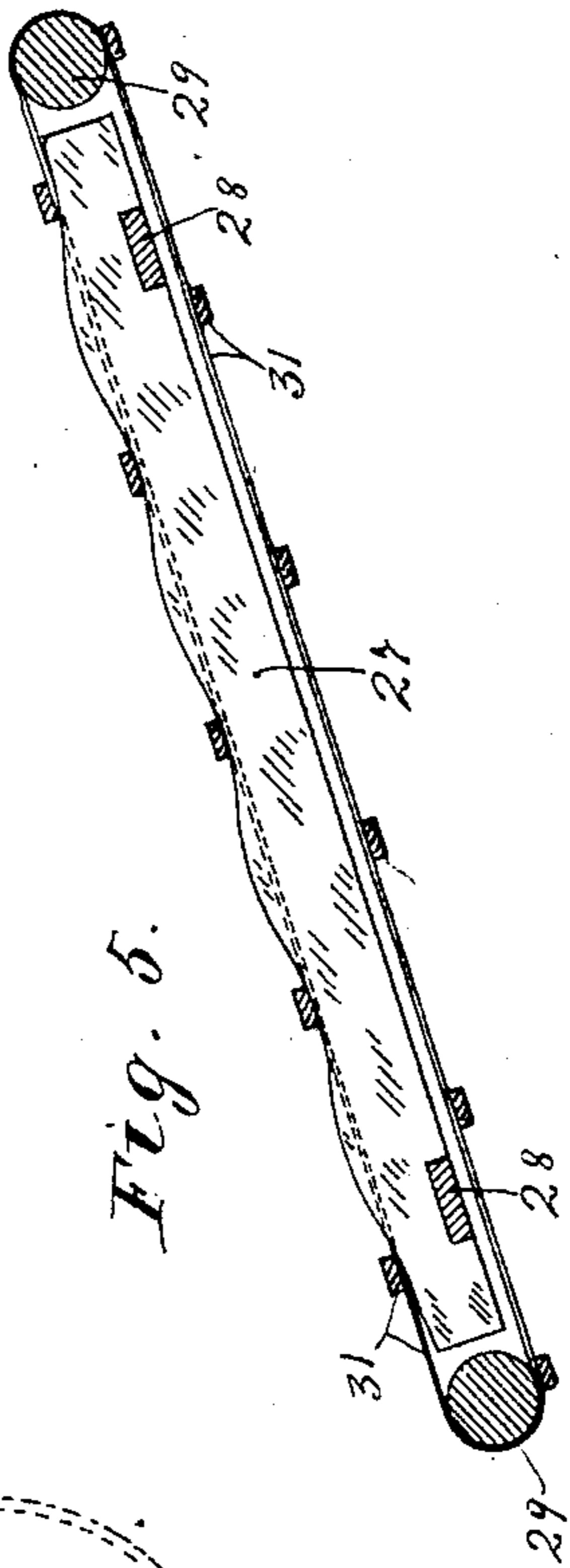


Fig. 5.



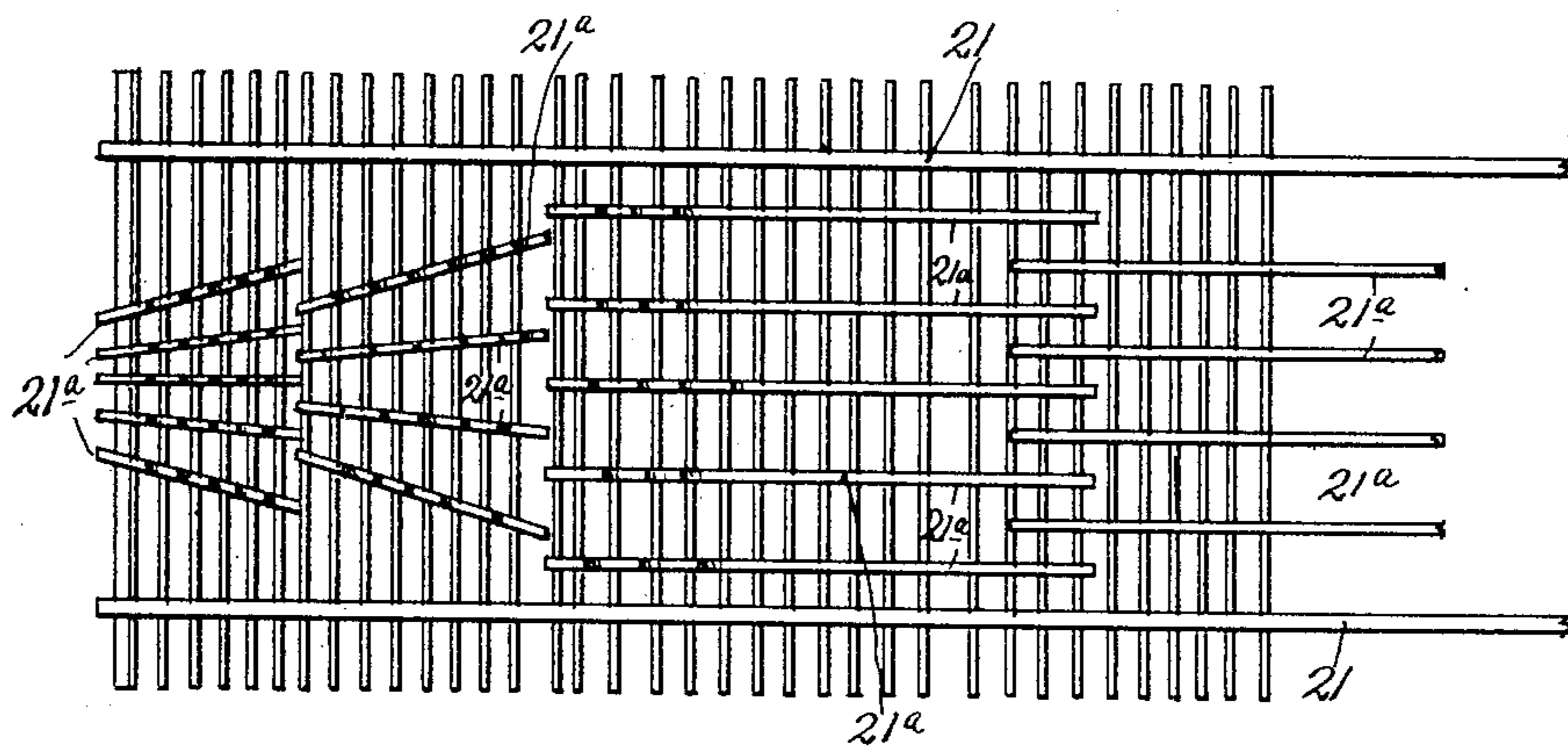
Witnesses  
A. H. Opsahl.  
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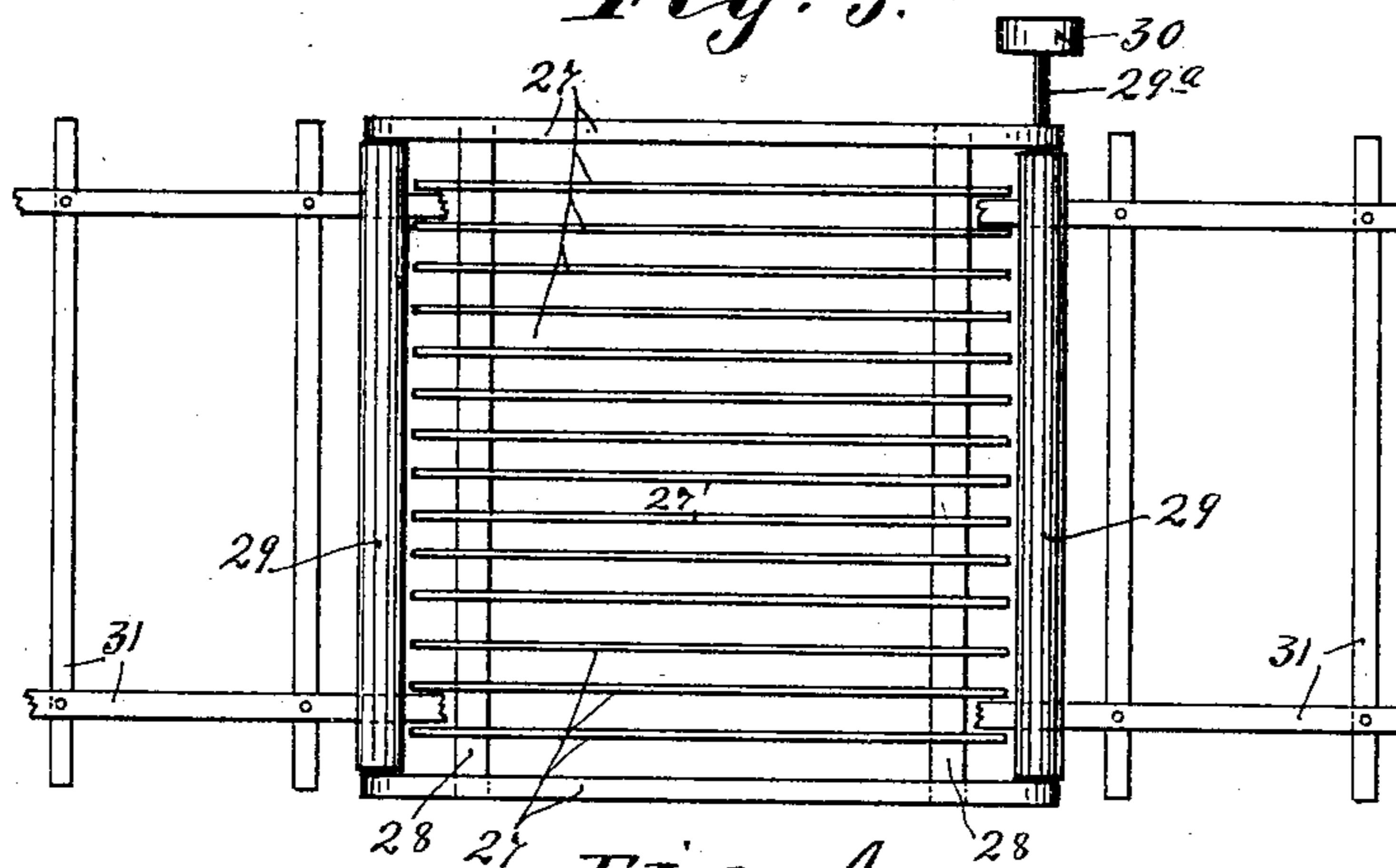
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2 SHEETS—SHEET 2.

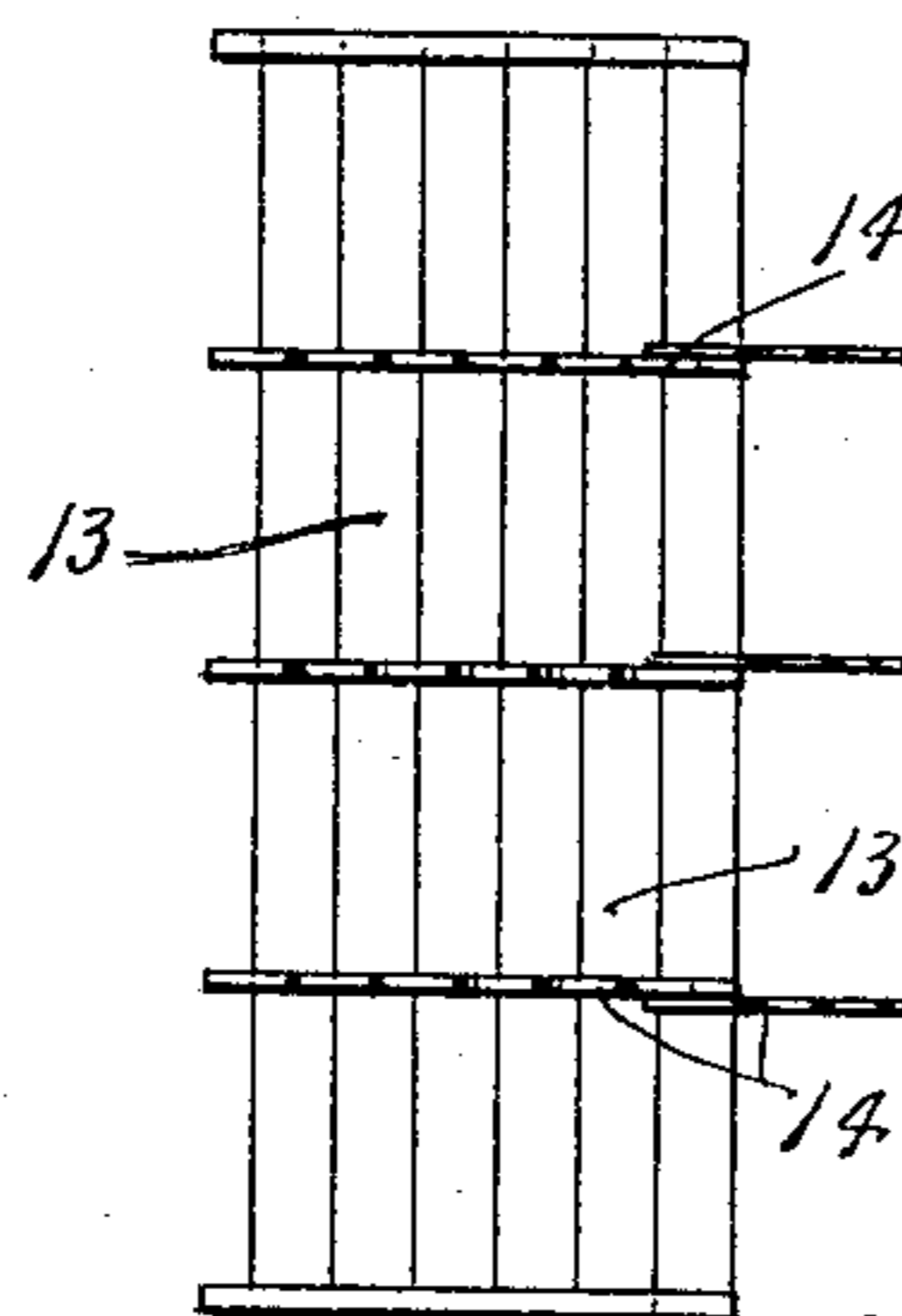
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

GUSTAVE ANDERSON, OF WELLS, MINNESOTA.

## THRESHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 779,458, dated January 10, 1905.

Application filed May 26, 1903. Serial No. 158,766.

*To all whom it may concern:*

Be it known that I, GUSTAVE ANDERSON, a citizen of the United States, residing at Wells, in the county of Faribault and State of Minnesota, have invented certain new and useful Improvements in Threshing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to threshing-machines, and has for its object to improve the same in the several particulars hereinafter noted.

To such ends the invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Figure 1 is a longitudinal central section of the improved threshing-machine, some parts being shown in diagram and some only by dotted lines. Fig. 2 is a plan view of the "fish-back" shaker, some parts being broken away. Fig. 3 is a plan view of the straw-delivery conveyer, showing the ends of the conveying-belt disconnected and straightened out. Fig. 4 is a plan view of the vibrating feed-table which delivers to the threshing-cylinder and concave, and Fig. 5 is an enlarged section showing the straw-delivery conveyer in longitudinal vertical section.

In Fig. 1 the numeral 1 indicates the case, and the numeral 2 the wheels, of the thresher, the wheels being shown by dotted lines.

The numeral 3 indicates an ordinary threshing-cylinder, and the numeral 4 its coöperating toothed concave.

The numeral 5 indicates a rotary beater located at the rear of the cylinder 3.

The numeral 6 indicates a secondary threshing-cylinder, and the numeral 7 its coöperating toothed concave, which parts are located at the rear of the beater.

The numeral 8 indicates the vibrating grain-pan, which extends from front to rear of the machine and is provided with a pivoted rear end section 8<sup>a</sup>. The grain-pan is shown as suspended by links 9 and a lever 10, the latter

of which is indicated by dotted lines. The said lever 10 (in fact, there are two such levers, one on each side of the machine) is pivotally fulcrumed at its intermediate portion and connected at its lower end to the sieve-shoe 11, which shoe is shown as supported at its rear end by links 12, of which but one is shown.

The unthreshed grain is fed to the cylinder 3 and concave 4 by a vibrating feed-board 13, having serrated longitudinally-extended bars or ribs 14, the rear ends of which project beyond the serrated bottom of the said board and terminate in close proximity to the said cylinder. As shown, the said feed-table is supported from the case 1 by depending links 15, attached to the rear edge thereof, and by suspending-links 16, attached to the receiving edge thereof, and to brackets 17 on the sides of the case. In the drawings but one link 15 and one link 16 are shown. A vibrating motion may be imparted to the feed-table 13 from a crank-shaft 18, suitably mounted on the case 1 and connected to said table by a pitman 19. A short inclined feed-board 20 is secured to the inner edge of the feed-table 13 and terminates close to the forward edge of the concave 4. The grain and straw from the cylinder 3 and concave 4 is delivered onto the first fish-back section of a vibrating shaker 21, the frame of which is supported from the case by links 22. Vibrating motions are imparted to the feed-pan 8 and shaker 21, respectively, through pitmen 23 and 24, both of which are driven by a crank-shaft 25 suitably mounted in the under framework of the case 1.

The numeral 26 indicates a fan which delivers blasts onto the screens 11<sup>a</sup> of the shoe 11.

The straw delivered from the last fish-back section of the shaker 21 is dropped onto an endless conveyer of novel construction, which in its best form comprises as follows: An inclined frame made up of longitudinally-extended parallel bars 27, set edgewise and tied together by cross-bars 28, is rigidly secured to the sides of the case 1 in the position indicated in Fig. 1. The bars 27 at the extreme sides of the frame are heavier than the intermediate bars and are projected beyond

the ends of the same, and in the said projecting ends thereof are journaled rollers 29, one of which is provided with a projecting shaft 29<sup>a</sup> and a pulley 30, over which a power-driven belt (not shown) will run to cause the said roller to act as a driving member for the endless conveyer, presently to be noted. The upper surfaces of all of the bars 27 are undulated, as best shown in Fig. 5, but also in Fig. 1, for an important purpose, which will presently appear. Working over the rollers 29 and over the undulated bars 27 is an endless slat-and-belt conveyer 31, the belts of which are drawn taut, so as to give the driving members of the said rollers the proper frictional contact therewith.

It should have been noted that the serrated bars of the first fish-back section of the shaker 21 diverge rearwardly, so that in acting on the straw they will have a tendency to spread the same laterally. Running motions of the several parts of the machine may be imparted in the usual way, not necessary for the purposes of this case to further consider.

The unthreshed grain delivered to the primary threshing-cylinder 3 and concave 4 by the vibrating feed-table 13 will be held back with a sort of a stripping action by the projecting rear ends of the serrated bars 14 of the said table. In other words, the grain will not be fed to the cylinder in piles or irregular quantities, but part thereof will be held back by the said projecting ends of the bars, while some thereof is passing between the bars. The feed-supply of the grain to the threshing-cylinder and concave is in this way evened up and rendered regular and constant. The straw and grain passing from the primary cylinder and concave will pass onto the diverging serrated bars of the first section of the shaker and will also be subjected more or less to the agitating action of the beater 4, which tends to shake out the threshed grain from the straw.

From the first section of the shaker the straw will be passed through the secondary cylinder 6 and concave 7, which will loosen up and separate the grain from the straw and complete the threshing of any grain which may have passed unthreshed through the primary cylinder and concave.

From the secondary cylinder and concave the straw passes onto the second section of the shaker 21, from thence to the third, thence to the fourth, and from the fourth section onto the endless conveyer at the rear end of the machine. In passing from the bars 21<sup>a</sup>

of the successive sections of the shaker the straw is successively dropped, with a tendency to loosen up and precipitate whatever grain may be commingled with the straw. The precipitated grain of course falls onto the feed-pan 8 and is fed rearward to the open-work pivoted section 8<sup>a</sup> thereof, through which it passes onto sieves 11<sup>a</sup> of the shoe 11, from whence it is conducted and handled in the usual way. The straw passing onto the endless conveyer 31 is discharged by said conveyer (not shown) or at the rear end of the machine in case a stacker is not provided. The transverse bars of the conveyer 31 in passing over the undulations of the bars or skids 27 rise and fall, so that they shake up the straw and insure the dropping of such of the grain as may still be carried by the straw onto a forwardly-inclined deck 32, secured to the sides of the case below the said conveyer in position to discharge the grain onto the section 8<sup>a</sup> of the grain-pan.

It will of course be understood that the machine above described is capable of modification within the scope of my invention as herein set forth and claimed.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. In a threshing-machine, the combination with laterally-spaced longitudinally-extended bars having undulated upper edges, of an endless conveyer working over said bars, substantially as described.

2. In a threshing-machine, the combination with laterally-spaced longitudinally-extended bars 27 and rollers 29 journaled in the projecting ends of the outside members of said bars, said bars having undulated upper edges, of the endless slat-and-belt conveyer 31 working over said rollers, and over the undulated upper surfaces of said bars 27, substantially as described.

3. In a threshing-machine, the combination with a vibrating shaker having inclined serrated feed-bars, of a conveyer receiving from said shaker, and comprising a plurality of laterally-spaced longitudinally-extended bars having undulated upper edges, and an endless slat-and-belt conveyer working over the said bars and receiving working vibrations therefrom, substantially as described.

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

GUSTAVE ANDERSON.

Witnesses:

D. A. ODELL,

G. H. SIMON.