

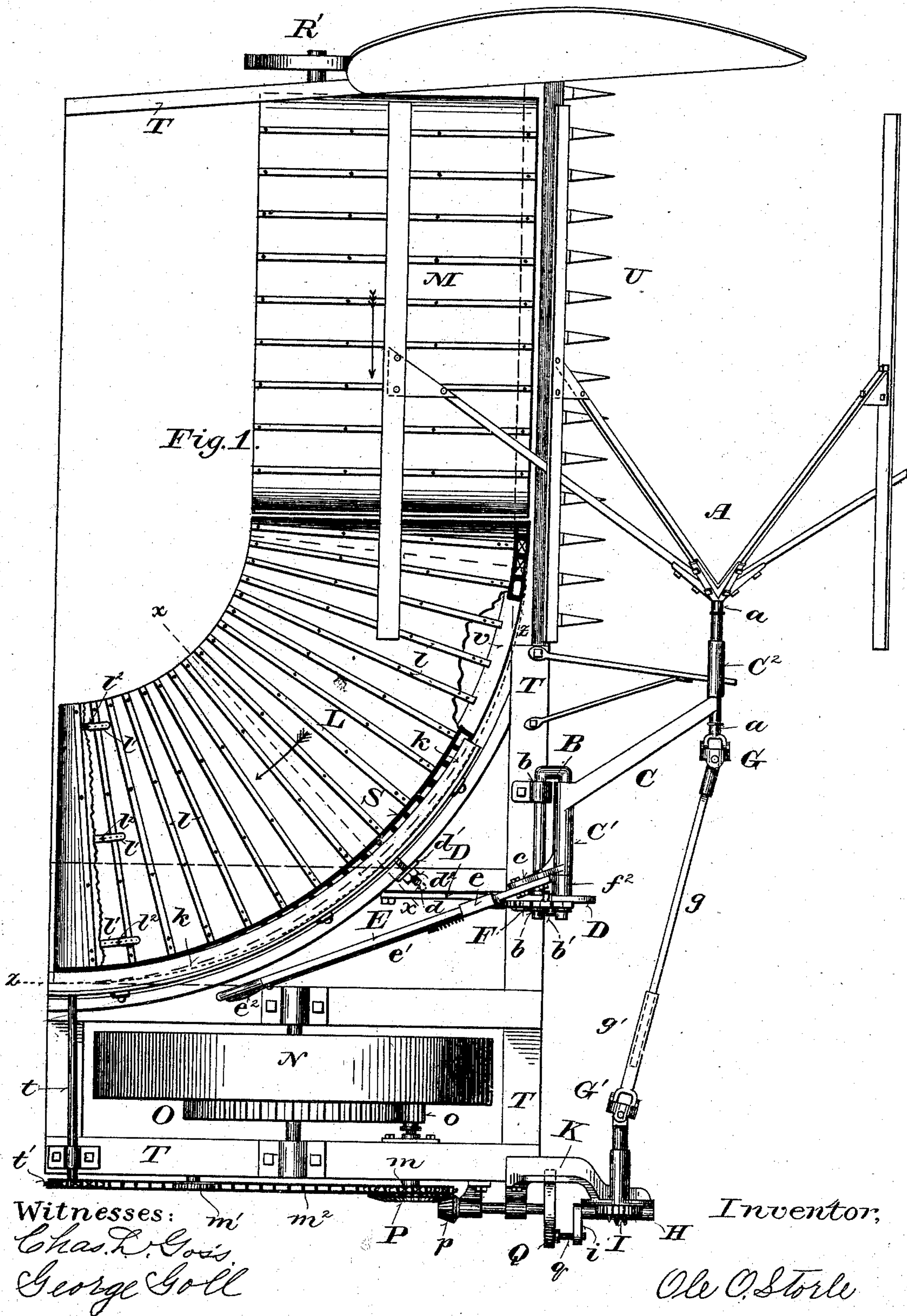
(No Model.)

O. O. STORLE.  
REAPER.

3 Sheets—Sheet 1.

No. 502,328.

Patented Aug. 1, 1893.



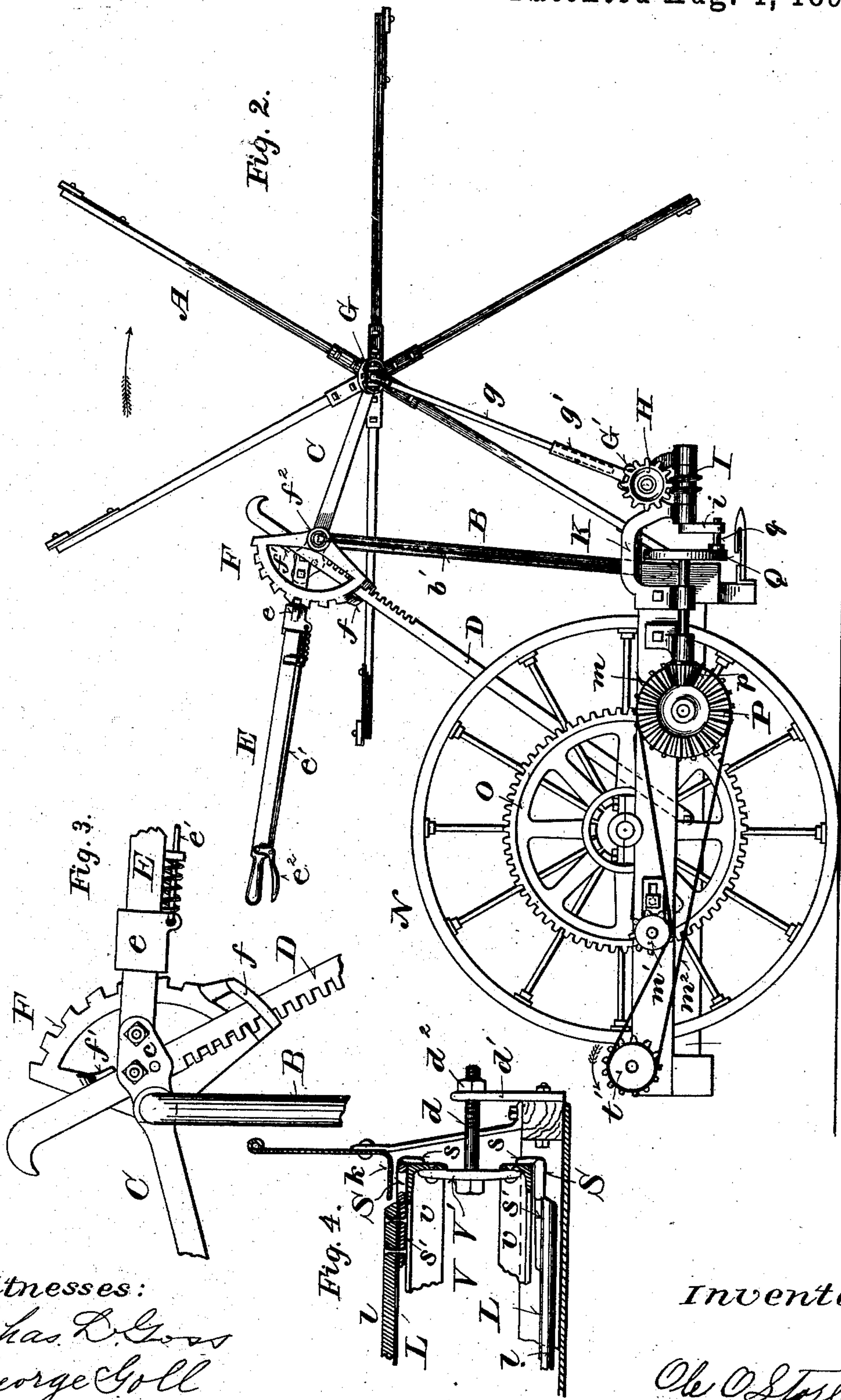
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O. O. STORLE.  
REAPER.

3 Sheets—Sheet 2.

No. 502,328.

Patented Aug. 1, 1893.



Witnesses:  
Chas. D. Gross  
George Goll

Inventor,  
O. O. Storle



(No Model.)

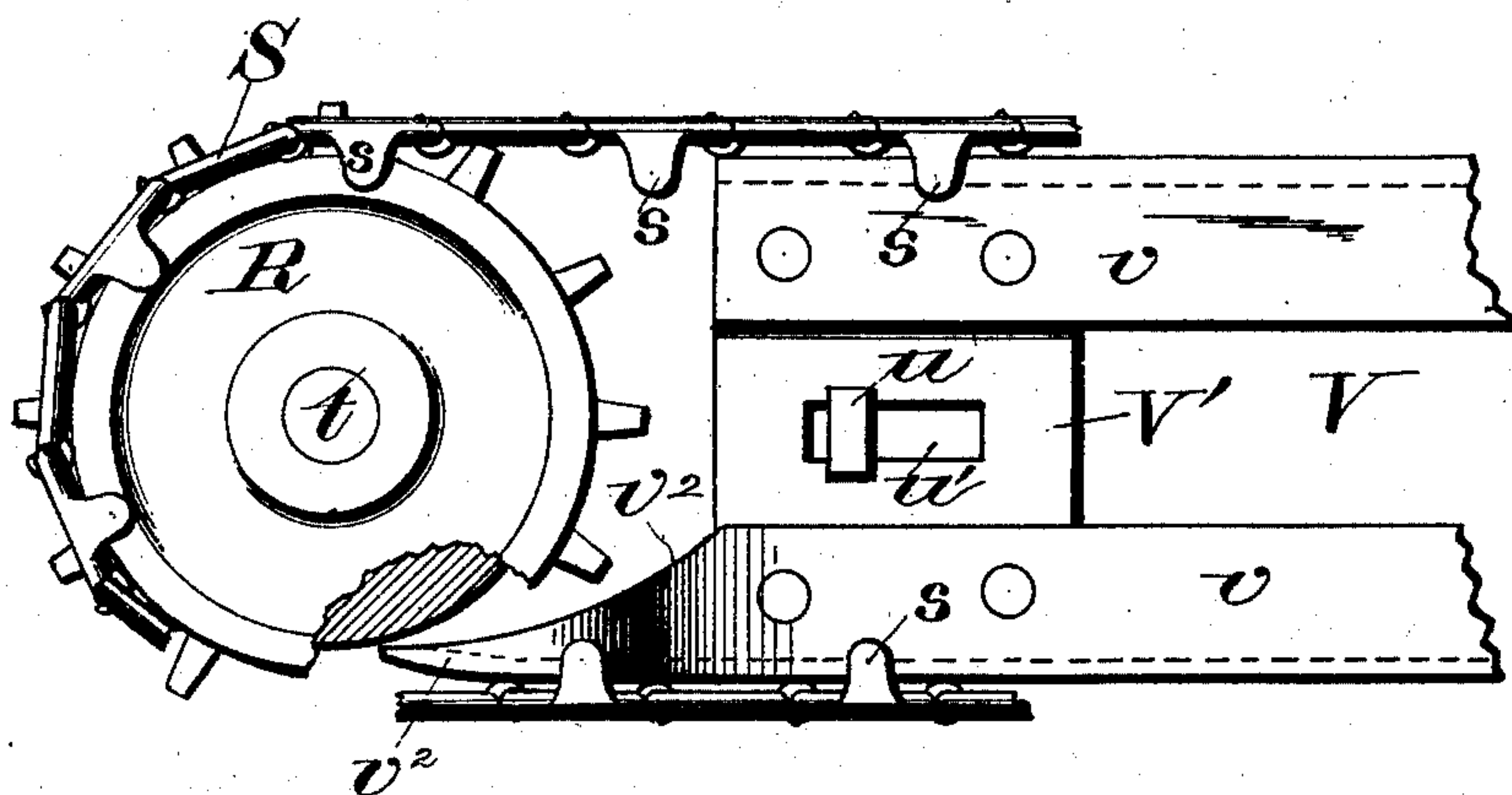
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O. O. STORLE.  
REAPER.

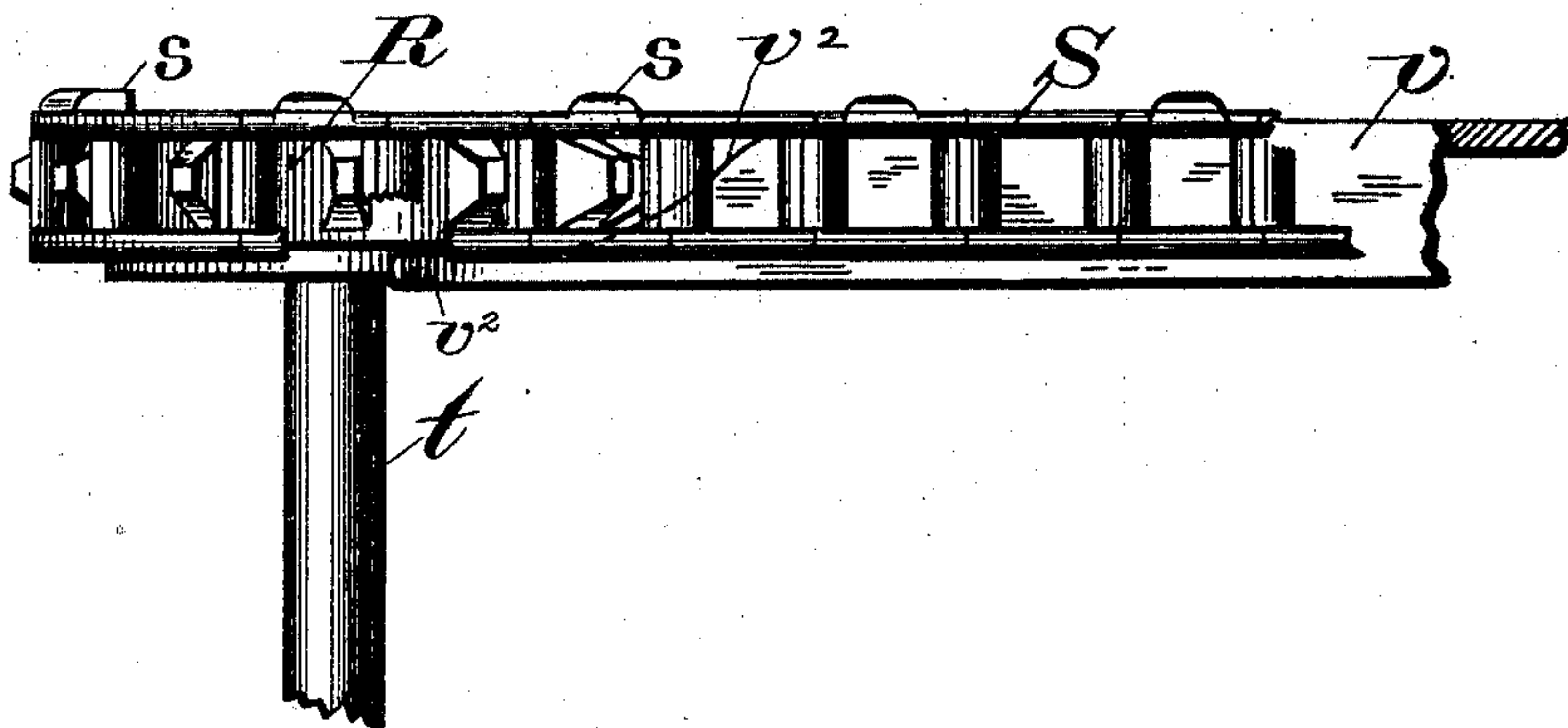
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*Fig. 5.*



*Fig. 6.*



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Inventor,  
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# UNITED STATES PATENT OFFICE.

OLE O. STORLE, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE WILLIAM DEERING & COMPANY, OF CHICAGO, ILLINOIS.

## REAPER.

SPECIFICATION forming part of Letters Patent No. 502,328, dated August 1, 1893.

Application filed May 25, 1886. Serial No. 203,258. (No model.)

*To all whom it may concern:*

Be it known that I, OLE O. STORLE, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Reapers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains 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.

The main objects of my invention are to provide improved means for driving and guiding a curved conveyer on the grain platform, and for tightening said conveyer and keeping the same tight in operation.

It consists essentially of a driving chain attached to the conveyer, and an adjustable guide for said chain; and in certain details of construction hereinafter described and claimed.

In the accompanying drawings like letters designate the same or similar parts in the several views.

Figure 1 is a plan view of a reaper embodying my improvements. Fig. 2 is an end elevation of the same. Fig. 3 is a detail view on an enlarged scale of a portion of the reel support. Fig. 4 is a vertical section, on the line  $x x$  Fig. 1, of the curved conveyer guide, showing the adjusting device and parts immediately therewith associated. Fig. 5 is a side elevation of the rear end of the curved conveyer guide and the adjacent sprocket wheel, and Fig. 6 is a view of the under side of the same.

T represents the frame of the machine mounted in the usual way at opposite ends upon the bull wheel N and divider wheel R'.

A is the reel of the ordinary or any suitable form and construction provided with the journal  $a$ .

B is the reel standard, preferably formed of tubular iron, bent at right angles at each end in the same direction into horizontal arms and pivoted at the lower end to the frame T or any convenient part of the ma-

chine by means of brackets or boxes  $b b$ , so as to be swung in a vertical plane at right angles to the length of the machine. The upper horizontal arm of said standard B supports and forms a bearing for the sleeve C' of the oblique arm C at the opposite end of which is formed a parallel sleeve C<sup>2</sup> to receive and furnish a bearing for the reel journal  $a$ . The sleeve C' is provided with an ear  $c$ , to which is bolted the actuating lever E. By forming three or more bolt holes in said ear  $c$  the inclination of the lever may be changed with reference to arm C. Upon said upper arm of standard B, adjacent to lever E, is mounted hub  $f^2$  of the toothed sector F, which is provided with a loop  $f$  and lug  $f'$ . A brace D, pivoted at its lower end to the frame T or some convenient part of the machine and notched on its under edge adjacent to said sector to engage with loop  $f$ , passes through said loop  $f$ , over the hub  $f^2$  and under the lug  $f'$ , and thereby braces and secures the standard B in any desired position. The standard B is retained in its bearings  $b b$  and the sleeve C' and sector F upon its upper horizontal arm by the rod  $b'$  connecting and secured in the ends of the horizontal arms of said standard B.

The lever E is provided with a spring actuated catch  $e$  connected by the rod  $e'$  with the handle  $e^2$  pivoted to said lever, by means of which the arm C may be swung about the upper arm on standard B and the reel raised or lowered, advanced or withdrawn, and secured in any desired position.

The weight of the reel A, transmitted through the catch  $e$  to sector F, retains the front or lower edge of the loop  $f$  in engagement with the notches in brace D. Without withdrawing catch  $e$  from engagement with sector F, the latter may be disengaged from the notched brace D by depressing lever E sufficiently to overcome the weight of the reel, which may then be advanced or withdrawn by simply carrying said lever and standard B forward or back. When the catch  $e$  is unlocked, the sector F drops by its own weight out of engagement with the notches in brace D, and the reel may be both raised or lowered



and advanced or withdrawn at the same time by one hand grasping said lever.

Q is the crank disk provided with the crank pin  $q$  and driven from the main driving gear O through the intermediate pinion  $o$  and bevel gear P  $p$  in the usual way. In a bracket K secured to frame T are formed bearings for the intermeshing worm I and worm wheel H. The worm I is provided with a crank arm  $i$  which is connected with and operated by the same crank pin  $q$  which actuates the sickle. To the inner end of the journal of worm gear H is coupled by a universal joint G' a shaft  $g'$  and to the outer end of the reel journal  $a$  is coupled by a similar joint G, a square rod  $g$  which telescopes into a similarly shaped socket in shaft  $g'$ . A self adjusting connection is thus established between the driving mechanism and the reel A, the position of which may be changed as before described without interfering with its rotation. It is obvious that the same advantages will be attained by the use of the adjustable reel support and jointed telescoping driving rod, whatever means may be employed for rotating said rod.

M is an endless canvas belt or apron mounted just back of the finger bar U upon rollers in the usual manner and arranged to receive the grain as it is cut and convey the same to the curved conveyer L by which it is received and carried in a curve to the rear of the machine and deposited upon the ground in a swath at right angles to the position in which it falls, or delivered to a binder attached to the machine at that point. I form the conveyer L of canvas, or any other suitable material, to the outer side of which are secured slats  $l l$ , and mount the same upon conical or frustum shaped rollers adjacent to the larger ends of which are mounted sprocket wheels R in the manner described in an application for United States Letters Patent filed by me December 7, 1885, and serially numbered 184,839.

S is a chain belt secured by means of ears  $s' s'$  formed thereon to the adjacent slats  $l l$ , and mounted upon the sprocket wheels R. To support the chain S and retain the conveyer L in place, I provide a curved guide V, preferably formed of angle-bars  $v v$  curved to correspond with the general outline of the front and outer edge of said conveyer L, and secured together and in position by tie plates V' V' riveted thereto, as seen in Figs. 4 and 5.

The chain S is provided at intervals with right angled ears  $s s$ , which overlap the outer edges of the angle bars  $v v$ , as seen in Fig. 4, and retain the chain thereon causing it to travel in the curve described by the guide V. A guard supported a little above the upper angle bar  $v$  prevents the upper section of the chain S from jumping up sufficiently to disengage the ears  $s s$  from said angle bar. The guide V is rigidly secured at its front end to the finger bar or any convenient part of the machine and at the other end it is secured to the frame by a pin or bolt  $u$  passing

through a slot  $u'$  formed in the adjacent tie plate V' so as to be capable of a slight longitudinal movement. An adjusting bolt  $d$  is passed outwardly through a perforation in the middle tie plate V' of guide V, and through a perforated ear or bracket  $d'$  secured to some convenient part of the machine, and is threaded to receive the nut  $d^2$  outside of said bracket  $d'$ . By turning up the nut  $d^2$  the guide V may be drawn out at the center, as indicated by the dotted line  $z z$ , Fig. 1, thereby lengthening the circuit made by the chain and taking up the slack therein. When the limit of this adjustment is reached, the bolt  $d$  may be released, a link removed from chain S and the canvas drawn together by means of straps  $l' l'$  and buckles  $l^2 l^2$  secured to and joining the edges of said canvas. The angle-bars  $v v$  are formed with projections  $v^2$  as shown in Figs. 5 and 6, which extend between said chain S and sprocket wheels R and terminate at one side of the sprockets just inside of the peripheries of the wheels, thereby preventing the links of said chain from clinging to said sprockets and following said wheels beyond the proper points of clearance.

The shaft  $t$  of the rear conical roller is extended, as seen in Fig. 1, and provided at the end with the sprocket wheel  $t'$  which is connected by a chain belt  $m^2$  with the sprocket wheel  $m$  driven by the gear O and pinion  $o$ . The belt  $m^2$  may be tightened by the idler  $m'$  under which it passes, as seen in Fig. 2.

The reel mechanism shown and described is not claimed herein, but forms the subject of a divisional application filed on the 28th day of March, 1893, under the Serial No. 468,004.

I claim—

1. The combination in a reaper of a curved conveyer L, chain S attached thereto and provided with ears  $s s$  which engage with guide V and retain said conveyer in place, and the adjustable curved guide V arranged to take the slack out of said chain, substantially as and for the purposes set forth.

2. The combination of the curved conveyer L, chain S attached to said conveyer and provided with ears  $s s$  which engage with the curved guide V and retain said conveyer in place, curved guide V fixed at one end to the machine and attached thereto at the other end so as to be capable of longitudinal movement, adjusting bolt  $d$  secured to said guide at an intermediate point and to a fixed ear or bracket  $d'$ , substantially as and for the purposes set forth.

3. The combination with an endless conveyer, a driving chain-belt attached thereto, and sprocket wheels carrying said chain belt, of a guide upon which said chain belt rides between said sprocket wheels, said guide being provided with a projection which terminates at the face of one of said sprocket wheels close to the base of the sprockets at a point where the chain belt leaves the periphery of



said sprocket wheel, substantially as and for the purposes set forth.

4. The combination of the conveyer L, chain  
Sattached thereto and mounted upon sprocket  
5 wheels R, and guide V provided with a pro-  
jection  $v^2$ , substantially as and for the pur-  
poses set forth.

In testimony that I claim the foregoing as  
my own I affix my signature in presence of two  
witnesses.

OLE O. STORLE.

Witnesses:

GEORGE GOLL,  
CHAS. L. GOSS.