

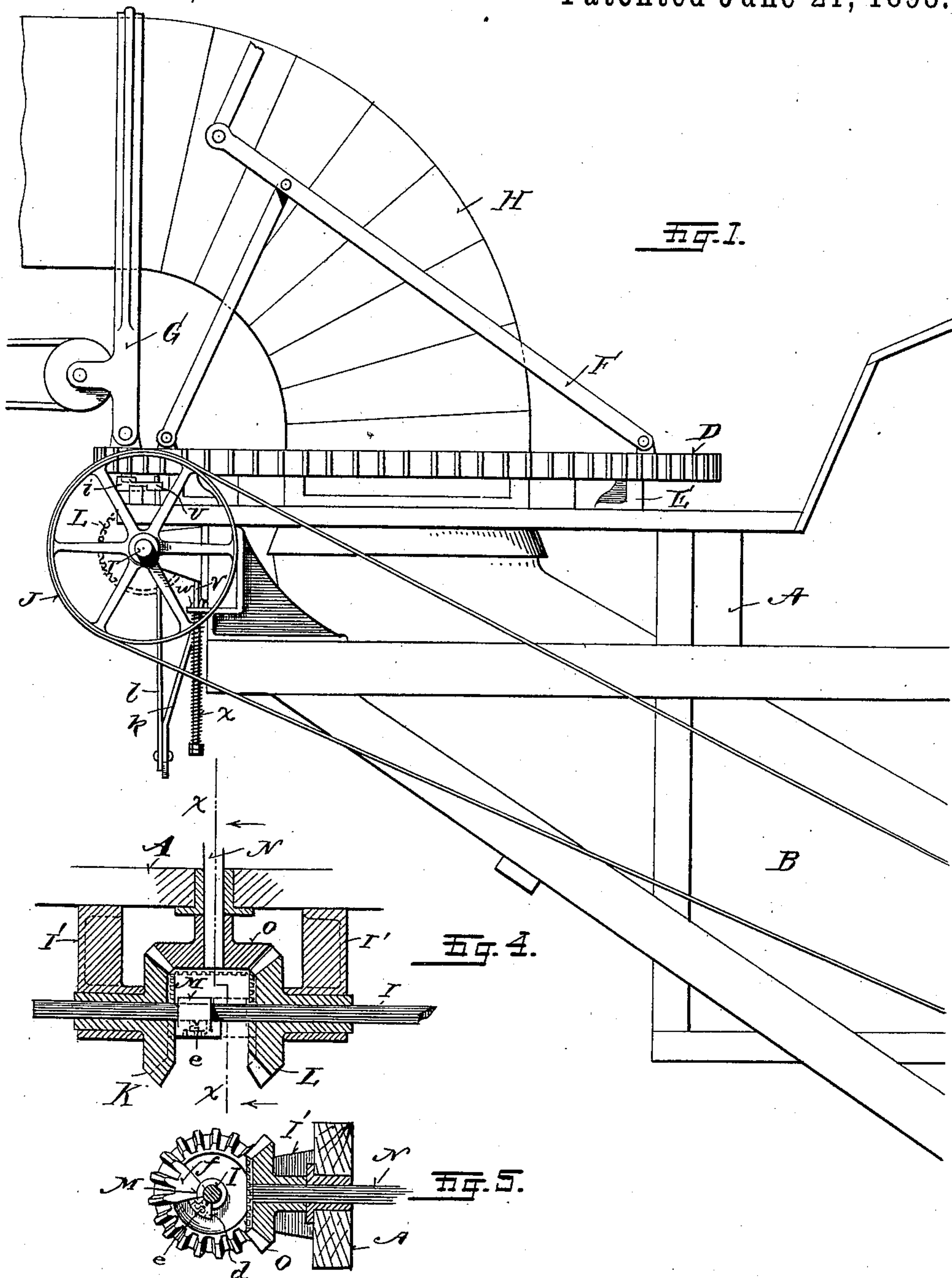
(No Model.)

2 Sheets—Sheet 1.

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SWINGING STRAW STACKER.

No. 606,059.

Patented June 21, 1898.



Witnesses  
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Edward Huber and  
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By their Attorneys,  
Toussain Whittemore,

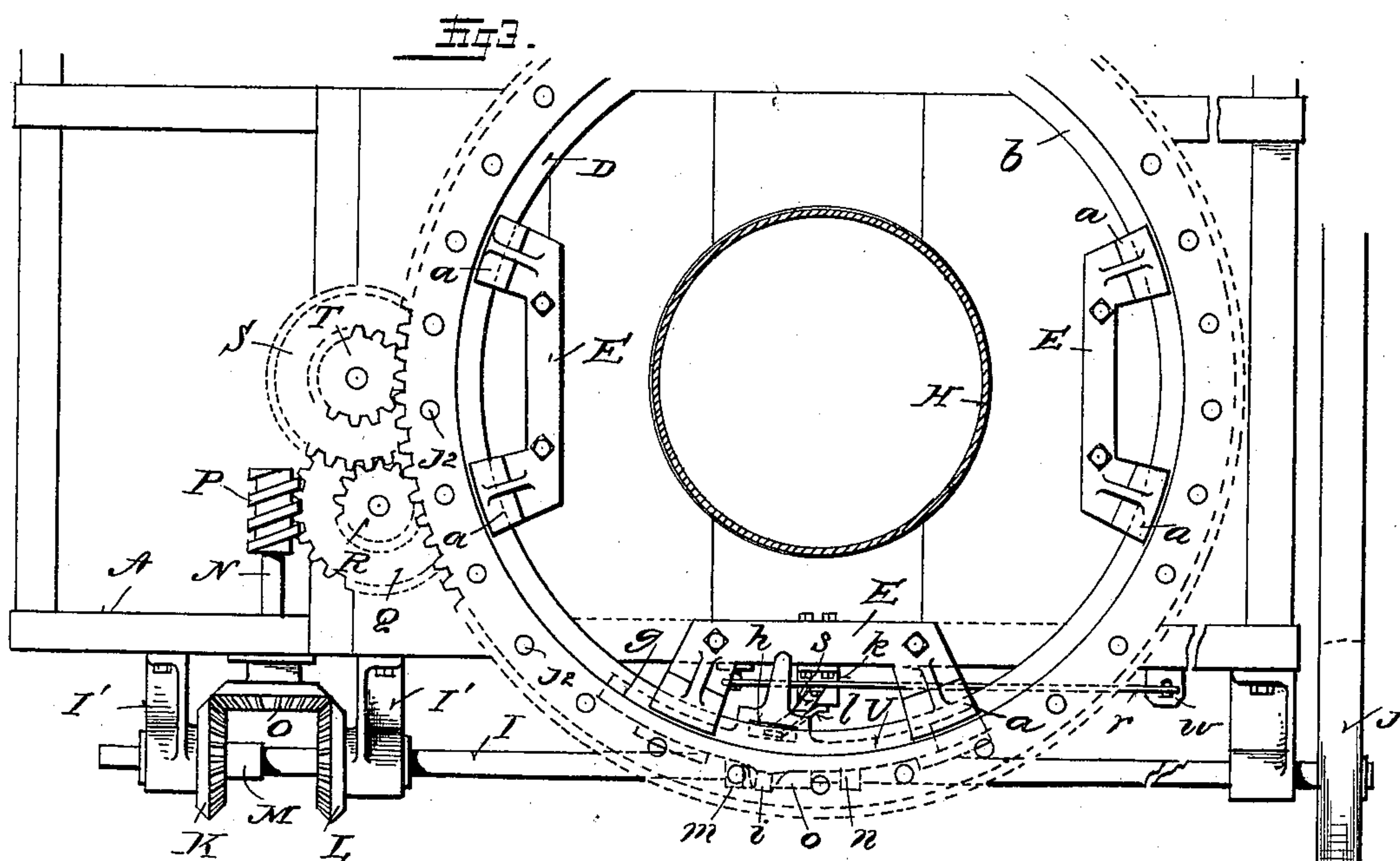
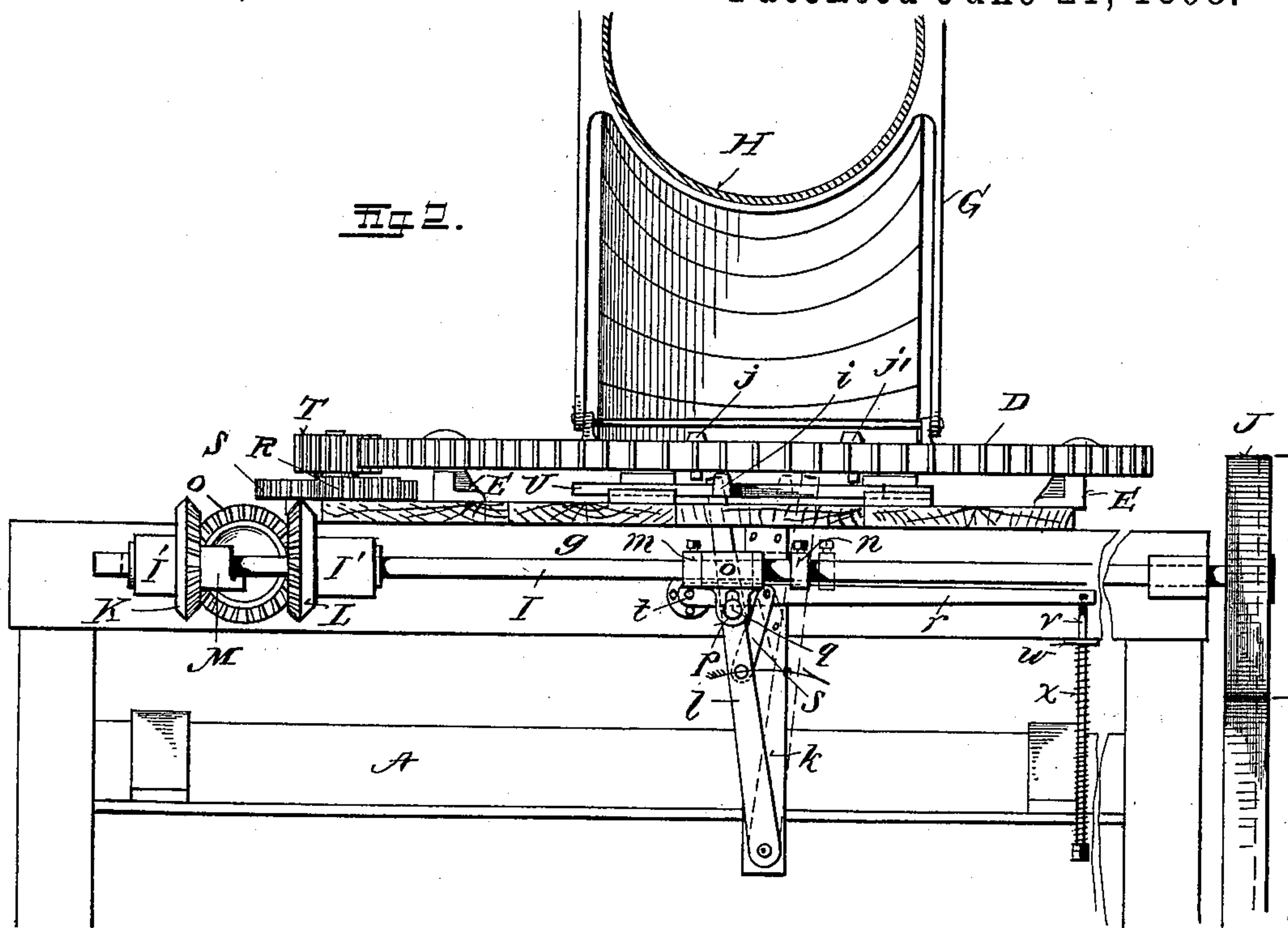
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# UNITED STATES PATENT OFFICE.

EDWARD HUBER AND JACOB W. MILLER, OF MARION, OHIO.

## SWINGING STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 606,059, dated June 21, 1898.

Application filed December 20, 1897. Serial No. 662,512. (No model.)

*To all whom it may concern:*

Be it known that we, EDWARD HUBER and JACOB W. MILLER, citizens of the United States, residing at Marion, in the county of Marion and State of Ohio, have invented certain new and useful Improvements in Swinging Straw-Stackers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention has reference generally to apparatus for stacking straw. More particularly, however, it relates to the novel construction of the mechanism employed for automatically swinging from side to side the  
15 stacker proper, whereby an even distribution of the straw is obtained.

In building straw-stackers heretofore it has been the custom to arrange a turn-table upon a wheeled frame of any desired construction  
20 or upon the rear of the thresher-frame and to mount upon said turn-table the stacker, employing such means for actuating the turn-table as would cause the stacker to automatically move from side to side a limited distance. This general construction we have embodied in the invention hereinafter described; but the particular construction and combination of parts which make up the  
25 stacker is a departure from the present state of the art. This is especially true with respect to the shifting mechanism; and our invention consists in the novel construction of the actuating mechanism for the turn-table, which will be more fully hereinafter described  
30 and shown in the drawings, in which—

35 Figure 1 is a side elevation of our improved stacker. Fig. 2 is a rear elevation thereof, illustrating the driving and shifting mechanism. Fig. 3 is a plan view, partially broken away, further illustrating the shifting devices. Fig. 4 is a detached view of the bevel-gears in section; and Fig. 5 is a section on line *x x*, Fig. 4, looking in the direction of the arrows, illustrating the arrangement of  
40 the clutch mechanism.

The invention will be shown and described as used in connection with the type of straw-discharging apparatus known as "pneumatic straw-stackers." We do not limit ourselves  
50 to this type, however, as it is obvious that any discharging apparatus may be mounted

upon the turn-table, which is actuated by the mechanism hereinafter described.

The reference-letter A represents any suitable supporting-frame upon which the stacker  
55 and its parts are adapted to rest, and B a delivery-pipe secured within said frame, adapted to communicate with the thresher proper. A turn-table D of any desired construction is mounted upon the framework and has bearings upon the same, so as to admit of rotation, said turn-table being provided with a plurality of gear-teeth upon its periphery and held in its proper position upon the frame-support by means of the retaining-plates E.  
60 These plates are securely bolted to the supporting-frame and carry at their ends projections *a*, which extend over a portion of the circular flange *b* on the interior of the turn-table. Rigidly attached to the table by means  
65 of braces F and G is the stacker proper, H, one end of which communicates with the delivery-pipe B.

The actuating mechanism for the turn-table is of the following construction: A driving-shaft I is mounted in suitable bearings I', secured to the frame-support, and carries at one end and fixedly secured thereto a driving-pulley J. Upon its free end the shaft is adapted to carry two bevel-gears K and L,  
70 loosely sleeved thereon, and between said gear-wheels a double clutch M, rigidly attached thereto. Upon a shaft N, journaled in bearings in the frame A and at right angles to the driving-shaft I, is a bevel-gear O,  
75 adapted to mesh with the gears K and L. On the free end of the shaft N is arranged a worm-gear P, adapted to mesh with the gear-wheel Q, having bearings in the main frame and having rigidly attached upon the same a gear-  
80 pinion R. Mounted upon the frame in a manner similar to the gear Q is a gear-wheel S, which meshes with the gear-pinion R and has fixedly secured upon the same a gear-pinion T, the latter pinion being adapted to mesh  
85 with the gear-teeth upon the periphery of the turn-table. The driving-shaft I, being loosely journaled in the bearings or boxes I', is capable of a limited lateral movement derived from the shifting device hereinafter described,  
90 which permits the clutch M to engage alternately with the gears K and L.  
100



The clutch consists of an apertured block adapted to be sleeved upon the shaft and provided with a wedge-shaped lug *d*, said lug being adapted to receive a set-screw or bolt *e*, which rigidly secures the clutch to the shaft. Upon the bevel-gears K and L, as plainly shown in Fig. 5, are arranged blocks *f*, extending a slight distance above the faces of the gear-wheels, which form a bearing against which the lug *d* of the clutch proper abuts when the shaft is shifted through the gear-wheels. These blocks *f* are shown in section in Fig. 4. It will be seen by this construction that our clutch is exceedingly simple and is at all times rigidly attached to the shaft, and, further, that it does away with a large number of unnecessary parts heretofore used, introducing an effective and simple mechanism.

The shifting devices that automatically move the clutch upon the driving-shaft alternately into engagement with the gear-wheels are of the following construction:

A shifter U is mounted in the projecting arms of one of the retaining-plates E, located upon the supporting-frame at a point above the driving-shaft I. The arms of the plate form a bearing for the shifter, upon which the latter is enabled to be moved in the arc of a circle. The shifter consists of a curved metallic bar *g*, provided with extensions projecting from either side of the center, the inward projection having a horizontal slot *h* and the outwardly-projecting portion carrying an upright lug *i*, the lug being arranged in the path of pins *j* and *j'*, which are inserted in apertures *j*<sup>2</sup> in the rim of the turn-table. Secured to the frame A beneath the shifter is a downwardly-extending supporting-bar *k*. At the lower end of this bar and pivotally attached thereto is a shifting lever *l*, which lever projects upwardly, the free end of which is adapted to extend through the slot *h* in the shifter, as plainly shown in Figs. 2 and 3. Adjustably secured to the driving-shaft I are the collars *m* and *n*, and interposed between the collars is a shifting block *o*. The block is adapted to slide upon the shaft and is provided with an apertured lug *p*, through which aperture a pin *q* on the shifting lever extends. The shifting lever *l* is pivoted to a spring-lever *r* by means of the link *s*, the latter lever being pivoted in turn to the frame A at *t*. *w* is a bracket apertured at the center, through which aperture a headed rod *v* is adapted to pass, one end of which rod is attached to the free end of the spring-lever *r*. Between the bracket and the headed end of the rod is interposed a spiral spring *x*.

The parts having thus been described and shown, their operation is as follows: Motion being communicated to the drive-pulley J, the turn-table is operated by means of the gear connection between the driving-shaft and said table, which causes the latter to rotate. In Fig. 2 the table is shown to have reached a point in its travel where the pin *j* is about to strike the lug *i* upon the shifter U. Upon

further movement of the table the pin will carry the shifter along until the shifting lever *l* comes in contact with the same. The lever will then be driven to one side, carrying with it the shifting block *o*. This movement of the shifting lever causes the spring-lever *r*, through the link connection, to rise, thereby compressing the spring *x*. The stops or collars *m* and *n* are arranged at such distances from each other that the lever-arm will pass the center in either direction at the time the shifting block strikes the same. Upon further movement of the table the shifting block will be forced against the stop *n* until the clutch M is withdrawn from its engagement with the bevel-gear K. At this moment the shifting lever being but slightly over the center the spring will cause the lever *r* to throw the clutch immediately into engagement with the bevel-gear L, thereby reversing the movement of the table. The collars *m* and *n*, being adjustably secured to the driving-shaft, can be set at any desired distance from each other, so that the proper throw will be obtained for the shifting arm.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a straw-stacker, the combination with a main supporting-frame and a turn-table mounted thereon, of a driving-shaft, a double clutch secured thereon, a plurality of gear-wheels loosely sleeved on said shaft, a gear connection between the gear-wheels and the turn-table, and actuating mechanism for shifting the shaft through said gear-wheels, whereby said double clutch engages with a different gear and whereby the direction of rotation of said turn-table is reversed.

2. In a straw-stacker, the combination with the main supporting-frame and a turn-table mounted thereon, of a driving-shaft, a double clutch fixedly secured thereto, a plurality of gear-wheels loosely sleeved on said shaft, said gear-wheels being arranged upon opposite sides of the clutch, and a gear connection between the gear-wheels and the turn-table, and actuating mechanism for shifting the shaft through the gear-wheels.

3. In a straw-stacker, the combination with a main supporting-frame and a turn-table mounted thereon, of a driving and a driven shaft journaled in bearings in the frame, said driving-shaft having longitudinal movement, means for transmitting motion from said driving-shaft to said turn-table, a gear on each end of said shaft one of which is beveled, two bevel-gears loosely mounted upon said driving-shaft and adapted to engage on opposite sides of the bevel-gear on said driving-shaft, a fixedly-mounted double clutch carried by said driving-shaft between its said gears, and actuating mechanism for automatically throwing the clutch alternately into engagement with said adjacent gear-wheels.

4. In a straw-stacker of the kind described, the combination with the supporting-frame



and a turn-table arranged thereon, of a driving-shaft mounted in bearings upon the frame, stops secured to the shaft, and a shifting block loosely sleeved thereon between said stops, a shifter mounted upon the frame, a tripping-lever adapted to engage with the shifting block and shifter, and pins arranged on the turn-table adapted to engage with the shifter, substantially as and for the purpose described.

5. In a straw-stacker of the kind described, the combination with the supporting-frame and a turn-table arranged thereon, of a driving-shaft journaled in bearings upon the frame, stops adjustably secured to the shaft, and a shifting block loosely sleeved thereon

between the stops, a shifter mounted upon the frame, a tripping-lever engaging with the block and shifter, a spring-lever connected to the tripping-lever for the purpose described, and pins arranged in the turn-table adapted at certain periods to engage with the shifter, all constructed and arranged in the manner described.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWARD HUBER.  
JACOB W. MILLER.

Witnesses:

JOHN J. CRAWLEY,  
J. ROSTEN CURTIS.