

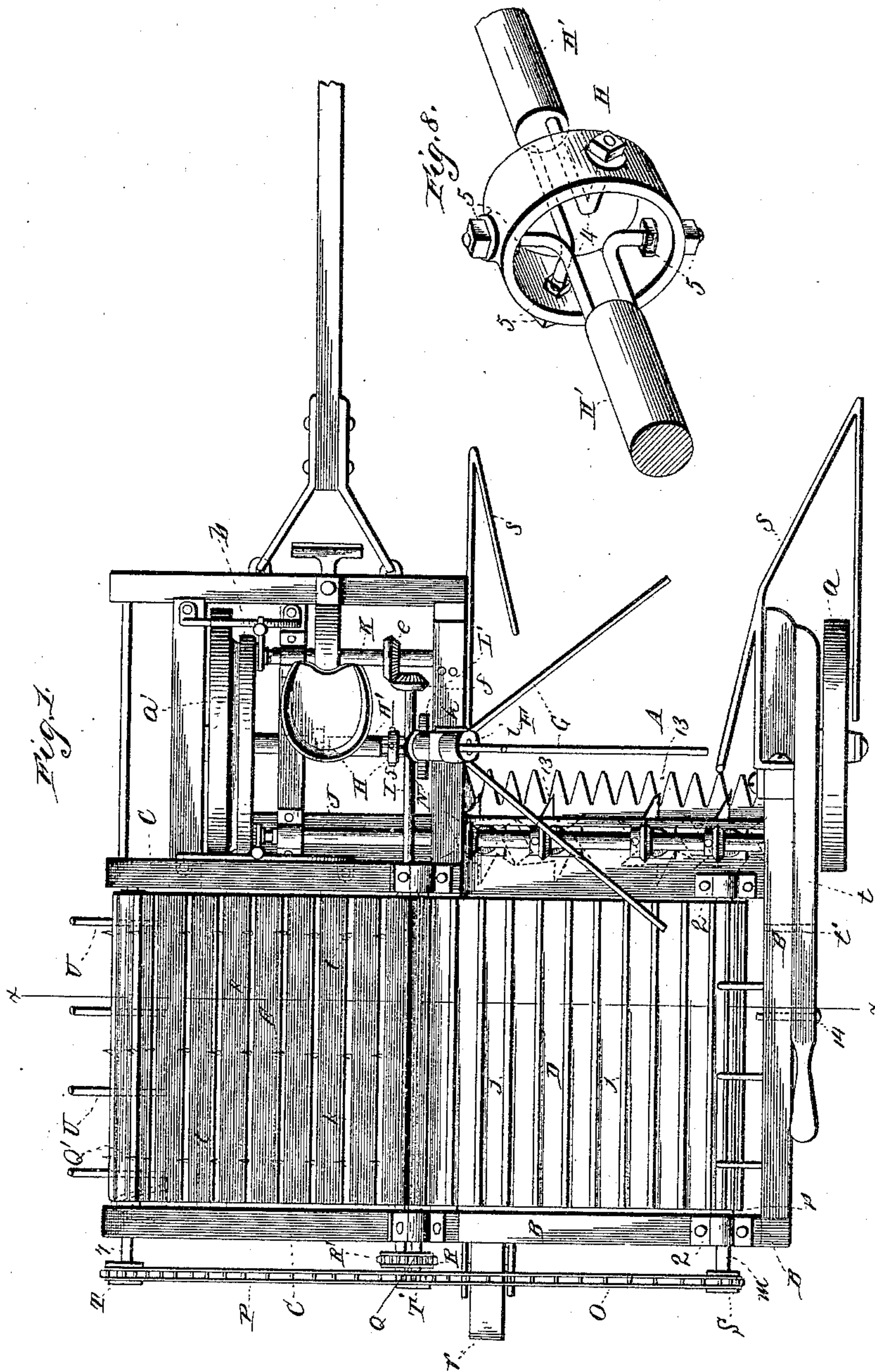
(No Model.)

3 Sheets—Sheet 1.

J. ARMSTRONG.
CORN HARVESTER.

No. 436,885.

Patented Sept. 23, 1890.



Witnesses:

Chas. L. Taylor,

R. A. Balderson

Inventor

John Armstrong,

By his Attorneys,

Higdon & Higdon

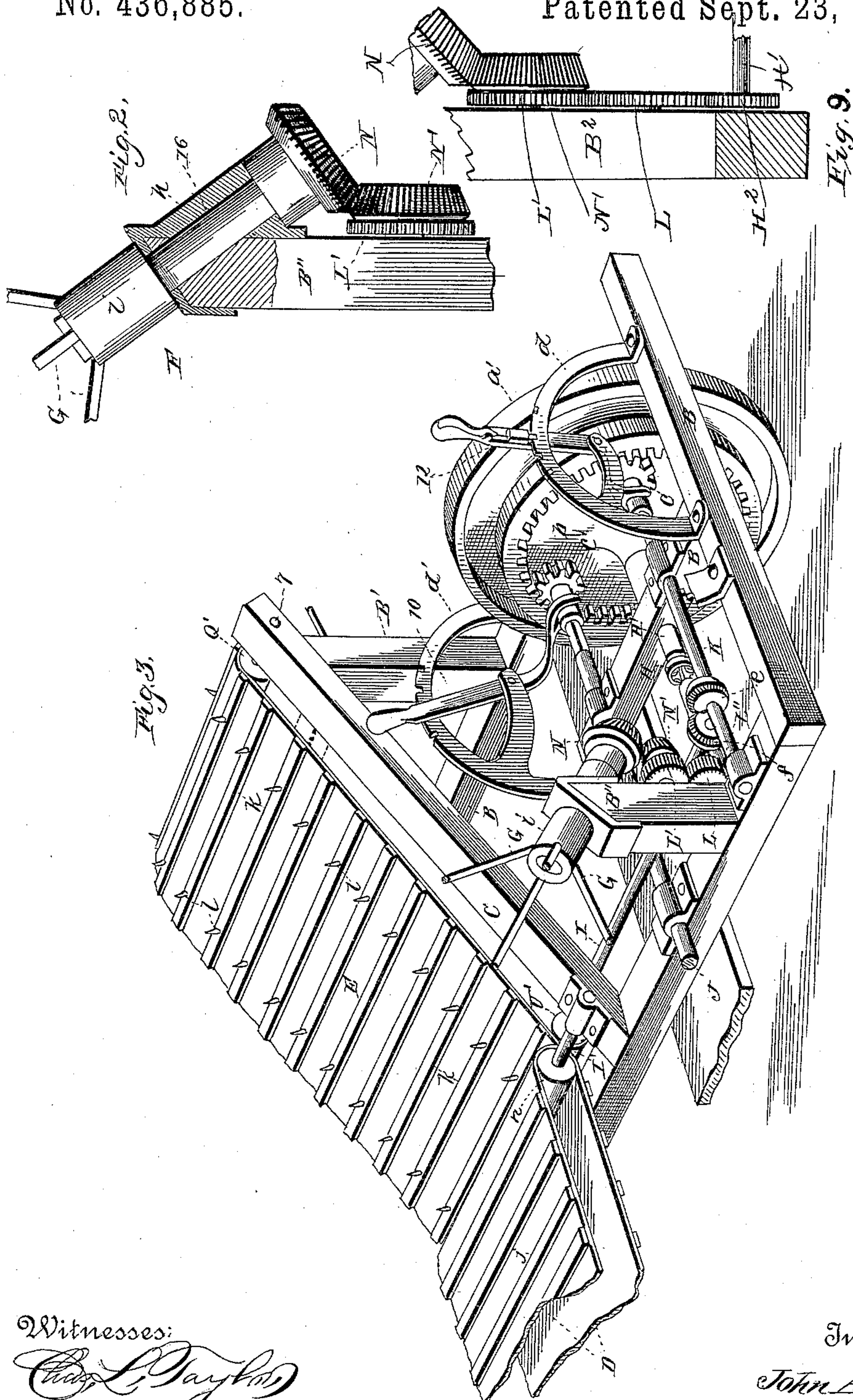
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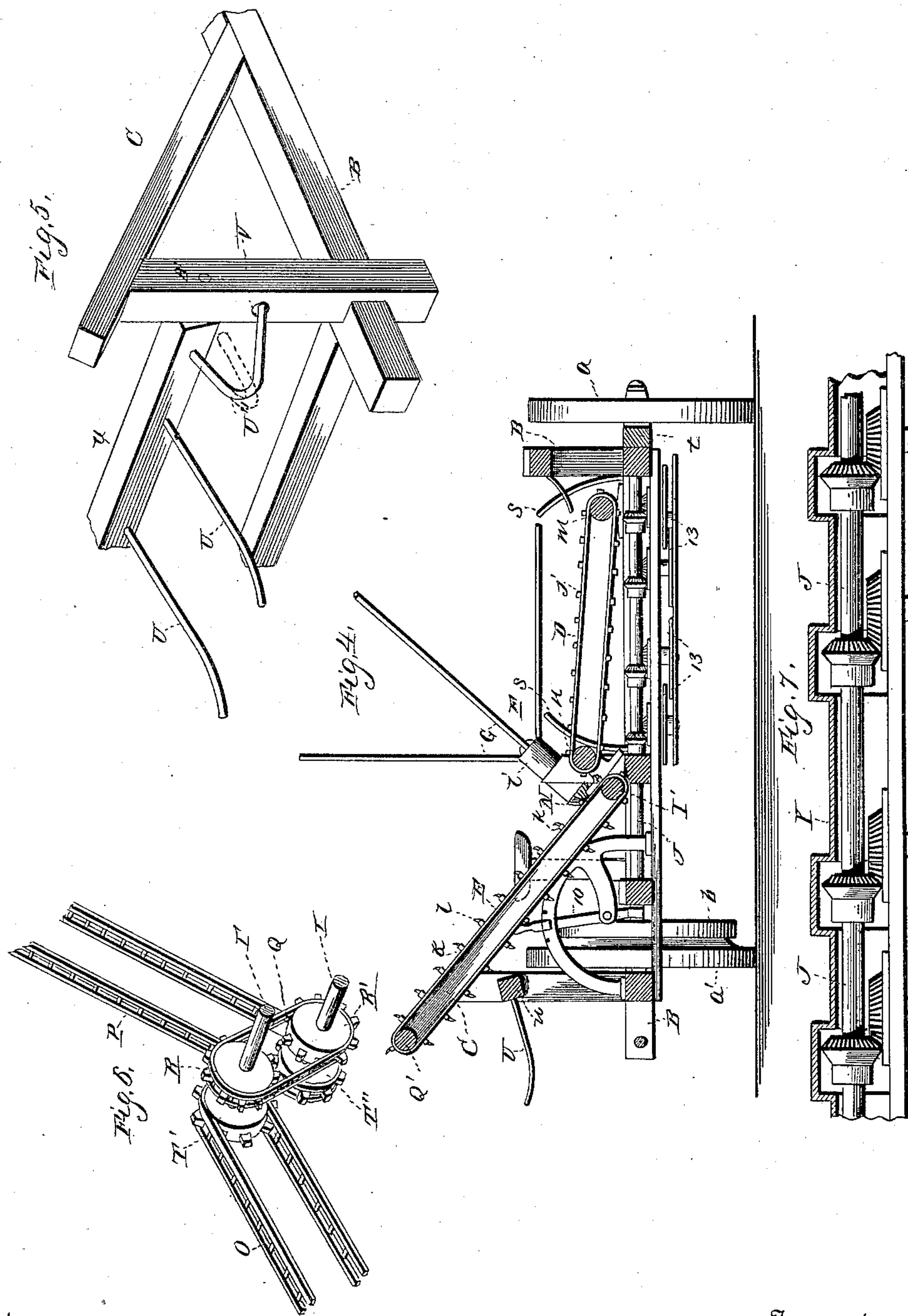
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UNITED STATES PATENT OFFICE.

JOHN ARMSTRONG, OF VINE CREEK, KANSAS, ASSIGNOR TO HANNAH ARMSTRONG, OF SAME PLACE.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 436,885, dated September 23, 1890.

Application filed December 10, 1889. Serial No. 333,175. (No model.)

To all whom it may concern:

Be it known that I, JOHN ARMSTRONG, of Vine Creek, Ottawa county, Kansas, have invented certain new and useful Improvements in Corn-Harvesters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in corn-harvesters; and it consists in the novel construction and arrangement of the different parts hereinafter fully set forth and described.

In the drawings, which illustrate the manner of carrying out my invention, Figure 1 is a top plan view of my corn-harvester embodying the improvements thereof. Fig. 2 is a sectional detail view of the mechanism used for operating reel F, which is supported on upright timber B''. Fig. 3 is a perspective detail view showing the mechanism by which my device is operated and the conveyer in position, said conveyers being partly broken away. Fig. 4 is a cross-sectional view taken on line *xx* of Fig. 1, looking toward the front. Fig. 5 is a detail in perspective of the supporting-timbers which carry the rack U. Fig. 6 is a detail in perspective of the sprocket wheels and chains which operate the endless conveyers D and E. Fig. 7 is a sectional detail view showing shaft J, on which is secured the bevel-gears which operate the sickles, these being covered by suitable hood Y; and Fig. 8 is a detail in perspective of the tumbling-joint. Fig. 9 is a detail view of the reel-driving mechanism.

Referring to the drawings by letter, A represents my invention, and B the beams used in the construction of the bearing-platform, which constitutes a support for the gearing and machinery used in operating my improved corn-harvester.

C is an inclined beam or support secured on upright B', which forms a bearing for endless conveyer E.

D is an endless conveyer located directly behind the sickles 13, which receives the corn and conveys it to inclined conveyer E.

F is a revolving reel provided with arms G, (these revolve immediately above the sickles

13,) it being constructed in such a manner that the arms or levers G are nearly parallel with conveyer D as they reach their lowest position, thus passing the corn from sickles 13 onto said endless conveyer D. Conveyer E is provided with cleats *k*, in which are rigidly secured prongs *l*, which conduct the corn from the harvester to a shocker, if one be used, or deposit it in the rack U. (Illustrated in Figs 1, 4, and 5.) The endless conveyer D is also provided with cleats *j*, which convey the corn from sickles 13 to the inclined conveyer already described.

H are tumbling-joints, two of which are made in the main axle H'. Should the frame become sprung, the tumbling-joint will tend to keep the gear upon shaft H' in mesh with the gear L; or, if it should be necessary to arrange the gears L and L' out of alignment with the shaft H' the tumbling-joint will permit such an arrangement. The frame may be raised or lowered by the use of lever-arm *t*, which is pivoted to said frame at *t'* and has journaled at its lower or forward end the wheel *a*.

i is a hub secured on shaft 16, in which the arms G of the reel F are properly secured. *h* is a coupling-sleeve secured around said shaft 16 and serves to protect it from rust, wear, &c., and at the same time secure it to upright support B''.

I is a shaft provided with a suitable roller U', on which revolves the endless conveyer E.

I' is a similar shaft provided with suitable roller *n*, on which revolves the horizontal endless conveyer D, said shaft I' being mounted in a suitable manner upon the inclined beam C.

J is a shaft provided with suitable bevel-gears which operate the sickles 13, these shafts and gears being provided with a hood or covering Y. Said hood Y may be made in the manner illustrated in Fig. 7 or may be made to run straight across.

K is a shaft to which is keyed or otherwise rigidly secured gear-wheel *c*, which meshes with inside cog-wheel *b*, said shaft K being provided with bevel-gear *e*, which meshes with a corresponding gear *f*, thus operating shaft I, which in turn operates the conveyer E.

L is a gear-wheel mounted upon the upright

support B'' in a suitable manner and meshes with a corresponding gear-wheel L', said gear L' being mounted upon said upright support B'' in a suitable manner and provided with
 5 a bevel-gear N', thus operating with a corresponding bevel-gear N, which operates the revolving reel F, said bevel-gears L and L' being operated by a suitable cog-wheel H², which is secured to main axle H'.
 10 O is a sprocket-chain which operates on sprocket-wheels S and T', sprocket-wheel T' being rigidly secured on shaft I'.
 P is a sprocket-chain similar to O, which operates on sprocket-wheels T and T'' for operating the inclined conveyer E. R is also a sprocket-wheel keyed or otherwise rigidly secured on shaft I', and R' is a corresponding wheel secured on shaft I. Around said sprocket-wheels R and R' operates the short chain
 20 Q, which forms the gearing between said sprocket-chains O and P, which operate the endless conveyers D and E.
 Q' is the upper roller, around which the endless conveyer E revolves.
 25 *m* and *n* are the rollers around which the horizontal conveyer D revolves.
 U are the arms made rigid in the oscillating beam *u*, these being secured in such a manner on the frame-work B B' and C as to
 30 form a rack which catches the corn after it is carried off by endless conveyer E, the braces U'' being secured in the oscillating timber *u* and bent in such a manner as to operate in a thimble V, which is made in the upright support B'. This enables the operator to use
 35 said rack U when it is desirable to do so, or to dislodge the end of brace U'' from thimble V, thus allowing the bracket to swing downward out of the way.
 40 The tumbling-joints H, heretofore referred to, are constructed in the manner illustrated in Fig. 8, composed of a metallic band H, in which are secured by suitable nuts 5 the angle-rods 4, said rods 4 being securely fastened
 45 in the main axle H'.
a a' are the main wheels, on which my device is mounted.
b is an inside cog-wheel, which gears with the smaller cog-wheels *c'* and *c*, for operating
 50 shafts J and K, which furnish power for my device. Said gears *c'* and *c* are provided with levers 10 and 12, by which they are thrown in and out of gear with inside cog *b*. *d'* and *d* are the segmental ratchet-bars in which said
 55 levers 10 and 12 are secured.
s are guides properly constructed and held in position on frame-work B. This guides the corn directly in front of sickles 13.
 14 is a pin which passes through lever *t* and
 60 beam B, that holds said lever *t* in position when the machine is in use, lever *t* being for the purpose of raising and lowering the corn-harvester, when desired.
 2 indicate the bearings in which the shaft
 65 *m* is journaled.
 7 indicates the shaft upon which the roller Q' revolves.

Having thus fully described my invention, what I claim as being new, and desire to secure by Letters Patent, is—

1. In a corn-harvester, the combination, with the main frame mounted upon the wheels *a* and *a'*, the wheel *a'* being provided with a gear *b*, of the sickle-operating shaft J and the rotating sickles 13, geared therewith, the small gear *c'*, mounted upon the end of the shaft J, small gear *c*, operating the shaft K, the gear *e*, mounted thereon, the gear *f*, meshing with gear *e*, the shaft I, upon which the gear *f* is mounted, the chain O, for operating the horizontal carrier-belt D, the chain P, for operating the inclined elevator-belt E, and the intermediate chain Q, which connects the chains O and P, substantially as set forth.

2. A corn-harvester having endless conveyer D, secured on pulley-shafts *m* and *n*, operated by sprocket-chain O, which is mounted on sprocket-wheels S and T', the latter being geared with a corresponding sprocket T'', on which is secured chain P, operating inclined endless conveyer E, substantially as set forth and described.

3. In a corn-harvester, the combination, with the frame B, of the standard B'', the combined cap and journal *h*, mounted upon the same, the shaft 16, passing longitudinally through the cap and journal and through the standard at an oblique angle, the hub *i*, mounted on the upper end of the shaft 16, the reel-arms G, extending from said hub at such an angle that when in their lowest position they are nearly parallel with a carrier-belt of the harvester, and gearing devices for operating the reel, substantially as described.

4. In a corn-harvester, the combination, with the frame B, of the wheel *a'*, having the gear *b*, the shaft K, mounted in the frame, the gear *c*, mounted on the end of shaft K and meshing with gear *b*, the gear *e* on said shaft K, the shaft I, mounted also in the frame, gear *f*, mounted on shaft I, meshing with gear *e*, the sprocket-wheels R' and T'' on the rear end of shaft I, the shaft I', the sprocket-wheels R and T', secured thereon, the chain Q, uniting the wheels R and R', and the chains O and P, placed, respectively, upon the sprocket-wheels T' and T'', for operating the conveyer-belts D and E, substantially as shown and described.

5. A corn-harvester provided with sickles 13 and endless conveyers D and E, carrying the corn and depositing it in hinged rack U, said rack U having the bent arm U'', operating in thimble V to support the rack and which admits of its being held in position to receive the stalks or of swinging loosely downward to discharge the same, substantially as set forth and described.

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

JOHN ARMSTRONG.

Witnesses:

J. E. HIGDON,
R. A. BALDERSON.