Sheet 1 - 3 Sheets

J. H. Snyder

Harvester Droppers.

No 45531 Patented Dec. 20, 1864.

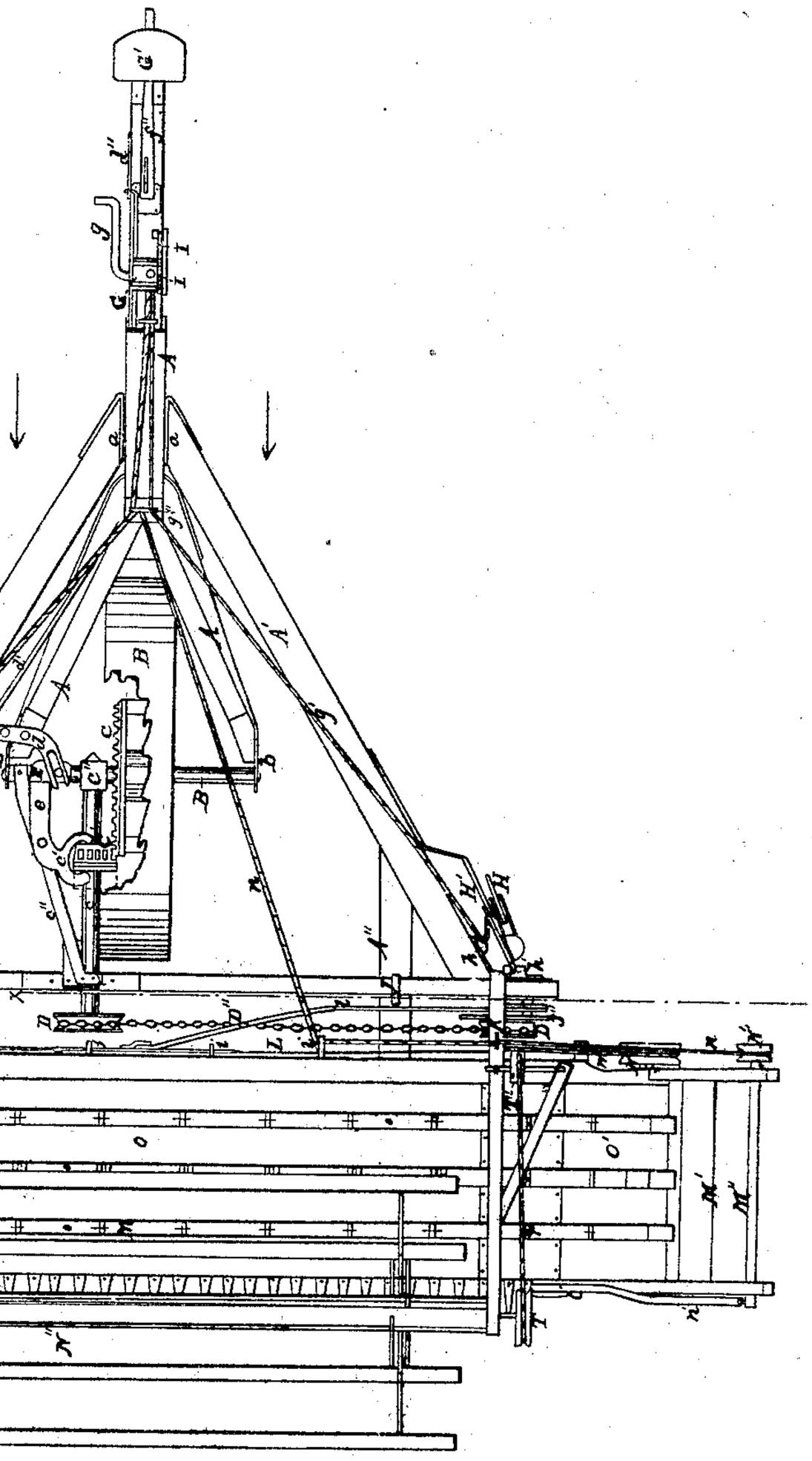

Fig. 1.

Witnesses.
Joseph Stocking.
James Snyder

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Fig. 3.

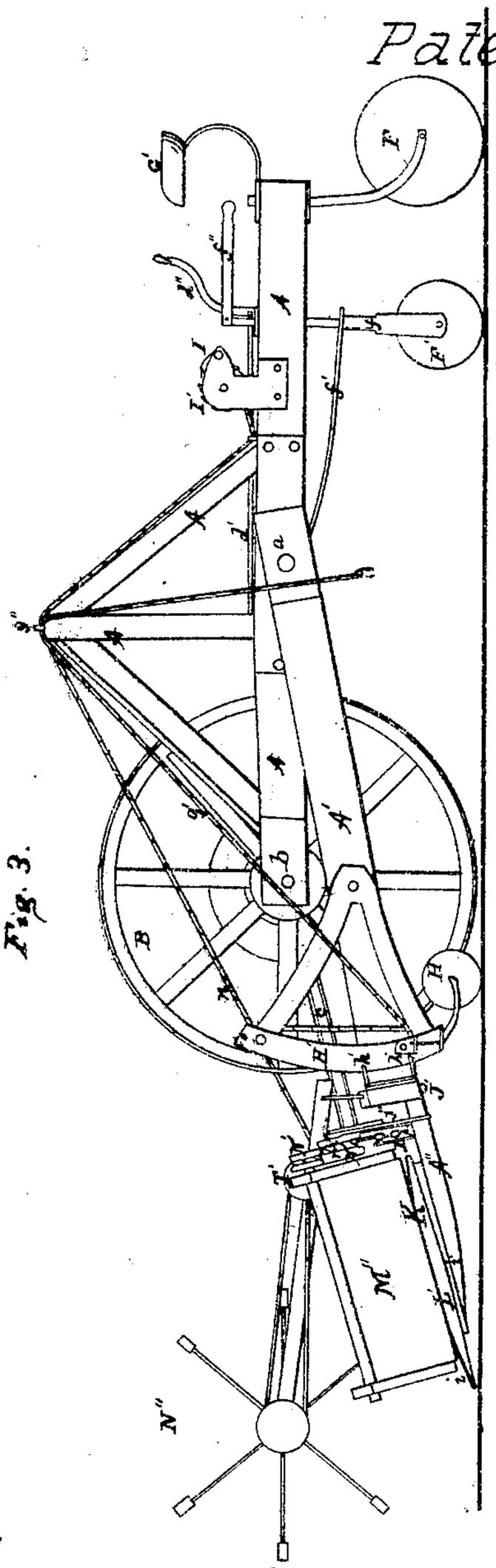

Fig. 2.

Witnesses.
Joseph Stocking.
James Snyder

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Fig. 7.

Fig. 6.

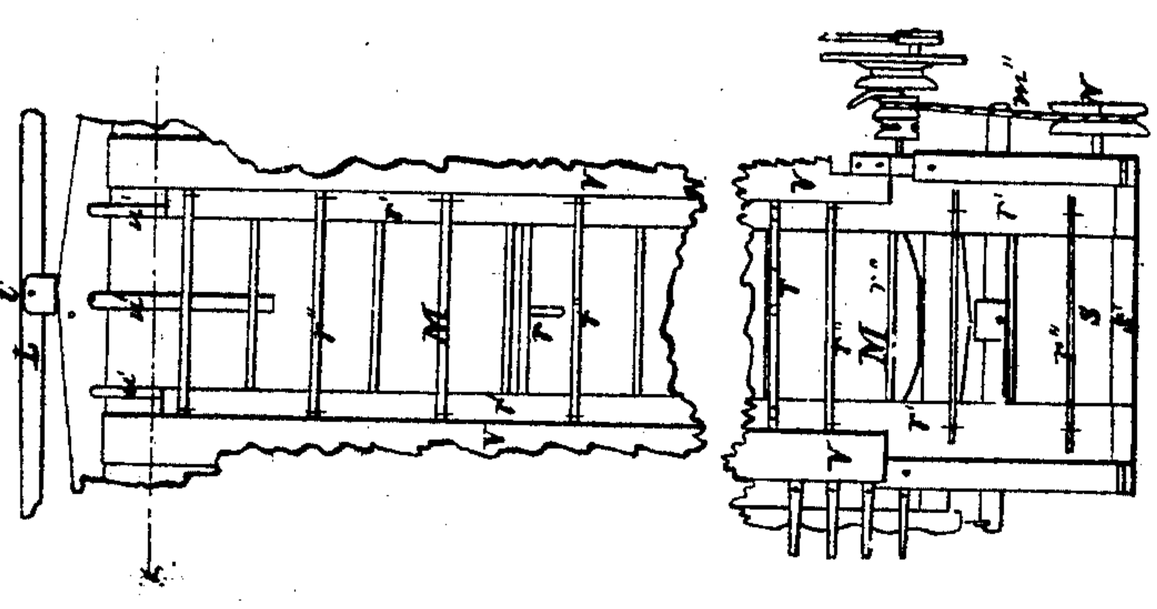


Fig. 8.

Fig. 4.

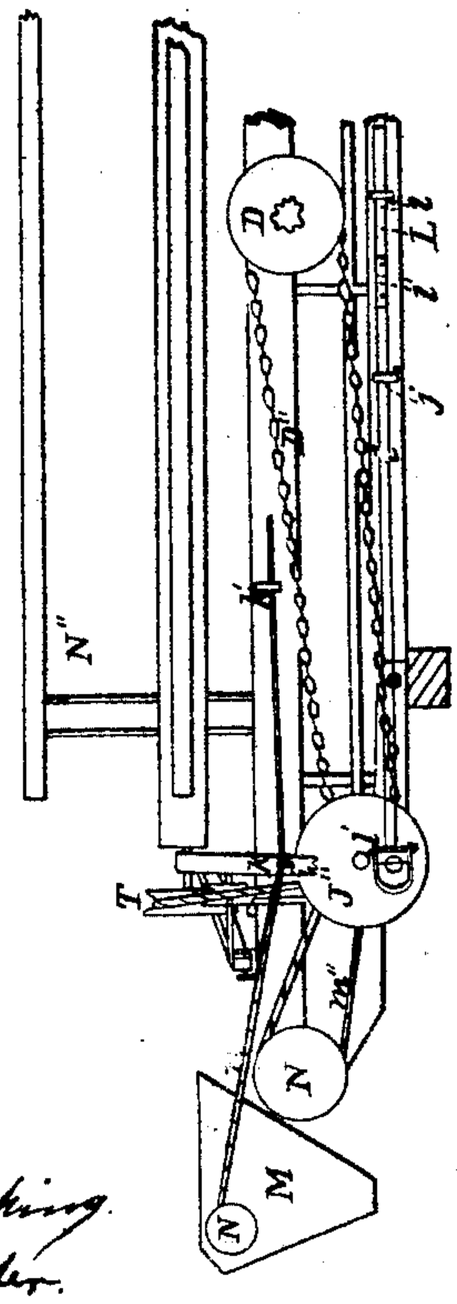
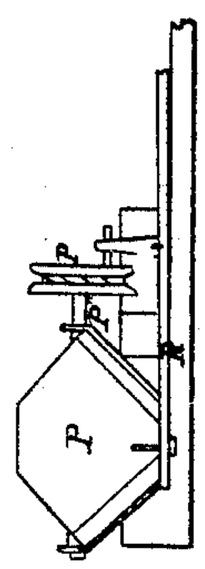


Fig. 5.



Witnesses.
Joseph Stocking.
James Snyder.

Inventor—
J. H. Snyder.

UNITED STATES PATENT OFFICE.

J. H. SNYDER, OF KILLBUCK, ILLINOIS.

IMPROVEMENT IN FRAMES FOR HARVESTING AND SEEDING MACHINES.

Specification forming part of Letters Patent No. **45,531**, dated December 20, 1864.

To all whom it may concern:

Be it known that I, J. H. SNYDER, of Killbuck, in the county of Ogle and State of Illinois, have invented new and useful Improvements in a Combined Harvester and Seeding-Machine; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of the harvester. Fig. 2 is a section representing the manner in which the machine is converted into a sower. Fig. 3 is a side view of Fig. 1. Fig. 4 is a sectional view in the direction of the line *x x* in Fig. 1. Fig. 5 is an end view of Fig. 2. Figs. 6, 7, and 8 are sectional views that will be referred to in the description.

Similar letters of reference indicate the same parts in the different views.

My improvement relates to the construction and arrangement of a machine forming a combined harvester and seeding-machine, and can readily be changed from one to the other.

A is the frame of the machine, with which the driving-gear is connected; B, the driving-wheel in the center, the journals of the shaft B′ of which turn in the bearings *b*, secured to the frame.

C is a cog-wheel secured to the shaft B′, that works in the pinion C′ on the shaft *c*. This shaft is at right angles to the shaft B′, turning in the box C″ at one end, and has a bearing, *c′* in the end of the brace *c″*, near the other end, to which is secured the chain-wheel D.

E is a double lever, formed of the levers *e* and *d*, the lever *d* operating the lever *e* by means of a pin secured to the lever *e* passing up through a slot in the lever *d*, as seen in Fig. 1. The end of the lever *e* is formed into the fork *e′*, that extends on each side of the pinion C′.

To the end of the lever *d* is attached the connecting-rod *d′*, that extends along the gear-frame toward the end of the machine, near the seat G′, and is secured to the hand-lever *d″*, Fig. 3, by means of which the pinion is thrown in and out of gear. The operation of the levers moves the pinion C′ down on the shaft *c*, as indicated by the dotted lines in Fig. 1, or moves it back in gear, as represented.

F, Fig. 3, is a caster-wheel that supports the pole end of the frame, and F′ is a rudder-wheel designed to aid in controlling the direction of the machine, the stem *f* of which extends up through the guide *f′* and the frame, and is pivoted at the top to the handle *f″*.

G is a pulley or windlass-wheel operated by the crank *g*. To this wheel are attached the cords or ropes *g′*, that pass through a guide, *g″*, on the top of an elevated part of the frame, and are connected to the caster-wheels H in such a manner as to be the means of raising and lowering the platform in front of the machine. The end of each cord is attached to the upper end of a quadrant-lever, H′, on each side of the machine, and passes down through an eye, *h*, secured to the frame. The caster H, on each side, is connected to the lower end of the lever by an adjustable arm, as represented. By turning the crank *g*, winding up the ropes *g′*, the adjustable frame A′ and platform K are elevated, the quadrant-levers moving in the guides *h′*, and the casters, adjusted accordingly, elevating the platform to any desired height above the ground, there being a pawl, I, and ratchet-wheel I′ on the wheel G to retain the platform in any desired position.

The frame A′ of the machine, to which the casters H and the platform are connected, is jointed to the gear-frame at *a* and moves independent of it; also, the shaft *c* with all its connections are adjustable in reference to the shaft B′ and gear-frame, thus rendering these parts adjustable to any position in which the platform may be placed. The frame A′ is connected to the front part of the machine by the arms A″, secured underneath the platform, and attached by the adjustable fastenings J J′ to the frame A′.

The chain-wheel D is connected to the pulley D′ by the chain D″, and on the shaft of the pulley D′ is the crank J″. (Seen in Fig. 4.) This crank operates the cutter-bar in front of the machine by means of the crank-rod *l*, connected to one side of the wheel at *l′*, and pivoted to the middle of the connecting-rod L, that extends from one lever to the other at each end of the platform. To the front ends of the levers are secured the ends of the cutter-bar, as at *i*, the levers being connected at the middle to the platform by a pin or rivet, as seen at *i′*, that allows them to move or vibrate by the action of the connecting-rod L.

j j are guides that the connecting-rod moves

in, keeping it in place. The revolution of the crank J″ gives the connecting-rod a reciprocating movement that operates the cutter-bar in a similar manner at the other end of the levers.

On the platform is arranged an endless apron, M, (represented in Figs. 6, 7, and 8,) that consists of two or more revolving rakes, *r*, attached to an endless apron. This apron is formed of two bands or belts, *r′*, with slats *r″* placed across and attached to them, as represented. The belts *r′* run over two small pulleys, *u*, at one end, and at the other end they are inclined upward and run over the roller S, with the pulley N on one side, that operates it, this pulley being connected with the pulley *t* on the shaft of the pulley D by the belt *m″*.

O is a platform, made of slats placed above the endless rake, the teeth of the rakes extending up through the openings *o*, and move between the slats for the purpose of raking up the grain. At the end *o′* the slats are inclined upward like the endless rake, and are attached to the box M′, into which the grain is carried as it falls on the platform by the rakes. The box M′ is opened from below to let the grain fall out in the desired quantity for sheaves by means of the pulley N′, connected to the gate M″ of the box, to which a cord is attached that extends to the driver's seat through the the guides *k*, *k′*, and *g″* of the frame, and is operated by the driver. By pulling the cord the box is opened, which is immediately closed, when the cord is released, by the spring *n′* pressing under a catch at one end of the gate M″, as represented in Fig. 1. The teeth of the rake, as it is carried round on the endless belts, project upward, as described, until they come to the roller S, and as the rake moves over the roller the teeth come against the piece S′, turning the rake back in a flat position under the belts, and it is so carried between the apron and platform, as shown by the red lines in Fig. 7, until it comes near the other end, when the ends of the rake, being so jointed or attached to the belts that the teeth turn down through the slots *u′* in the platform, as indicated by the dotted red lines, and as the rake is drawn round the pulleys *u* it turns round through the slots, as indicated by the dotted line *u″*, to an upright position on the top of the pulleys.

The ends of the rake where they come under the strips V are flattened, as seen at *y y* in Fig. 8, which is a section of Fig. 6, in the direction of the line *x′ x′*. The ends of the rake, being flattened on both sides, conform to the face of the pulleys, causing the rake to turn up as it is moved round the pulleys, and the flattened ends coming under the strips V, the rake is retained in that position the whole length of the apron until it turns round the roller S.

N″ is the reel, arranged in the desired position, supported by suitable frame-work, being operated by the pulleys T T′, connected to a pulley on the shaft of the pulley D′.

The horses are attached at the rear end of the machine, one on each side of the pole of the frame near the seat, going in the direction of the arrows; and from the construction and arrangement of all the parts, as described, the man in the seat can drive the team, rake the grain into gavels, throw the machine in and out of gear, and guide the direction of the machine by the rudder-wheel.

To change this machine from a reaper, as described, into a header, remove the revolving rake and slats O and put on the canvas and elevator; and to convert the harvester into a seeding-machine, take off the platform with all its reaping appendages by disengaging the fastenings J J′, and secure to the frame A′ in place of the platform, by the fastenings J J′, the sowing apparatus represented in Figs. 2 and 5, which consists of the seed box or hopper P, supported by suitable frame-work, and the pulley P′ on the shaft P″, attached to the box, the pulley P′ being connected to the chain-wheel or pulley D′, as represented.

To one side of the pulley P′ is attached the connecting-rod R, that operates the lever R′, giving the slide *p*, connected to the end of the lever, a reciprocating movement. This slide, extending under the opening *p′* in the hopper, is adjusted by the gage *p″*, so that more or less grain can be sown per acre.

The sower being connected to the adjustable frome, as described, in place of the harvester, it can be raised or lowered by the same means, and the driving-gear will operate the sower as well as the harvester.

What I claim as my improvement, and desire to secure by Letters Patent, is—

1. Hinging or jointing the frames A and A′ together at *a*, as and for the purpose set forth.

2. The quadrant-levers H′ H′, casters H H, and cords *g′ g′*, in combination with the adjustable frame A, as and for the purpose set forth.

3. The combination of the compound levers *d e*, rod *d′*, and lever *d″*, when arranged as as and for the purpose set forth.

4. Hinging or connecting the shaft *c* to the shaft B′, so that the bearing *c″* and the connection of the brace *c″* to the shaft B′ will allow the shaft *c* to rotate in its bearings and at the same time be self-adjustable to any desired position of the frames, as and for the purpose set forth.

5. The caster-wheel F, rudder-wheel F′, spring-guide *f′*, and windlass G, in combination with the adjustable jointed frames A A′, when arranged as and for the purpose set forth.

6. The fastenings J J′ and arms A″ A″, in combination with the adjustable frame A′, as and for the purpose set forth.

J. H. SNYDER.

Witnesses:
JOSEPH STOCKING,
JAMES SNYDER.