

(No Model.)

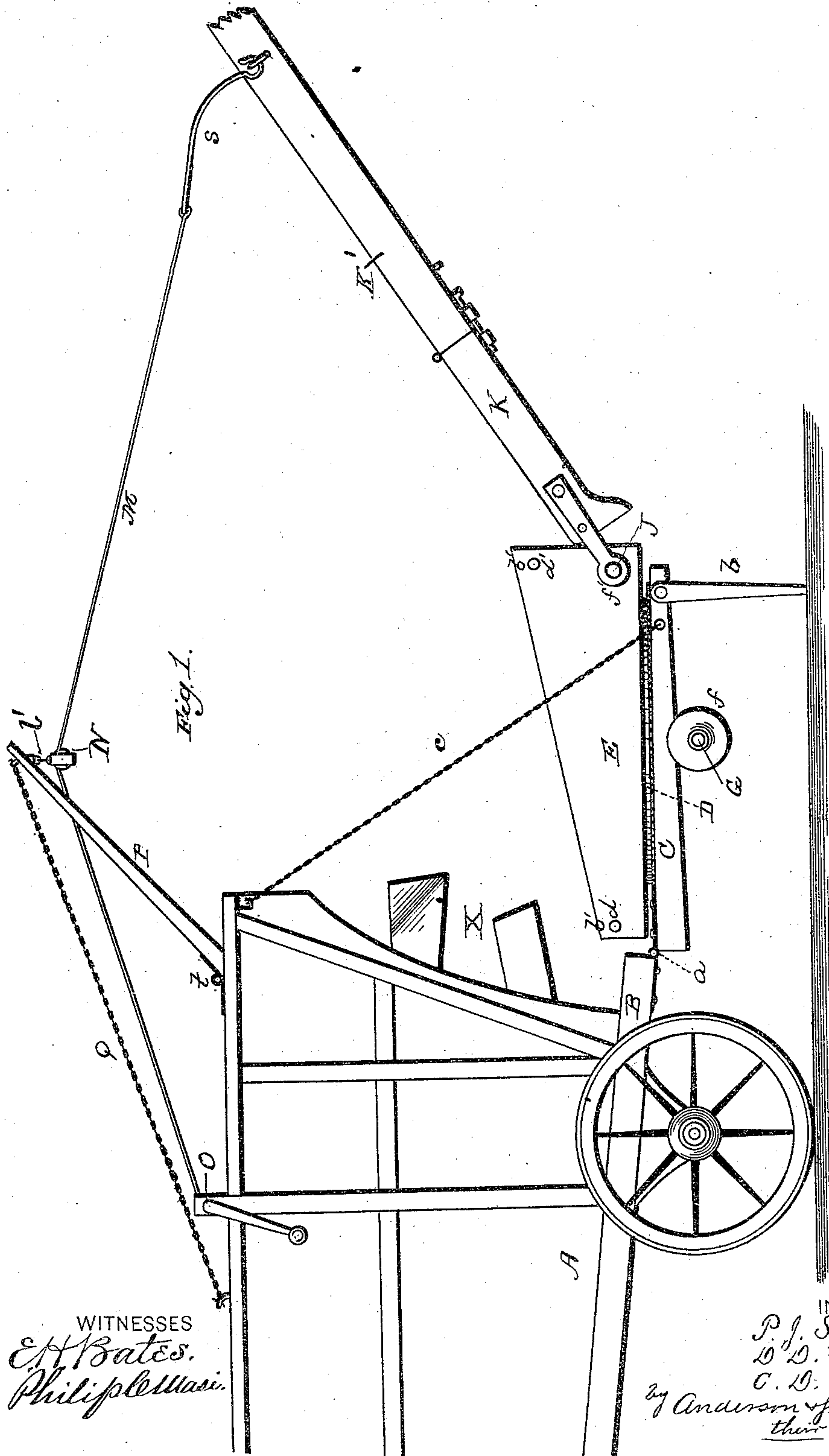
4 Sheets—Sheet 1.

D. D., C. D., & P. J. SPRAGUE.

STRAW STACKER.

No. 311,209.

Patented Jan. 27, 1885.



WITNESSES
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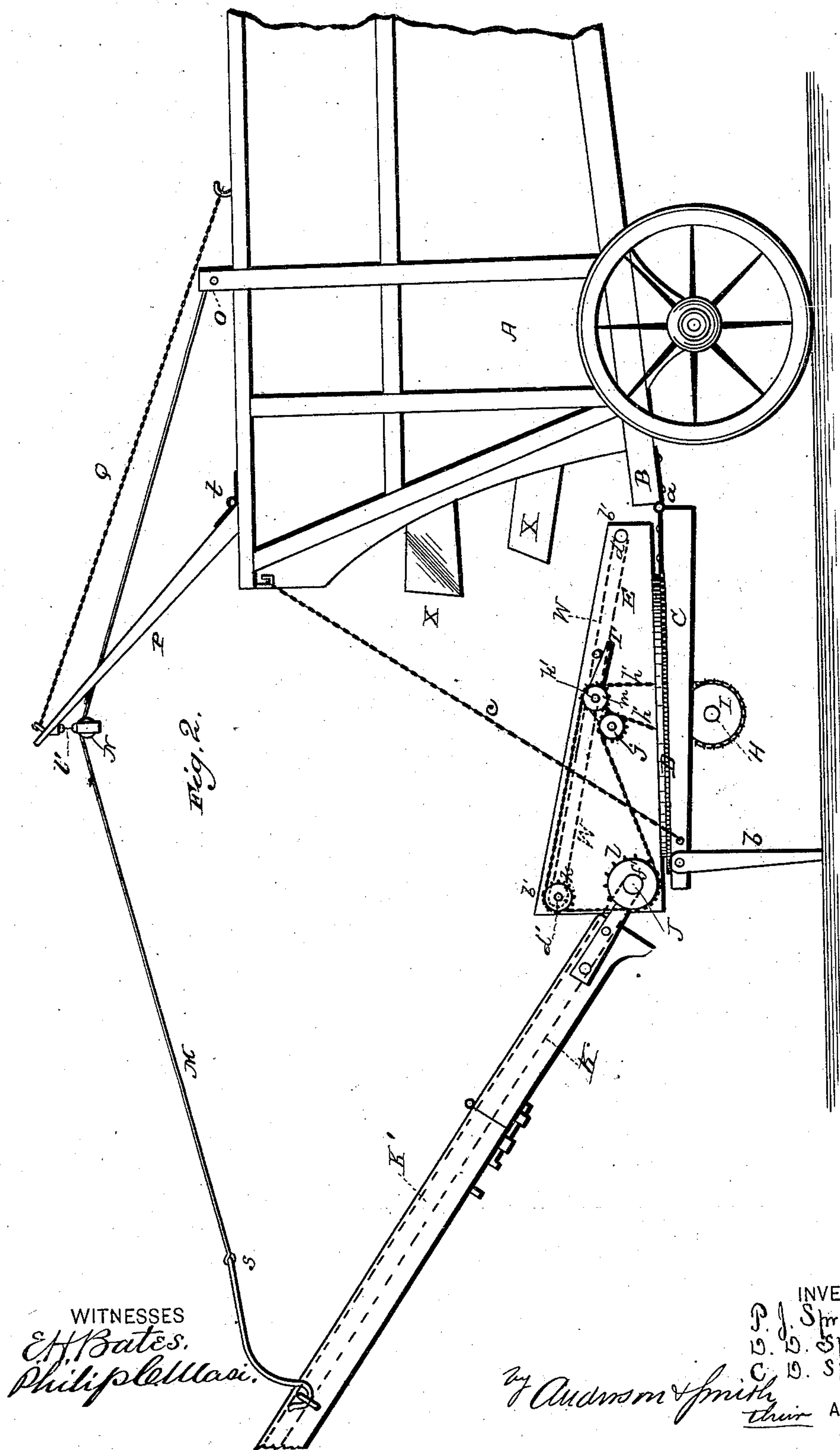
4 Sheets—Sheet 2.

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4 Sheets—Sheet 4.

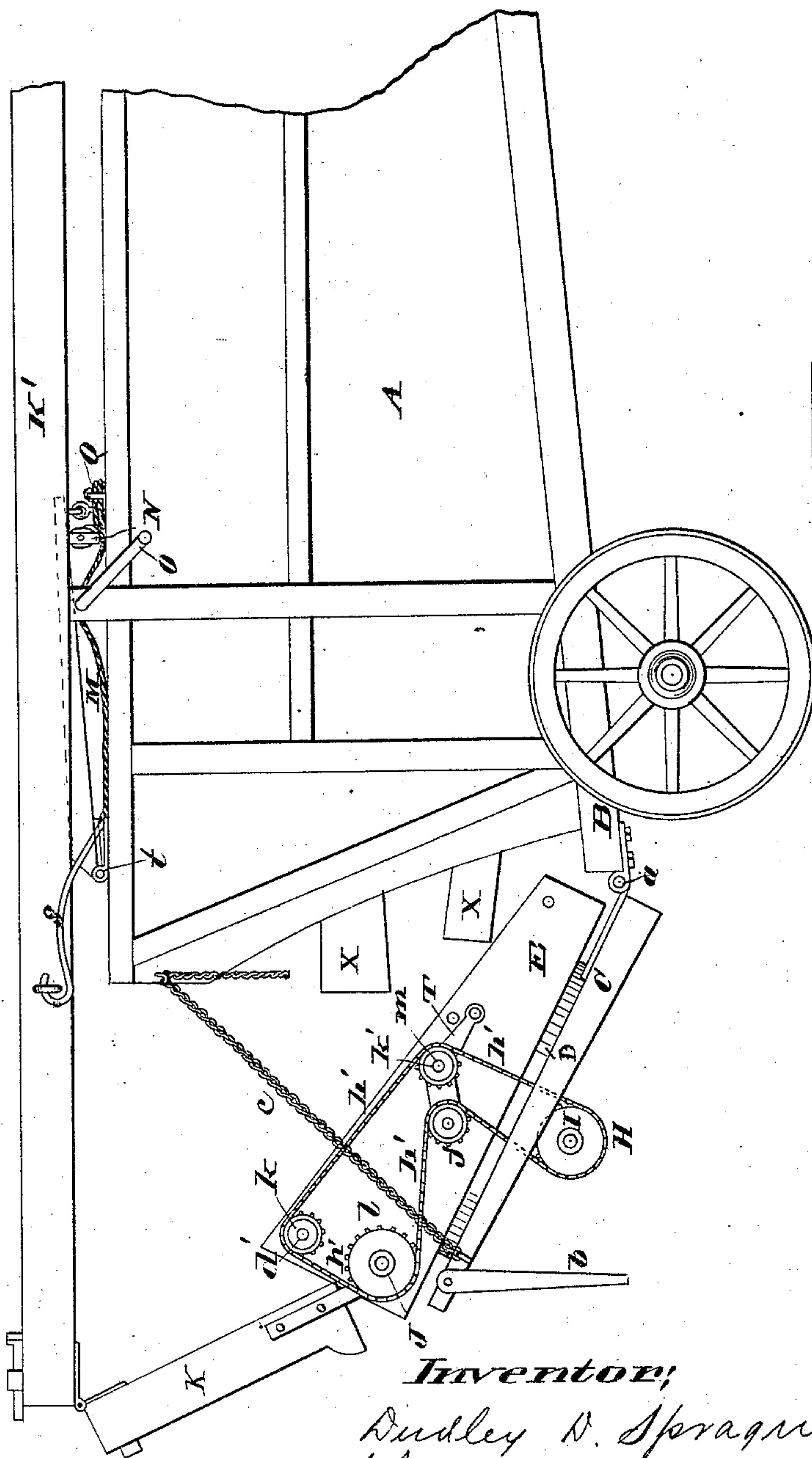
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Fig. 6.



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UNITED STATES PATENT OFFICE.

DUDLEY D. SPRAGUE, OF CALIFORNIA, CHARLES D. SPRAGUE, OF CHILHOWEE, AND PEARLEY J. SPRAGUE, OF HIGBEE, MISSOURI; SAID CHARLES D. SPRAGUE ASSIGNOR TO SAID DUDLEY D. AND PEARLEY J. SPRAGUE.

STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 311,209, dated January 27, 1885.

Application filed January 29, 1883. (No model.)

To all whom it may concern:

Be it known that we, DUDLEY D. SPRAGUE, a resident of California, in the county of Monterey, CHARLES D. SPRAGUE, a resident of Chilhowee, in the county of Johnson, and PEARLEY J. SPRAGUE, a resident of Higbee, in the county of Randolph, State of Missouri, all citizens of the United States, have invented certain new and useful Improvements in Straw-Stackers for Thrashing-Machines; and we do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a view of our improved stacker and a portion of one side of the machine, and Fig. 2 is a view of the opposite side. Fig. 3 is a bottom view of the base of the stacker. Fig. 4 is a cross-sectional view, and Fig. 5 is a detail view, showing the arm for adjusting the intermediate carrier-frame, to which the elevator-frame is secured. Fig. 6 is a side elevation showing the stacker folded for transportation.

This invention has relation to straw-stackers for thrashing-machines; and it consists in the construction and novel arrangement of devices, as will be hereinafter fully described, and particularly pointed out in the claims appended.

In the accompanying drawings, the letter A represents the main frame of the separator, and B the sills thereof.

C indicates the supporting frame or base of the stacker, which is attached to the sills B, or other portion of the frame A, in rear, by strap-hinges or other flexible connections, as indicated at *a*. This frame C is supported at its outer end by a prop or props, *b*, made adjustable, in order to steady the frame C on uneven ground. By means of a guy-chain or guy-chains, *c*, connected to the outer end of the base or frame C and hooked to the main frame A, the stacker is supported when the machine is moving in changing its location.

On the frame C is secured a circular track, D, on which rests the pivoted frame E, which is held in position by means of the vertical center-pin or pivot-bolt F, which passes through a bearing of the frame E and is secured to the frame C, so that the frame E can be turned horizontally.

At the ends of the upper portion of the frame E are arranged in suitable bearings, as at *b'*, the transverse shafts *d d'* of the intermediate carrier, W, which is designed to receive the straw from the separator and deliver it to the long carrier or elevator K, the frame of which is pivoted to the outer end of the frame E. The elevator-frame is transversely divided into parts hinged together. Suitable bolts secure the parts in working position, as shown.

On the under side of the frame C, and in bearings *e e* thereof, is the driving-shaft G, which carries on its outer end the first driving wheel or pulley, *f*, and on its inner end a bevel-pinion, *e'*.

On the under side of the pivoted frame, and in bearings *g'* thereof, is the second driving-shaft, H, which carries on its inner end the bevel-pinion *e''*, and on its outer end a sprocket-wheel, I, which engages a chain belt, *h'*, which also engages the sprocket-wheels *j k l m*. By means of these or substantially similar gearing motion is communicated to the shaft *d'* of the intermediate or donkey carrier, and to the shaft J of the main carrier, which is pivoted in bearings of the frame E, as indicated at *f'*. The shafts G and H extend radially from the pivotal center of the frame C, and engage by their respective pinions, *e' e''*, an idle-wheel, *p*, on the pivot-bolt F. The idle-wheel *p* is made larger than the pinions *e' e''*, so that the traveling pinion *e''* will not come in contact with the stationary pinion *e'* of the shaft G when the pivoted frame is turned in lateral position. The sprocket-wheels *j* and *m* are connected to a take-up lever, T, which is secured to the frame E by means of a pin or bolt, *k'*, passing through said lever, and through the idle-wheel *m*. The wheel *j* is pivoted on the arm of the lever, and the chain

belt passes over it. This lever is used for taking up slack in the chain belt when necessary.

K represents the elevator-frame, which rests in pivotal bearings at the outer end of the pivoted frame E, somewhat below and at a suitable distance from the discharge end of the intermediate carrier, W. The outer portion of the elevator-frame K' is provided with a bail or guys, as indicated at s, to which is connected a centrally-arranged rope or chain, M, which extends over the pulley N to the governing-windlass O, and serves to support the elevator-frame in inclined position.

P indicates a supporting-frame or derrick, made of wood or iron, in angular form, having its lower ends connected to the top of the separator, near its rear end, by means of hinges or pivotal connections, as indicated at t, in order to allow the derrick to be folded down on the top of the separator. Connected to the top of the derrick is a guy chain or rope, Q, which extends forward and downward, and is connected to the top of the separator. This guy serves to prevent the derrick, when in raised position, from becoming too much inclined, holding it in position with its upper end directly over the pivotal center of the frame E.

The pulley N, over which the supporting-rope M passes, is hung from the upper end of the derrick P by a short chain or swivel connection, as indicated at v, so that the pulley will readily turn in adjusting itself to the different positions of the rope M when the elevator-frame and its pivoted frame are moved toward one side or the other. The lateral adjustment or turning of the pivoted frame can therefore be made while the machine is in operation without having recourse to special adjusting devices.

Attached to the discharge end of the upper pan or separating-floor of the separator are the lateral inwardly-inclined or contracting guide-boards or side pieces, X, which serve to compress or condense the straw as it is discharged from the machine upon the intermediate carrier of the stacker.

Z represents the controlling-arm of the stacker, which is secured to the pivoted frame E, and extends outward over and beyond the track of the frame C sufficiently to form a handle. The circular track is provided with an outer ratchet or series of notches, as indicated at r', and the arm Z with a ratchet-latch, y, adapted to engage the ratchet. The inner end of the ratchet-latch y passes through a bearing at y' on the arm Z, and its outer end is pivoted to a rocking hand-hold, z, having a spring, s', between said hand-hold and the lever, which forces the hand-hold outward and the latch y into engagement with the ratchet. By means of this device the pivoted and elevator frames can be turned and held in any desired position.

In another application, No. 149,594, filed the 5th of December, 1884, we have shown and

have claimed therein a folding stacker such as herein described, and we do not, therefore, claim such folding features in the present case.

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

1. The combination of a thrashing-machine, a pivoted laterally-swinging straw-elevator, and a pivoted conveyer intermediate of the machine and swinging elevator, to follow the lateral swing of the elevator and transfer the straw thereto.

2. In a stacker for thrashing-machines, the combination of a supporting-frame, a carrier-frame pivoted to turn on the supporting-frame, and an elevator-frame hinged to the carrier-frame to turn therewith, as set forth.

3. In a stacker, the combination of a pivoted horizontally-movable frame, an endless carrier in said frame, and an elevator-frame having an endless carrier and hinged to the movable frame, as set forth.

4. The combination, with the main frame of a thrashing-machine, of the pivoted horizontally-movable intermediate frame, a carrier, and a vertically-adjustable elevator-frame connected to the outer end of the intermediate frame.

5. In a stacker, the combination of a supporting-base, a driving-shaft mounted in bearings on the supporting-base, a carrier-frame, a shaft mounted in bearings in the carrier-frame, a pivot-bolt securing the frame to the base, gear-wheels connecting the shafts and pivot-bolt, a carrier, and an elevator-frame hinged to the carrier-frame, as set forth.

6. The combination, with a thrashing-machine and elevator-frame, of the frame hinged to the machine, and the carrier-frame mounted thereon intermediate of the elevator-frame and machine, as set forth.

7. In a stacker, the combination, with the laterally-swinging carrier-frame, and elevator-frame hinged thereto, of the track-bearing supporting-base under the carrier-frame, the central idle-wheel on a vertical pivot-pin, and the gear-shafts in bearings, respectively, of the track-bearing frame and carrier-frame, and engaging said idle-wheel, as set forth.

8. The combination, with the hinged folding derrick, its pendent or swiveled pulley, the windlass, and rope or chain extending therefrom, of the elevator-frame, an intermediate laterally-swinging carrier-frame, and a supporting-frame, as set forth.

9. The combination of a thrashing-machine, a supporting-frame hinged thereto, a carrier-frame mounted on the supporting-frame, and an elevator-frame hinged to the carrier-frame and transversely divided, the divided parts being hinged together, as set forth.

10. The combination of a supporting-frame pivoted horizontally, movable carrier-frame, short carrier W, supported on shafts d d', having bearings in the short carrier-frame, a

driving-wheel, and wheels to carry suitable belts to connect the driving-wheel with a shaft of the short carrier, as set forth.

11. The combination of a supporting-frame, 5 the pivoted horizontally-movable frame E, short carrier W, elevator-frame secured at the rear of the movable frame, the carrier-shafts d d' , and the sprocket-wheels I, m , k , l , and j , as set forth.

10 12. The combination of the short carrier W, pivoted frame E, elevator-frame, carrier-shaft J, short carrier-shafts d d' , and sprocket-wheels I j k l m , as set forth.

13. In a stacker, the combination of a sup-

porting-frame, laterally-swinging carrier - 15 frame, a circular notched track on which the carrier-frame is mounted, and an arm rigidly secured to the carrier-frame, having a latch to engage the notched track, as set forth.

In testimony whereof we affix our signatures 20 in presence of two witnesses.

DUDLEY D. SPRAGUE.
CHARLES D. SPRAGUE.
PEARLEY J. SPRAGUE.

Witnesses:

T. J. MOSS,
JOHN M. RENNOLDS.