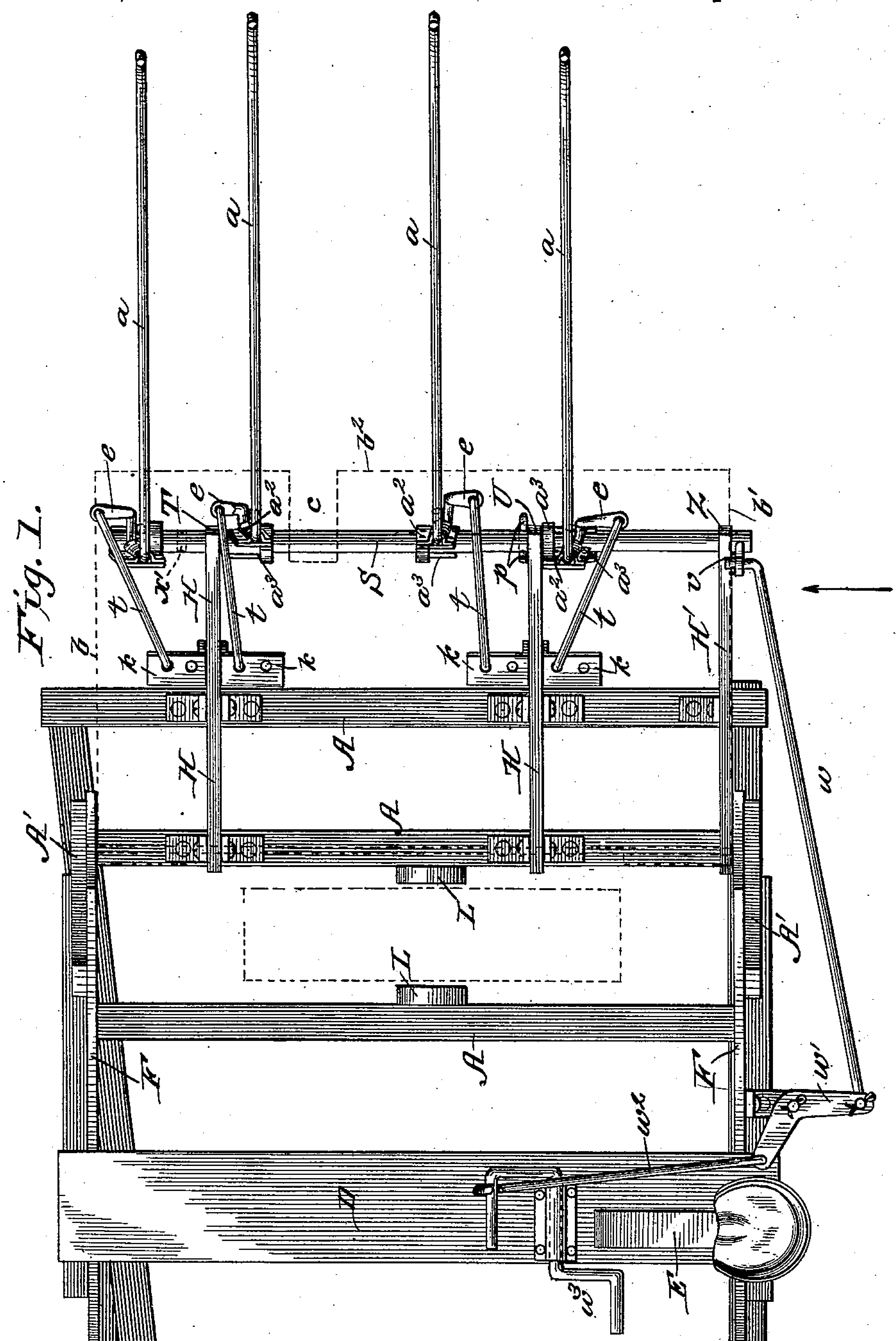
(No Model.) 4 Sheets—Sheet 1.

A. JEWELL.

SHEAF CARRIER FOR SELF BINDING HARVESTERS.

No. 472,885. Patented Apr. 12, 1892.



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ATTORNEYS

(No Model.) 4 Sheets—Sheet 2.

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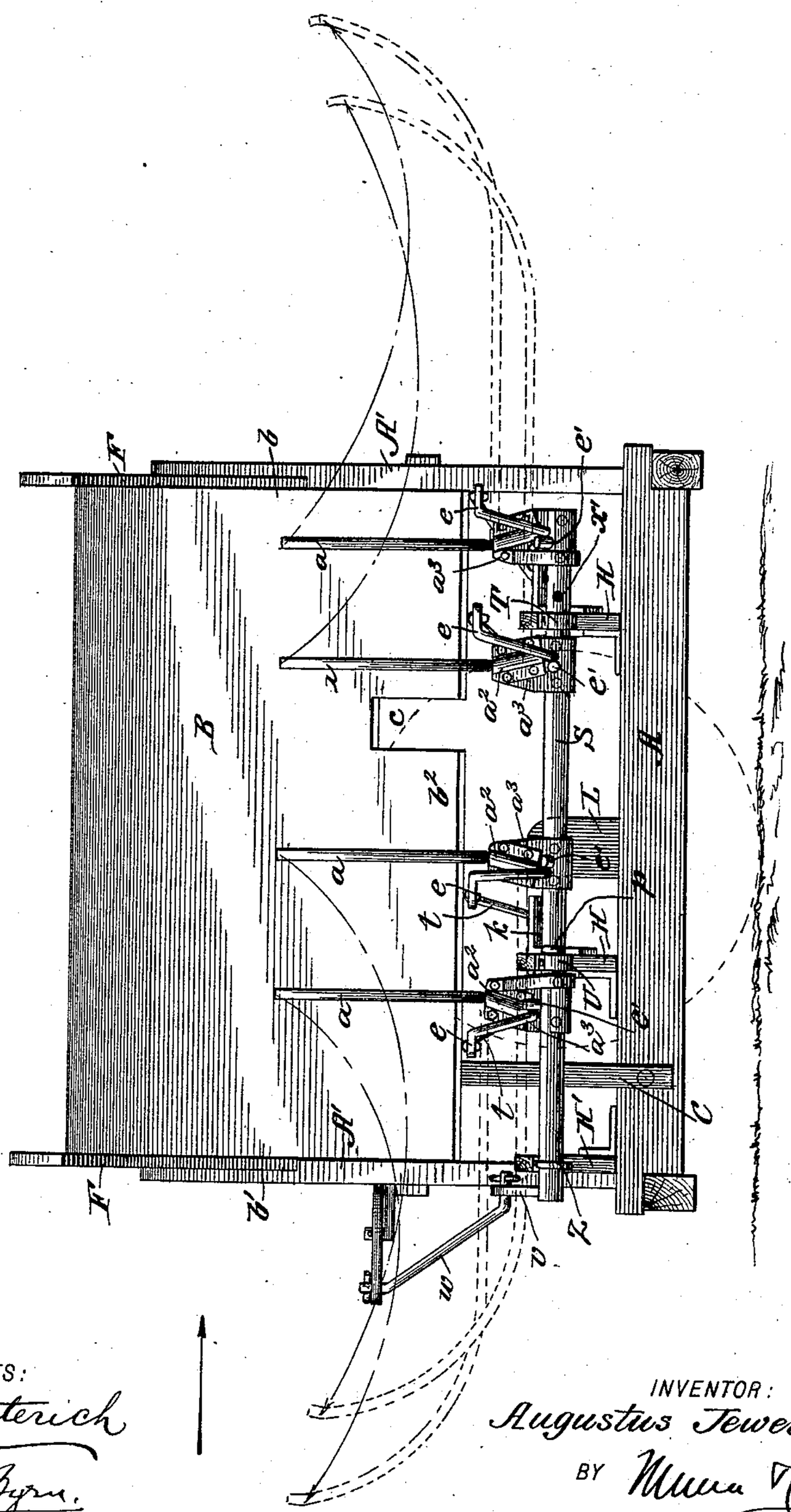
Fig. 2.



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(No Model.) 4 Sheets—Sheet 3.

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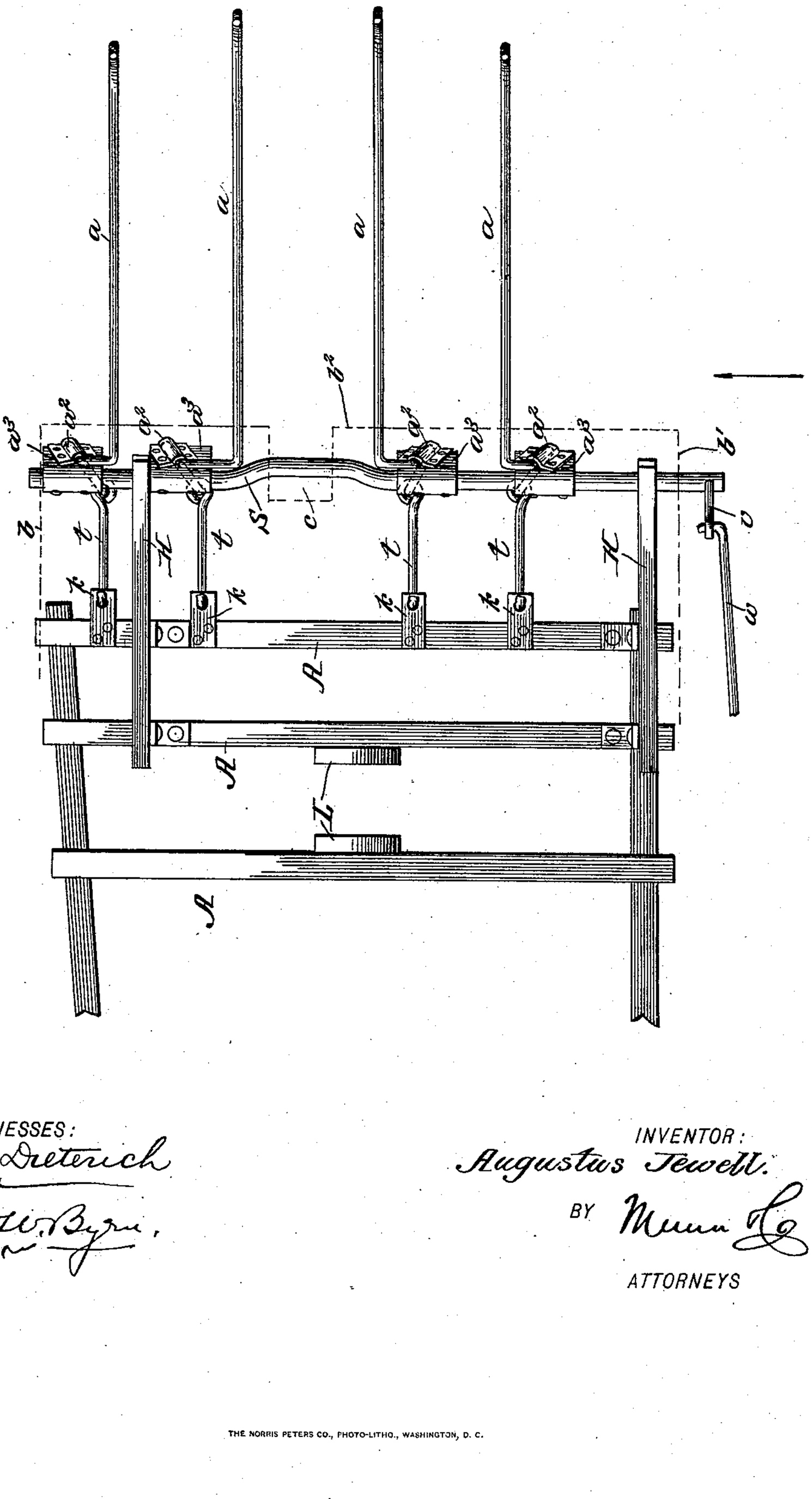
Fig. 3.



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(No Model.) 4 Sheets—Sheet 4.

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Fig. 4.

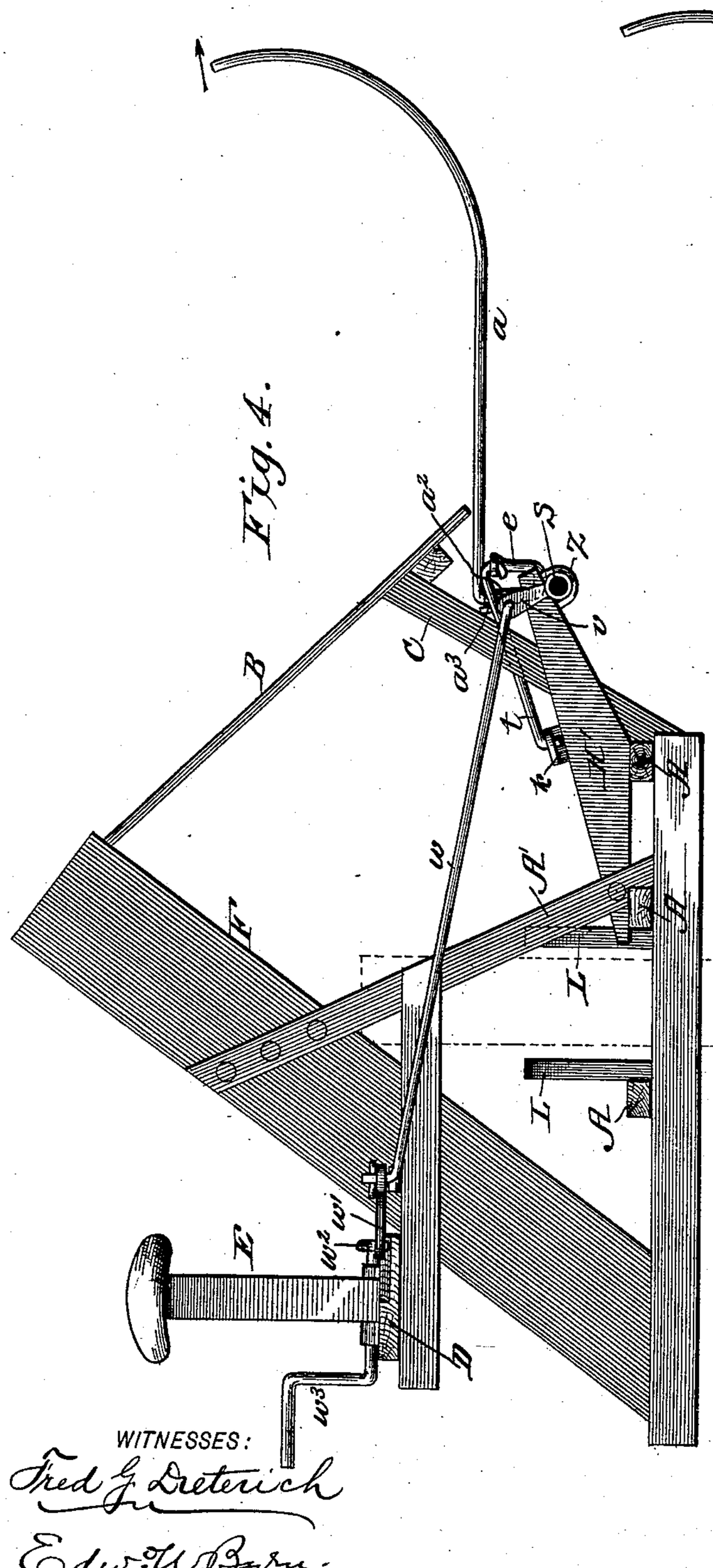
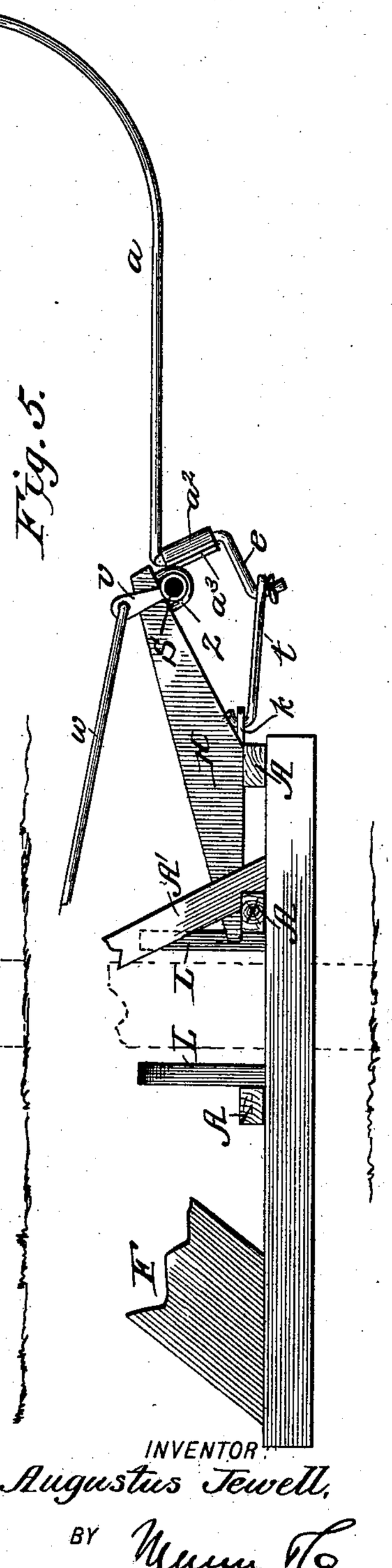


Fig. 5.



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UNITED STATES PATENT OFFICE.

AUGUSTUS JEWELL, OF DOWAGIAC, MICHIGAN.

SHEAF-CARRIER FOR SELF-BINDING HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 472,885, dated April 12, 1892.

Application filed November 25, 1891. Serial No. 413,040. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS JEWELL, residing at Dowagiac, Cass county, in the State of Michigan, have invented a new and useful Improvement in Sheaf-Carriers for Self-Binding Harvesters, of which the following is a specification.

My invention has for its object to provide an improved attachment for self-binding harvesters for receiving the sheaves when bound and depositing the same in bunches or windrows.

In the drawings forming a part of this specification, Figure 1 is a top or plan view of parts of the framing of a harvester with my improved device applied thereto, this view showing the binding-table removed and indicated in dotted lines in order the better to show my improvement. Fig. 2 is an elevation of the binding-table and portions of the harvester-framing with my improved device applied thereto viewed from the outer or stubble end of the carrier and showing the sweep of the carrier-arms. Fig. 3 shows in plan view the sills and parts of the harvester-framing aforesaid with a modified form of my improvement applied thereto, which latter may be preferred on some harvesters to the construction shown in Figs. 1 and 2. Fig. 4 is a rear end elevation of the construction shown in Figs. 1 and 2, looking in the direction of the arrows. Fig. 5 is a similar view with parts broken away of the modification shown in Fig. 3.

A A represent the sills of a harvester, and A′ A′ and F F and D represent parts of the elevated framing common in harvesters.

E is the inclined board common in harvesters, at the top of which the driver's seat is located.

L L, Figs. 1 and 3, represent the bearings of the harvester's driving-wheel.

B represents the inclined binding-table of a harvester, having a slot at its lower side, through which work parts of the automatic binding mechanism, and C, Figs. 2 and 4, is a post supporting the lower edge of binding-table B.

In Figs. 1 and 3 the dotted line *b* represents the forward edge, *b′* the rear edge, and *b*² the lower edge, of said binding-table, from under which lower edge the carrier-arms project approximately horizontally until nearing their outer ends, where they preferably curve upwardly, as shown in Figs. 4 and 5.

In attaching my carrier to the different kinds of harvesters the beams and supports which I use for doing so must be different on every different make of harvester, as frequent changes are made in these frames and no two harvester companies make frames alike.

H H represent beams rigidly secured to sills A A and projecting obliquely upward and outward.

S is a rock-shaft located under the binding-table with its length in a position approximately parallel with the line of advance of the harvester. Said rock-shaft is preferably a hollow metal pipe and is supported in suitable bearings T and U, secured to the outer ends of beams H H.

In Figs. 1 and 2, H′ is a beam with a bearing Z for keeping the rear end of rock-shaft S from springing inward and allowing the outer or stubble end of the carrier to sag down when the carrier is locked for loading, beam H′, with bearing Z, permitting a lighter rock-shaft S to be used.

Carrier-arms *a* are each preferably made of one piece of metal, each turned downwardly near its inner end to form a journal or axis, these axes being with my present experience preferably inclined, (see Fig. 2,) with the tops of the two front axes each inclined inward and rearward from the vertical and with the tops of the two rear ones each inclined inward and forward from the vertical when the carrier is closed for receiving and carrying the sheaves; but further experience may prove that this inclination of the axis from the vertical is not necessary, and I do not confine myself to it. In the construction shown these axes are arranged to each partially turn in a suitable bearing *a*², Figs. 2 and 4, these bearings being rigidly secured to rock-shaft S and projecting upwardly and inwardly from said rock-shaft in the construction shown in Figs. 1 and 2 and downwardly and outwardly from said rock-shaft in the construction shown in

Figs. 3 and 5 when the carrier is closed for loading. I do not confine myself to the particular form of bearing a^2; but any other suitable bearing, as before mentioned, may be used. Arms a are each provided with a crank e under said binding-table. These cranks may be made, as in Figs. 1 and 2, by bending each arm a horizontally outward from the lower end of its journal—say three inches—thence upwardly and forwardly for the two front cranks and upwardly and rearwardly for the two rear ones. Pins e', Fig. 2, will keep the front carrier-arms from swinging too far back and the rear ones from swinging too far forward when the arms are thrown to the closed position for loading; but any suitable stops will answer the purpose of pins e' and any suitable cranks will be sufficient in the construction shown in Figs. 1 and 2, whose ends are sufficiently above the axial line of rock-shaft S, substantially as shown.

Cranks e are preferably made, in Figs. 3 and 5, by bending arms a obliquely inward from the lower ends of their journals, and the ends of the cranks must be sufficiently below the axial line of rock-shaft S in the construction shown in Figs. 3 and 5. With cranks e is combined a set of short anchorage-bars t, Figs. 1, 2, and 3, these anchorage-bars being disposed each with its length crosswise or transverse to the line of advance of the harvester, and each having one end connected with a rigid keeper k, Figs. 1 and 3, in a manner to allow its other end to move correspondingly with the active ends of said cranks. In Figs. 1, 2, and 4 these anchorage-bars act to dump as pull-bars, while in Figs. 3 and 5 they act to dump as push or thrust bars.

In the construction shown in Figs. 1 and 2 the rock-shaft is low enough where it passes under slot c in binding-table B to avoid conflict with the binding mechanism, which works through and below said slot. This same object may be accomplished, however, in the construction shown in Fig. 3 by bending rock-shaft S downwardly and outwardly where it passes under said slot, as shown.

In the construction shown in Fig. 3 the carrier-arms are with my present experience preferably constructed by offsetting the two front arms toward the rear from their journals and the two rear arms toward the front from their journals; but I do not confine myself to the use of these offsets.

In Fig. 2 a key or pin p, just forward of the rear bearing U, prevents any fore-and-aft movement of rock-shaft S in its bearings. This key may be removed and the rock-shaft S pushed back till the front bearing T strikes the upwardly-projecting bearing of the front carrier-arm, the key being then placed in a hole x' in shaft S just back of said front bearing T. The inner ends of each of the anchorage-bars t will be at the same time changed to the back hole in each of the keepers k in Fig. 1, and the carrier is thus adjusted a few inches farther back for working in rye or other extremely tall grain.

For operating the carrier-arms the shaft S is worked through a crank-pin v and connecting-rod w. When this crank-pin is forced outwardly by the connecting-rod the shaft S is turned in its bearings, so as to throw the bearings of the carrying-arms outwardly and downwardly in Figs. 1, 2, and 4 and inwardly in Figs. 3 and 5. In this movement the anchorage-bars exert a secondary action upon the cranks of the arms a, which (see Fig. 2) throws the outer ends of the two front arms a downwardly, forwardly, and upwardly and the outer ends of the two rear arms a downwardly, rearwardly, and upwardly, dropping the load between.

To operate the main connecting-rod w, its inner end is pivoted to an elbow-lever W', Fig. 1, and the other arm of this lever is connected by a rod w^2 with a locking-crank treadle w^3, which is operated by the driver's foot.

It is necessary that the carrying-arms should have a downward movement in order to invoke the aid of the weight of the load to assist the driver in dumping, and I now prefer that the outer or free ends of arms a should have a decided downward movement at the beginning and a rising movement at the close of the opening stroke; but further experience may prove that these ends need have no more downward movement than can be given by the construction shown to the inner ends of the projecting portions. This downward dip can be lessened by giving more inclination rearward to the tops of the axes of the front arms and more inclination forward of the tops of the axes of the rear arms. This downward dip can also be lessened by lessening the distance between the end of each crank and the line of its axis, and the downward dip can be increased by increasing said distance.

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

1. A sheaf-carrier for self-binding harvesters, consisting of an approximately-horizontal rock-shaft, said rock-shaft provided with suitable axial bearings for the carrier-arms, a set of carrier-arms journaled therein and provided with cranks, said cranks having their ends removed from the axis of said rock-shaft, a set of suitable stationary keepers, and a corresponding set of anchorage-bars connecting said keepers with said cranks, substantially as set forth.

2. A sheaf-carrier consisting of an approximately-horizontal rock-shaft provided with upwardly-projecting axial bearings for the carrier-arms, a set of carrier-arms journaled therein and the carrier-arms provided at the lower ends of their journals with cranks bent obliquely upward, a corresponding set of anchorage-bars connected to the cranks above

the rock-shaft, and stationary keepers for connection with the inner ends of said anchorage-bars, substantially as set forth.

3. A sheaf-carrier consisting of an approximately-horizontal rock-shaft made adjustable longitudinally in its bearings and having axial bearings for the carrier-arms, the carrier-arms journaled in said bearings and provided with cranks, anchorage-bars connecting with said cranks, and keepers for the anchorage-bars provided with an adjustable connection for said bars, substantially as set forth.

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Witnesses:
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