

(No Model.)

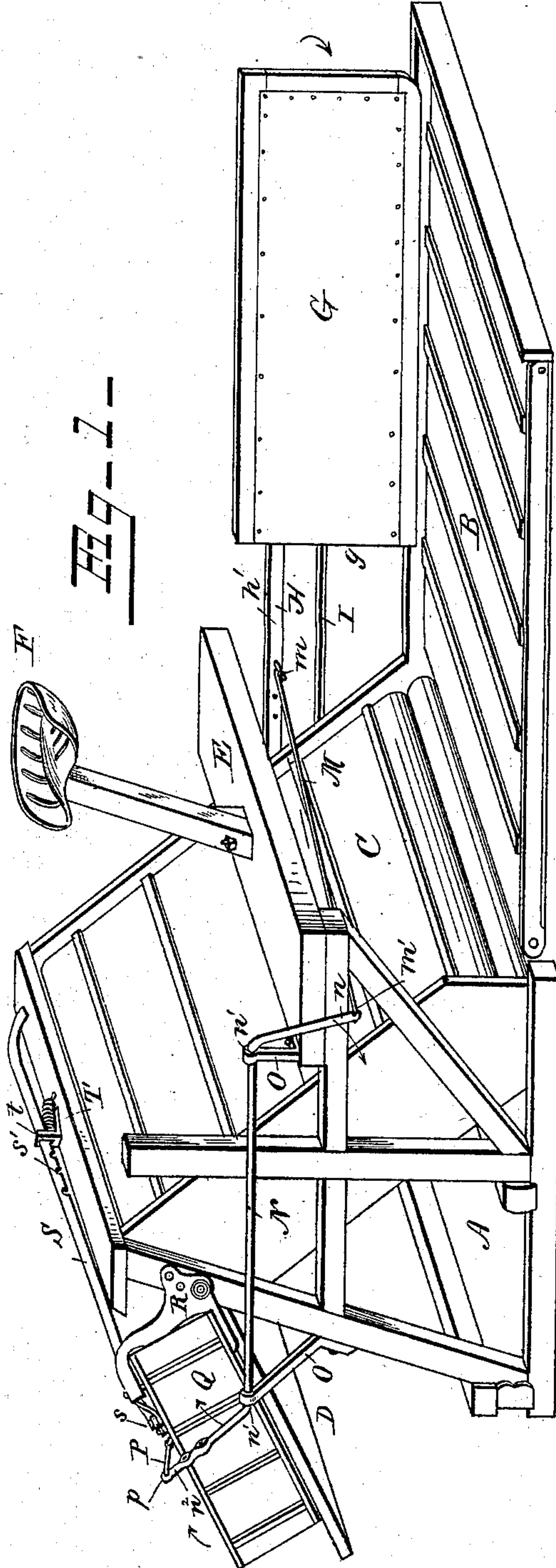
2 Sheets—Sheet 1.

I. E. ARNER.

ATTACHMENT FOR HARVESTERS.

No. 272,016.

Patented Feb. 13, 1883.



WITNESSES

F. L. Curran
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INVENTOR

J. E. Arner
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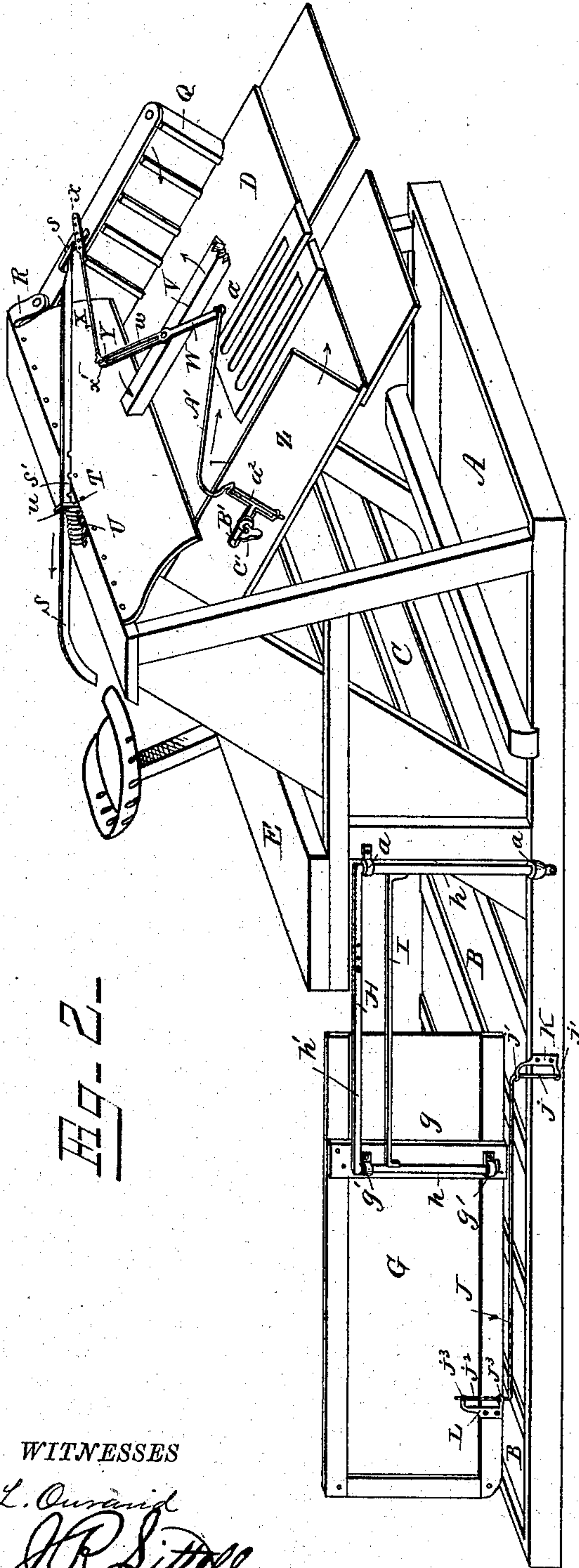


Fig. 2-

WITNESSES

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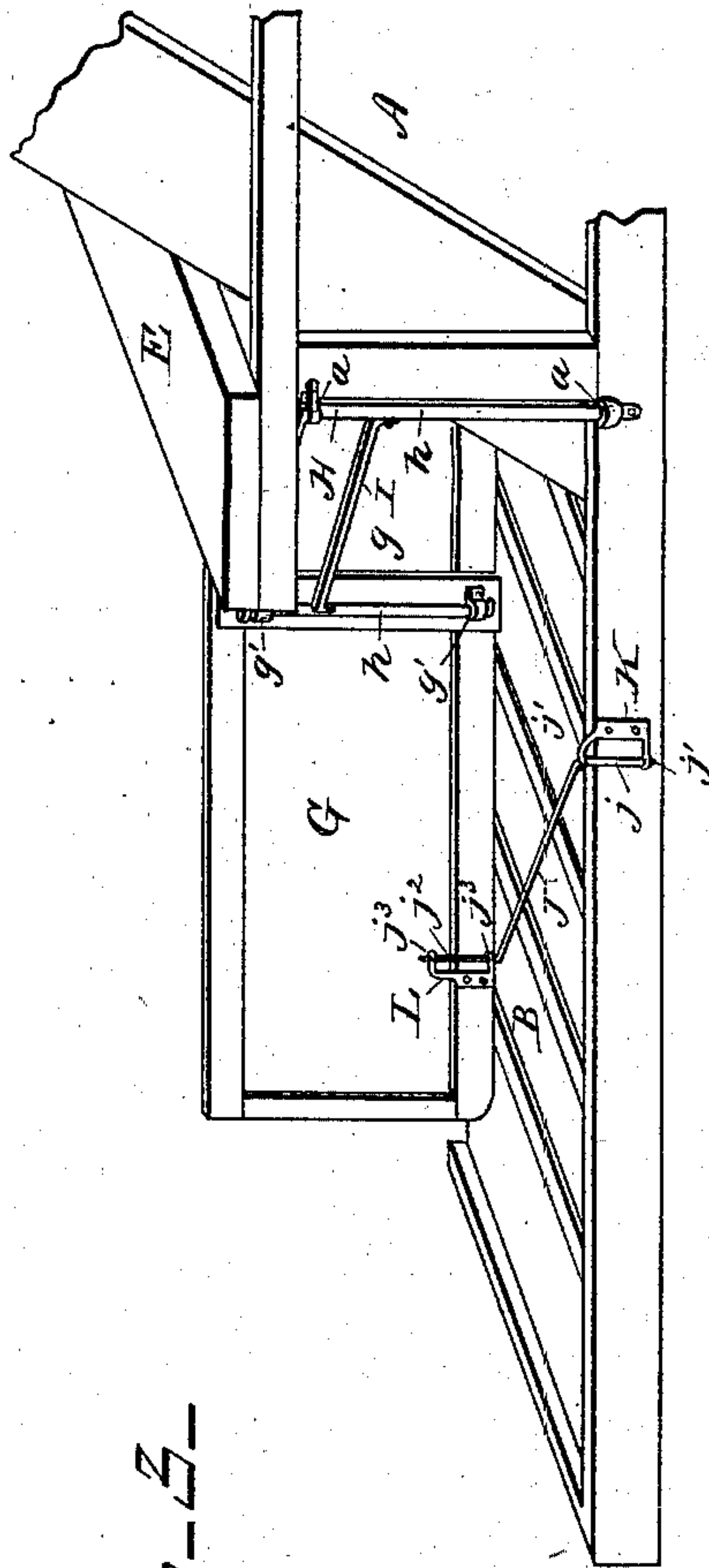


Fig. 3-

INVENTOR

I. E. Arner
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UNITED STATES PATENT OFFICE.

IRVING E. ARNER, OF HOLLOWAY, MICHIGAN.

ATTACHMENT FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 272,016, dated February 13, 1883.

Application filed October 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, I. E. ARNER, a citizen of the United States, residing at Holloway, in the county of Lenawee and State of Michigan, have invented a new and useful Attachment for Harvesters, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to self-binding harvesters, and has for its object to provide simple, efficient, and conveniently-operated mechanism by which the head and butt guides on the binder deck or table, and also the back board at the rear of the carrier or platform apron on which the grain falls, may be quickly and readily operated by the driver from his seat.

Heretofore the "back board" of the carrier-apron has been supported in a fixed position by a bar bolted to the under side of the seat-plank, and to adjust the apron it is necessary to operate the bolts and move said supporting-bar. Under these circumstances the back board can only serve the function of preventing the grain from being thrown over the back of the machine by the force of the reel; but in my invention the back board is rendered quickly adjustable to any desired angle, and the advantages gained by this construction are numerous and will be readily appreciated. The back board herein shown may be easily adjusted so as to adapt it to different lengths of grain, and it not only prevents the grain from being thrown over the back of the machine, but also prevents short grain from sliding too far back on the carrier-apron by being adjusted to the length of the grain. This backward movement of the grain is especially liable when cutting uphill, and by keeping the grain well forward the grain is held together and better action of the binding mechanism secured. Another advantage gained by the hereinafter-described arrangement of the back board is that it retards by friction the movement of the heads of the grain, which, being heavier than the butts, move faster generally, and the grain is thus kept in line as it passes to the elevator-apron.

Heretofore the head-guide on the binder-deck has been adapted to operate independently of the butt-guide, and has usually been forced inwardly by a spring. Consequently

the head-guide "gives" to the pressure of the grain, and does not effectively serve to force the grain into the desired position. Besides, as it is desired to bind the bundles in the middle, the grain should be placed upon the binder deck or table in the same manner in all cases, and this is not accomplished by a spring-actuated head-guide acting independently of an adjustable butt-guide, as heretofore constructed. To obviate these disadvantages I connect the head-guide to the butt-guide in such a manner that they will be operated together and at the same time by one movement of the butt-guide governing-rod, and thus no extra labor is caused for the driver. By means of this joint movement of the head and butt guides the former is fixed in the position to which it is adjusted, and will not yield to the grain, so that the grain is forced into the required position and the bundle will be invariably bound in the middle. The adjustable back board of the carrier-apron is suitably connected with the adjustable butt-guide of the binder-table. Therefore by one movement of the governing-rod of the butt-guide the latter, together with the head-guide and back board, are all relatively adjusted to suit the size of the grain. All of the adjusting mechanism and guides are in full view of the driver from his seat, so that the driver can by observing the back board as the grain falls determine the extent of adjustment necessary for the different guides and effect a relative adjustment by one movement of the said governing-rod, all as will be hereinafter more fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a front perspective view of a portion of a harvester having my improvements. Fig. 2 is a like view taken from the rear. Fig. 3 is a detail rear perspective view, showing the back board adjusted forward.

Referring to the drawings, A designates the frame of the harvester; B, the carrier-apron; C, the elevator-apron at the right of the latter; D, the binder table or deck; E, the seat-plank at the side of the elevator-apron, and F the driver's seat.

G is the longitudinally-disposed back board, which also serves as a head-guide, that is arranged and adapted to swing over the carrier-apron B. This back board, G, is hinged near

or at its inner edge, *g*, to the frame A by means of a substantially Ω -shaped bracket, H, the arms *h h* of which have bearings *a a* on frame A and bearings *g' g'* on back board, G. A cross-brace, I, is preferably arranged between arms *h h*.

J is a brace-rod having an end arm, *j*, which has bearings *j'* in a bracket, K, on frame A, some distance from the bracket H. The other end of rod J has an arm, *j*², having bearings *j*³ in a bracket, L, on back board, G, near its outer end. When the back board, G, swings forward on bracket H its outer end is supported by the swinging rod J, which also serves to retain the back board at right angles to the seat-plank E and to brace the back board in this position.

M is a cross-rod, which is adjustably pivoted to the top bar, *h'*, of bracket H at its (rod M) rear end, *m*, and extends forward, preferably under the seat-plank. The front end, *m'*, of rod M is pivoted to the crank end *n* of a longitudinally-disposed rock-shaft, N, having bearings *n' n'* in brackets O O on frame A. The end *n*² of rock-shaft N is cranked in a direction opposite to crank *n*, and is provided with suitable means, or is so constructed that a connecting-rod, P, pivoted to the top of the butt-guide Q, may be adjustably pivoted to its end *n*², as at *p*. By means of the adjustable connections at *p* and *m* the relative movement of the back board and butt-guide may be varied. The butt-guide Q swings over the binder-table D at the front side of the harvester, and is pivoted or hinged at its upper end to a bracket, R, on frame A.

S is the butt-guide governing-rod, which is pivoted to the top of the said guide at its front end, *s*, from which it extends rearwardly toward the driver's seat, and is provided with a rack portion, *s'*, that engages the bottom of a slot, *t*, in a plate, T, on top the elevator-frame. By this means the butt-guide is locked in the position to which it is adjusted, and a coiled spring, U, having an arm, *u*, which bears on rod S, is provided to hold the latter down in engagement with the bottom of slot *t*.

V is a beam arranged about centrally above the binder-table D, on which is pivoted a lever, W, connected at one end with the butt-guide by means of a rod, X. The latter is adjustably pivoted to the butt-guide at its end *x*, while its rear end, *x'*, is pivoted to a plate or block, Y, adjustable in a longitudinally-disposed slot, *w*, in lever W. The adjustment of rod X on lever W is thus secured, and this result may be secured by other mechanism, if desired. By means of this pivotal adjustment at both ends of rod X the swing of the head-guide Z in relation to the butt-guide is regulated, the head-guide being connected to the other end of lever W by a rod, A'. This rod A' is pivoted to the end of lever W, as at *a'*, while its other end, *a*², has bearings in a bracket, B', longitudinally adjustable by means of a set-screw, C', on the back of head-guide Z. The latter swings, like the

butt-guide, over the binder-table, and is pivoted or hinged at its upper end to the frame A.

The operation and advantages of my invention will be readily understood and appreciated. As the butt-guide is moved by its governing-rod the head-guide and back board are simultaneously moved by means of the connecting-rods, and the relative adjustment thereby effected by the one movement. The relative adjustment may be varied by regulating the adjustable pivotal connections of the different parts.

The mechanism is very simple and convenient in operation, and its action is certain and effective in practice.

I claim as my invention—

1. An adjustable back board for harvesters, arranged to swing over the carrier or platform apron, in combination with the adjustable butt-guide of the binder-table, means for adjusting said butt-guide, and connecting mechanism whereby said butt-guide and back board are adjusted by one movement, as set forth.

2. The combination of an adjustable swinging back board arranged over the carrier-apron, an adjustable butt-guide swinging over the binder-table, an adjustable head-guide likewise over the binder-table, and connecting mechanism whereby they are all relatively adjusted by the movement of any one of said guides, as set forth.

3. The combination of the frame of a harvester, a back board arranged to swing over the carrier or platform apron, a bracket having bearings on the frame and on the back board, on which bracket the latter swings, and a swinging brace-rod extension from the outer end of said back board to the frame of the harvester, as and for the purpose set forth.

4. The combination, with the binder-table, of a butt-guide and a head-guide, both swinging at opposite sides, a centrally-disposed beam, the governing-rod for operating said beam, a swinging lever pivoted on the same, a connecting-rod adjustably pivoted to the butt-guide and adjustably pivoted to one arm of the lever, and a connecting-rod pivoted to the other end of the lever, and adjustably pivoted to the head-guide, as set forth.

5. The combination of a back board arranged to swing over the carrier-apron, a hinged bracket supporting said board, a connecting-rod pivoted to said bracket and extending forward, a cranked rock-shaft pivotally connected to the butt-guide on the binder-table, and the governing-rod connected to said butt-guide, whereby both guide and back board are relatively adjusted by movement of either, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

IRVING EDDIE ARNER.

Witnesses:

A. W. MILLS,

CHARLES BURRIDGE.