

(No Model.)

2 Sheets—Sheet 1.

J. BARDILL.
CORN HARVESTER.

No. 485,522.

Patented Nov. 1, 1892.

Fig. I.

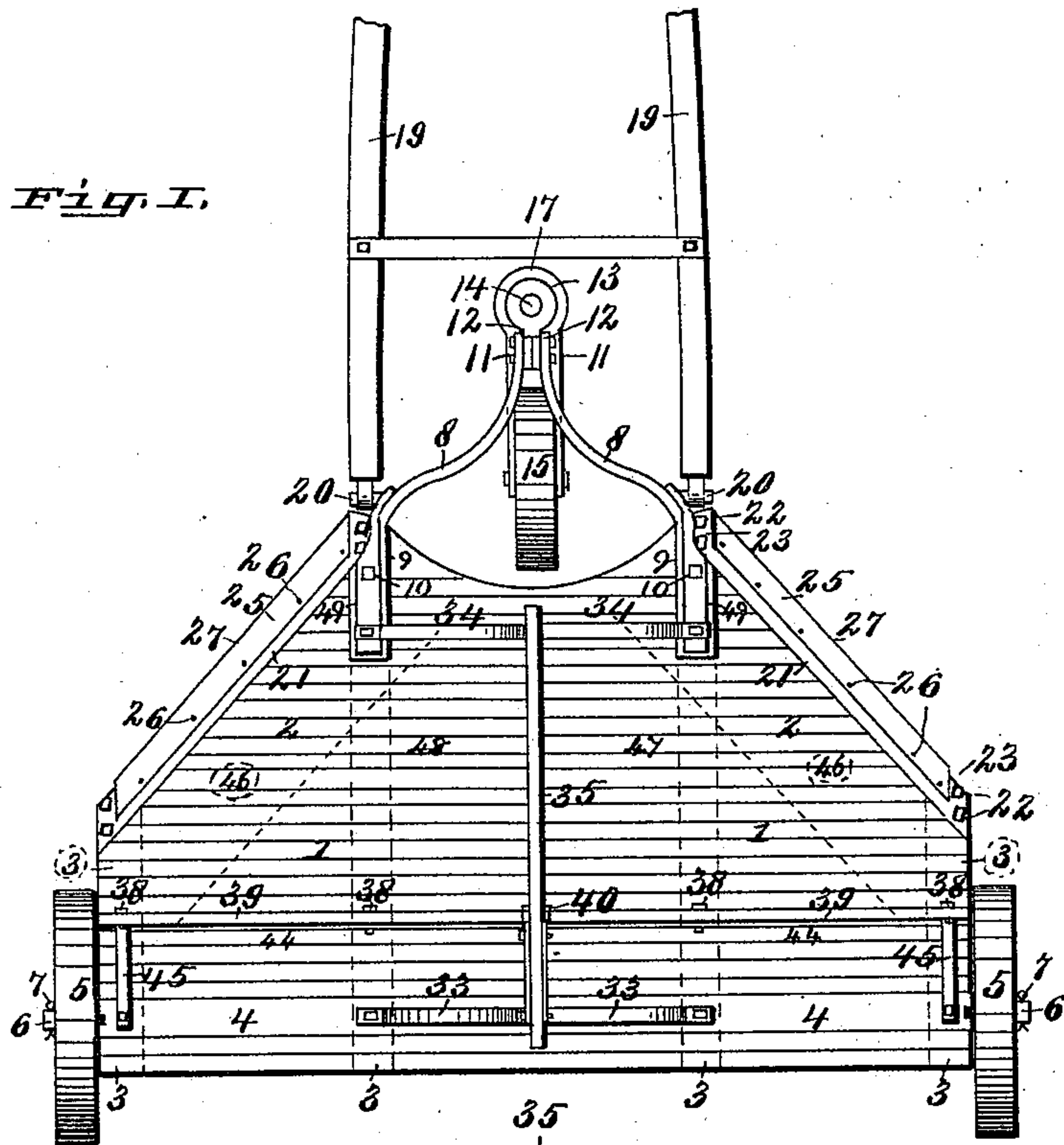
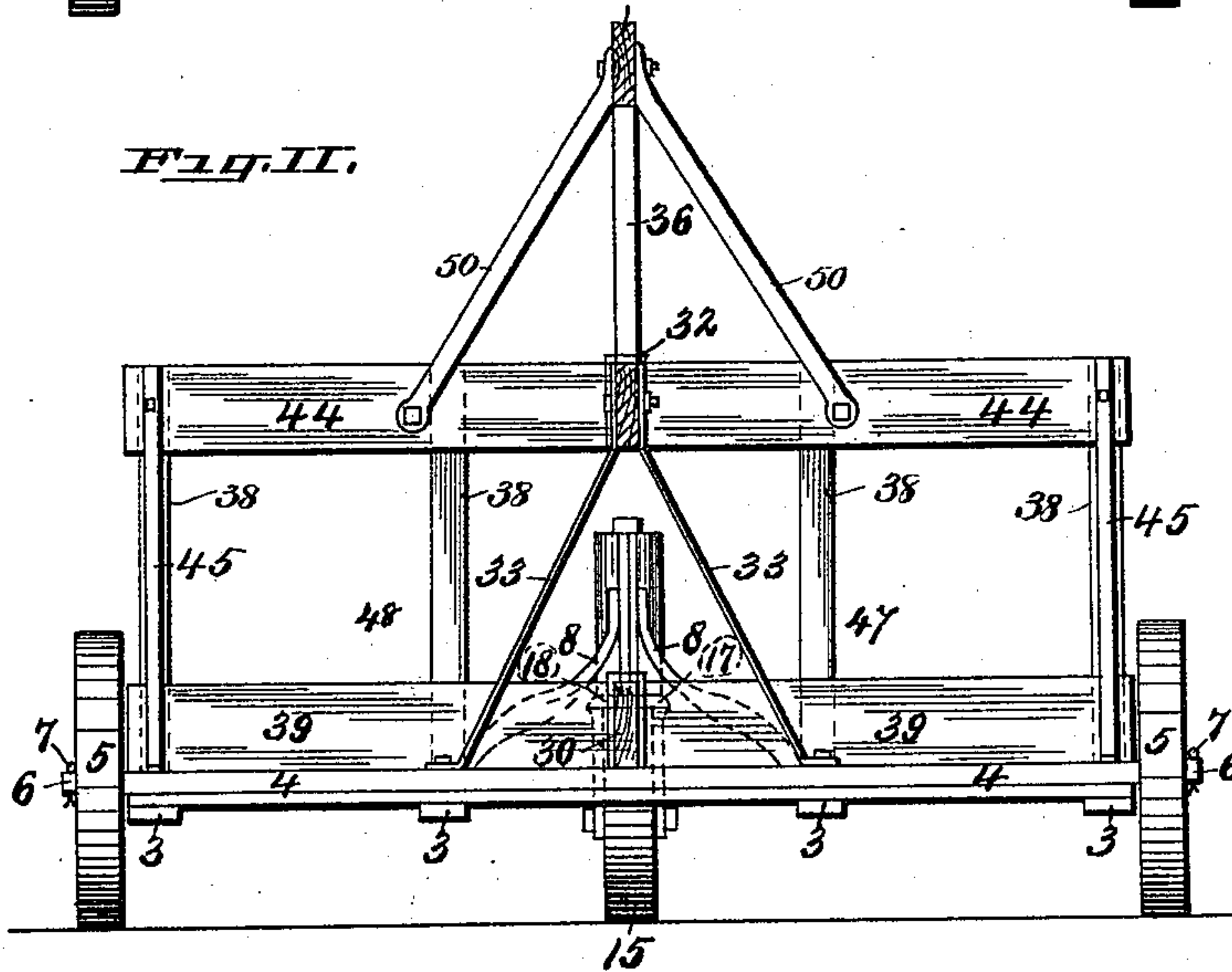


Fig. II.



Attest
Alfred W. Davis,
George E. Cress.

Inventor:
John Bardill.
By Knight Bros.
attys.

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Fig. III.

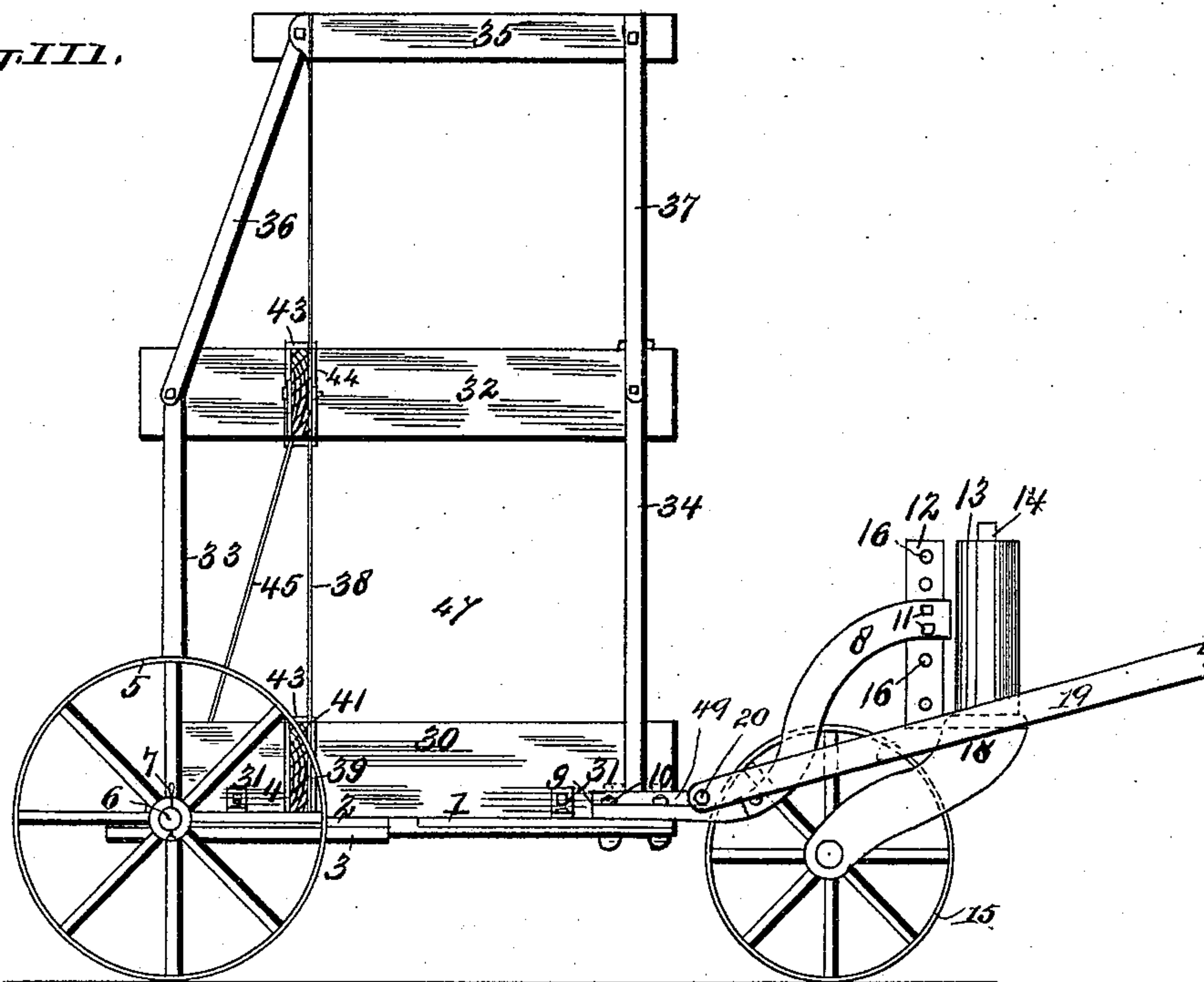
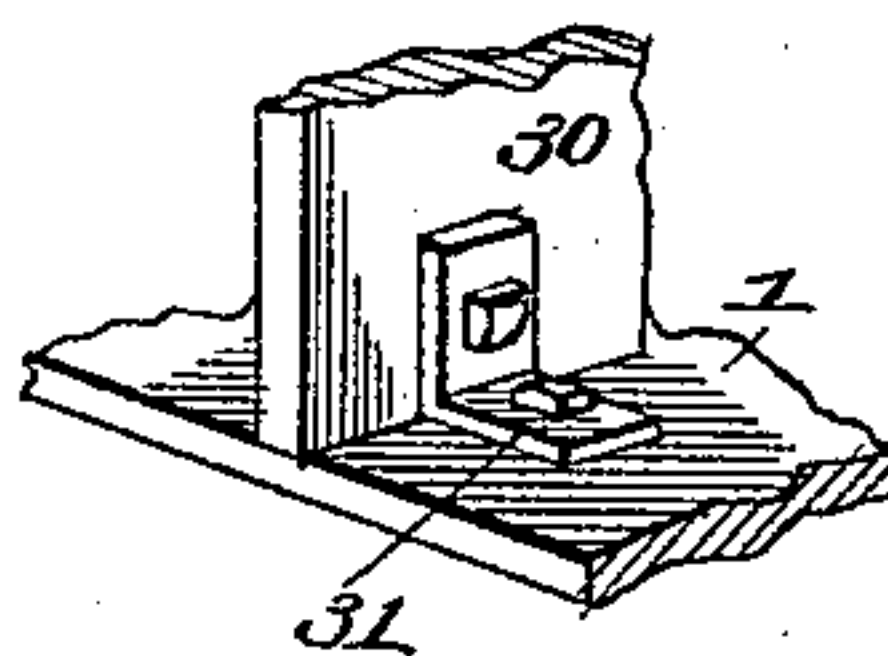
*Fol. VIII.*

Fig. IV.

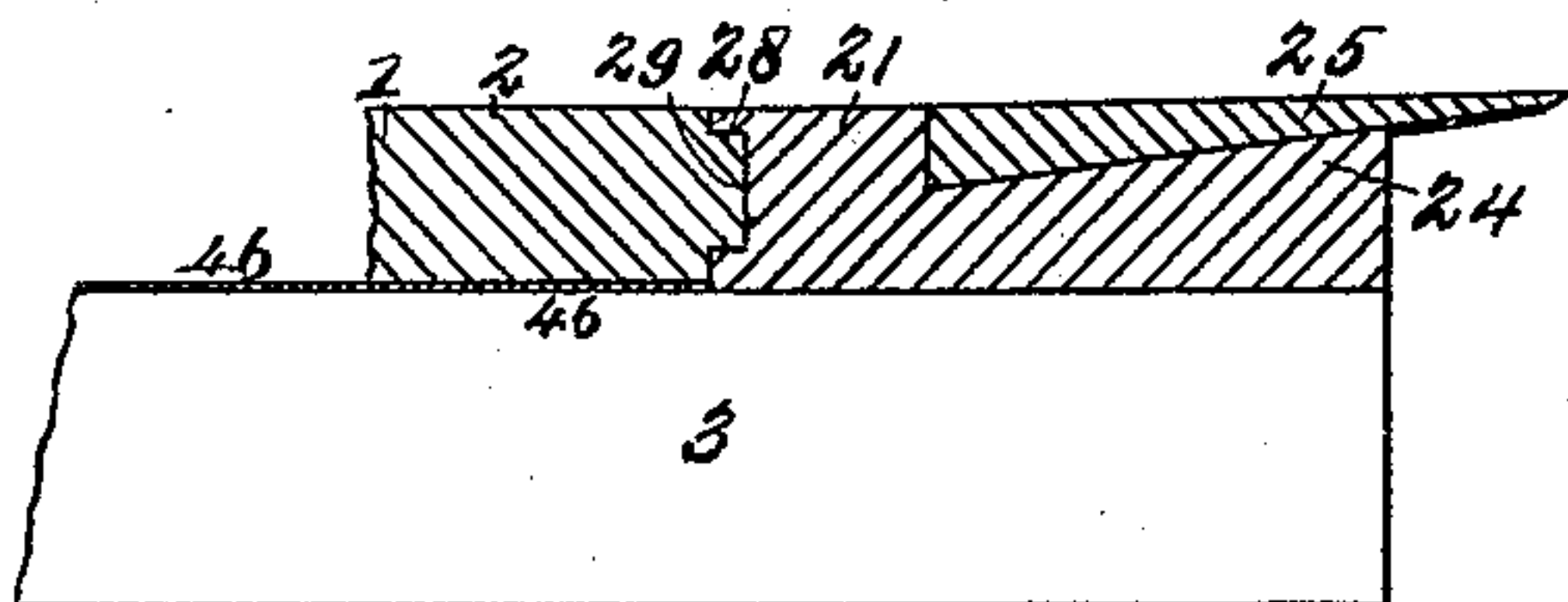


Fig. V.

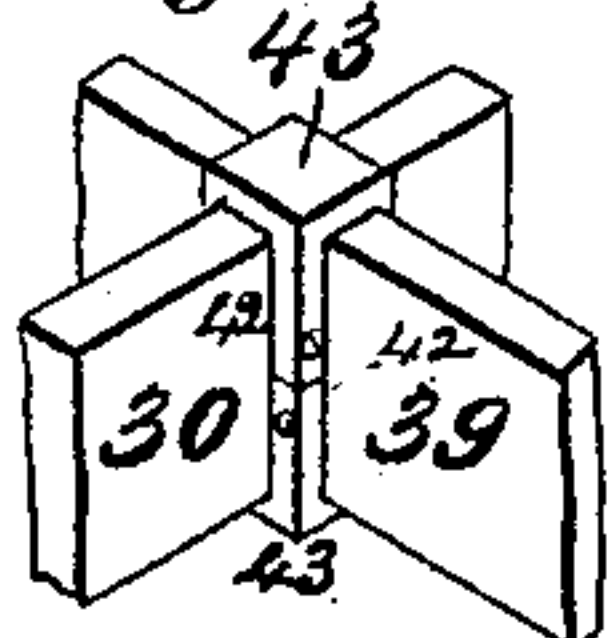


Fig. VI,

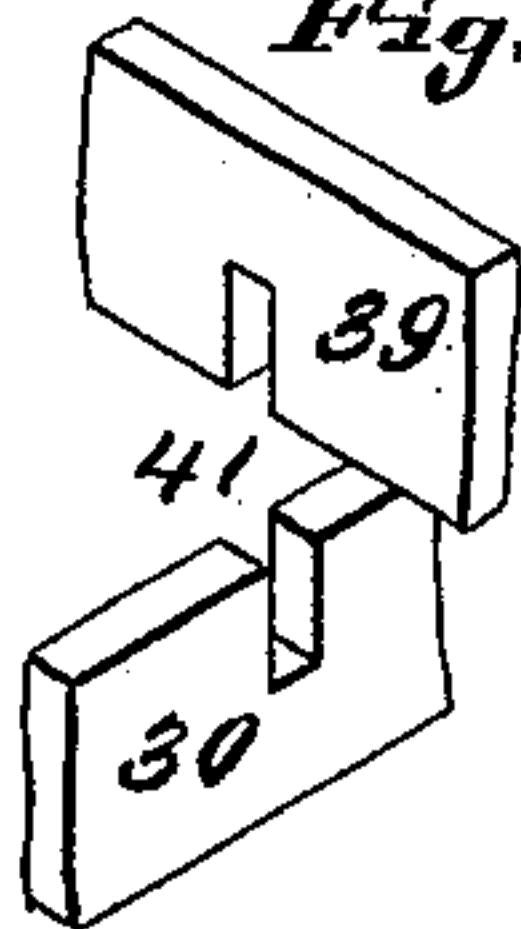
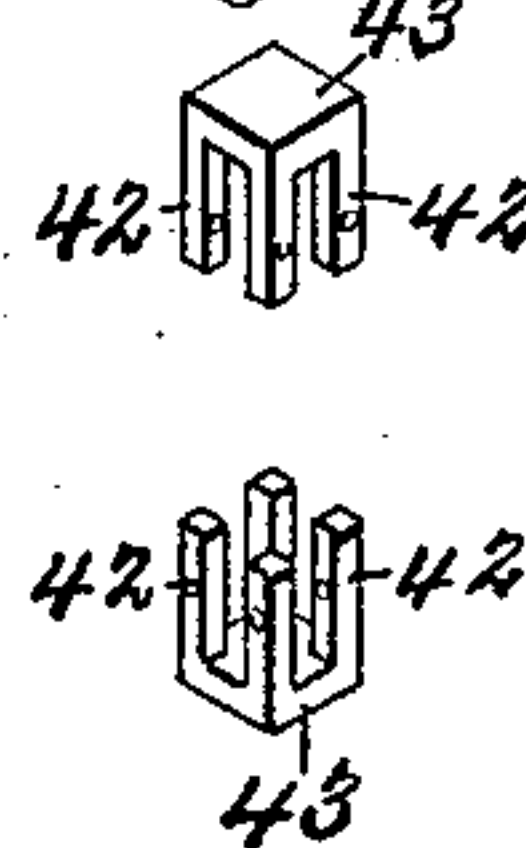


Fig. VII



Attest
 Alfred W. Davis.
 George E. Cruise.

Inventor!
John Bardell.
By Knight & Co's.
attys.

UNITED STATES PATENT OFFICE.

JOHN BARDILL, OF GRANT FORK, ILLINOIS.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 485,522, dated November 1, 1892.

Application filed November 3, 1891. Serial No. 410,776. (No model.)

To all whom it may concern:

Be it known that I, JOHN BARDILL, of Grant Fork, in the county of Madison and State of Illinois, have invented a certain new and
5 useful Improvement in Corn-Harvesters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 My present invention is an improvement on my corn-harvester on which a patent was issued to me on September 22, 1891, No. 459,987; and it consists in certain features of novelty hereinafter fully described, and pointed
15 out in the claims.

Figure I is a top plan view and shows the smooth unserrated knives secured to a metallic knife-holder bed, the stacking-platform, the combined main axle and heel-brace, the toe-guard, and the stack-divider partition. Fig.
20 II is a rear view and shows the combined main axle and heel-brace and the toe and breast guards. Fig. III is a side elevation and shows the running-gear of the harvester, the stack-divider partition, and the toe and breast
25 guards. Fig. IV is an enlarged vertical section and shows a detail of one of the platform-sills, the knife-holder bed, and the unserrated knife seated thereon; and Fig. V is a detail
30 perspective of the spider-clamp and shows an intersection of the respective cross-junctions of the divider-boards, the toe-guard, and breast-guard board. Fig. VI is a detail perspective
35 of the members of one of the cross-junction joints and shows said members each respectively half cut away, ready to effect a counter-lap cross-junction joint; and Fig. VII is a perspective of the spider-clamps, which
40 respectively clamp the cross-junction joint above and below. Fig. VIII is a detail view showing one of the brackets of the platform base-dividing board.

Referring to the drawings, 1 represents the stacking-platform, on which the cornstalks
45 mount when cut and on the rear of which the operators ride. The floor of said platform is constructed of boards 2, laid transversely on its line of motion and secured on the sills 3 longitudinal with said line.

50 4 represents the combined main axle and heel-brace, which is mounted on instead of beneath the platform, to which and to its sills

it is securely screw-bolted. By this surmounting disposition of the axle the platform is run
on a lower level than would otherwise be effected, which facilitates the mounting of the
55 cut corn on said platform and enables the setting of the knives with an upward-cutting incline, without thereby leaving the stubbles of the cornstalks too high. The said surmounting axles also provide an effective
60 brace for the heels of the operators as they reach to embrace the stacks of corn.

5 represents the rear wheels, which are mounted on the journals 6 of said axle and
65 retained thereon by the linch pins 7.

8 are the bearer-arms of the forward running-wheel, whose flanged attachment feet 9
are secured to the platform and its middle sills by the screw-bolts 10, and the forward
70 ends of said arms are secured by screw-bolts 11 to the rear flanges 12 of the journal-bearing pedestal 13, in which the journal-pin 14 of the forward caster-wheel 15 has its bearings. The said rear flanges of said journal-
75 bearing pedestals are also secured together by the bolts 16, and said pedestal has a foot turn-table bearing-flange 17, on which the hanger-crotch 18 of said caster-wheel has its
80 bearings as the caster-wheel is diverted in its course back and forth while running round slight obstructions on the surface of the field to avoid any diversion in the cutting through of the harvester.

19 represents the shafts to which the horse is
85 hitched, which shafts are preferably straight, or nearly so, and are mounted on the draft-bolt 20, whose foot-attachment flange 49 rests on the foot-flange 9 of the caster-arm shafts and is secured by the same bolts, as shown in
90 said figures.

21 represents the metal knife-holders, which are secured at a corresponding cutting-angle
to that of the forward cutting-lines at the front wings of the platform, at each side there-
95 of, and are there fastened to the projecting forward ends, respectively, of the outer and inner sills by the screw-bolts 22, that pass through the raised boxing ends 23 of said knife-holders and through said sills, and the
100 heads of which bolts are countersunk, so as not to project from the upper boxing-surface of the holder. 24 represent the countersunk knife-beds in said holders, (see Fig. IV,) which

have an upward forward incline sufficiently exceeding the bevel of the knives 25 to provide an easy upward-inclined cut for said knives, which are secured to said holders by the screw-bolts 26. The rear of the upper surface of said holders back of the knives, as well as the bolted ends of said holders, are on a level with the upper surface of the knives, which are thus countersunk to the same mean level, so as to present no frictional obstructions to the movement of the butts of the cornstalks. The upward incline of the knives greatly facilitates the cutting of the cornstalks, as the knives insinuate themselves much more readily than when the cut is made directly cross-grained of the stalks.

The knives are made, preferably, diverse from those of my previous patent having smooth edges 27 instead of serrated ones, so as, instead of said serrated nip cuts or chops, to provide an inclined glancing cut longitudinally along the edges of the knives, as stated, which knives not only incline upward, but also at a continuous smooth gradient horizontal incline outward toward their rear ends.

By "nip" or "chop" cut I mean the cut effected by serrated knives, for the cutting-edges thereof are so short that in consequence the stalks are seldom severed until they enter the notches and are nipped between the adjoining teeth, and sometimes the cut is not even effected, but the stalks are dragged from the ground.

The above-described both upwardly and horizontally inclined smooth cuts provide the following fourfold advantages: first, the economy of power, from the ease with which the glancing cut is effected; second, the ease with which the butts of the stalks slide to their mount of the platform instead of as with the serrated knives, that strike dead transversely of the stalk and chop rather than cut said stalk, that cannot glance along the face of the knife, but only into its V-nip, so it sometimes happens that stalks are pushed forward and overridden by said serrated knives; third, the ease with which said upwardly and rearwardly inclined smooth-edged knives slide and ride over roots, rocks, and other like obstructions against which the serrated-edged knives would come in dead contact, and, fourth, the durability of the knives themselves.

28 represents grooves on the rear sides of the knife-holders, in which fit the tongues 29 of the bevel edges of the connecting platform-boards, so that the platform and knife-holders have secure tongue-and-groove jointed connections.

30 represents the platform base-dividing or partition board, which runs longitudinally fore and aft in the middle of the platform and serves to divide apart the butts of the two sets of corn-stacks under the care of each operator, and which is secured to said platform by the brackets 31.

32 represents the intermediate dividing-

board, which is secured in vertical position above the base-board 30 about two feet six inches above the platform by the rear braces 33 and forward braces 34, the respective foot-flanges of which braces are secured to the platform and their respective top flanges to said intermediate dividing-board by screw-bolts.

35 represents the surmounting upper dividing-board that prevents the respective tops of the two stacks of corn from tangling, and which board is supported in its elevated position by the rear inclined stud 36 and forward vertical stud 37, which studs are secured at their respective ends by screw-bolts. The said upper dividing-board 35 is laterally held by the braces 50, which are bolted to it and to the hereinafter-described breast-board 44.

38 represents vertical studs, that are secured on each side of the platform, as also over the middle sills thereof, in a position about on line and in front of the toes of the operators' feet, and 39 is the toe-guard board, that is secured by screw-bolts to said studs close to said platform and which toe-guard board at its cross-junction joint 40 with the base-divider board 30 is, as also is said divider-board, half cut away at 41 to make said cross-joint fit, and the four sprawl-legs 42 of one of the spider-clamps 43 brace said cross-junction below, and a duplicate spider-clamp, with its sprawl legs, braces it on top, and said sprawl-legs of both spider-clamps are secured by screws, respectively, to each cross-junction board. (See Fig. V).

44 represents the breast-guard board, which, with its rear braces 45, is screw-bolted to said vertical studs 38, and at the cross-junction of said breast-guard board 44 with the intermediate divider-board 32 a duplicate cross-junction joint is effected like that previously described at the cross-joints between the toe-guard board and the base-divider board, half of each of the cross connecting-boards being cut away, as shown in Fig. VI, and also counter-lap, jointed together, as shown in Fig. V, the aforesaid spider-clamps shown in Fig. VII being also used to reinforce the joint above and below and there secured by screws to said boards, as shown in Fig. V.

46 represents sheet-iron shield-plates that are firmly secured by bolts or otherwise to the under side of the platform immediately back of the knife-holders and which are provided to break down the corn-stubbles as the machine passes over them, and thus bear the brunt of the initial contact therewith. By the time said stubbles have passed said iron shield they are sufficiently broken and bent to be harmless in passing under the rest of the platform.

In the operation of the machine as it is drawn forward back and forth across the corn-field along the rows of standing corn the smooth-edged inclined knives sever the stalks in their path, and said stalks slide up the in-

clined face of the knife on each side of the machine and mount the platform, respectively, in the compartments 47 and 48 on each side of the partition formed by the dividing boards 30, 32, and 35 and their supports, and the cut stalks gather against said dividing-boards and the intersecting toe and breast guard rails or boards, in the rear of the first of which the feet of the two operators stand, and over the last of which (the breast-rail) they reach to embrace the respective stacks of cornstalks and to remove them when snugly bunched together. It will be seen, also, that while the said threefold divider-boards prevent the tangling and intermingling of the two stacks of cornstalks at their butts, at their loaded centers and at their tassel tops, and forward them compactly up to the breast-guard and toe-guard rails, handy for removal by the operators, at the same time said guard-rails, in conjunction with the combined surmounting main axle and heel-brace, which is mounted above the platform and braces the operators' heels when leaning over said breast-guards, and thus poises said operators' bodies aright from overbalancing, and thus guards them from precipitation forward over said breast-guards and onto the knives.

The individual operations of the various elements of the device not met in my aforesaid previous patent have been described in their respective individual introductions, to which I refer to avoid repetition.

I claim as my invention—

1. In a corn-harvester, the combination of the stacking-platform, the rearwardly-inclined knife-holder secured to the projecting forward ends of the sills of said platform, the smooth-edged knives countersunk in said holders, the edges of said knives having an upward incline to facilitate the cutting of the stalks, and the tongues 29 on the bevel ends of the platform-boards, said knife-holders being provided with rear grooves 28 to receive said tongues, substantially as set forth.

2. In a corn-harvester, the combination of

the stacking-platform, the combined axle and heel-brace mounted on said platform, the wheels mounted on the axle, the base-divider board 30, the foot-guard board 39, the said boards 30 and 39 having a half-cut-away cross-junction joint, the spider-clamp 43, having the sprawl-legs 42, that hold the joint, the surmounting divider-board 35, the intermediate divider-board 32, and the braces that sustain said boards and secure them to said stacking-platform, substantially as described.

3. In a corn-harvester, the combination of the stacking-platform, the combined axle and heel-brace mounted on said platform, the rearwardly-inclined knife-holders secured to the projecting forward ends of the sills of said platform, the smooth-edged knives countersunk in said holders, the edges of said knives having an upward incline to facilitate the cutting of the stalks, the said knife-holders being provided with the rear grooves 28, the tongues 29 on the bevel ends of the platform-boards that engage in said grooves 28, the divider-boards that partition between the compartments 47 and 48 on said stacking-platform, the studs 38, the toe-guard 39, the breast-guard 44, the said guards secured to said studs 38, and the rear braces 45, that hold said breast-guard against the pressure of the corn-stacks, substantially as described.

4. In a corn-harvester, the combination of the stacking-platform, the combined axle and heel-brace mounted on said platform, the divider-boards 30, 32, and 35, the toe-guard and breast-guard boards, respectively, 39 and 44, the said guard-boards 39 and 44 having cross-junction half-cut-away joints with said divider-boards 30 and 32, the draft-shafts 19, and the spider-clamps 43, having the sprawl-legs 42, that clamp said cross-joints, substantially as described.

JOHN BARDILL.

In presence of—

ADOLPH RUEGGER,
AUGUST IBERG.