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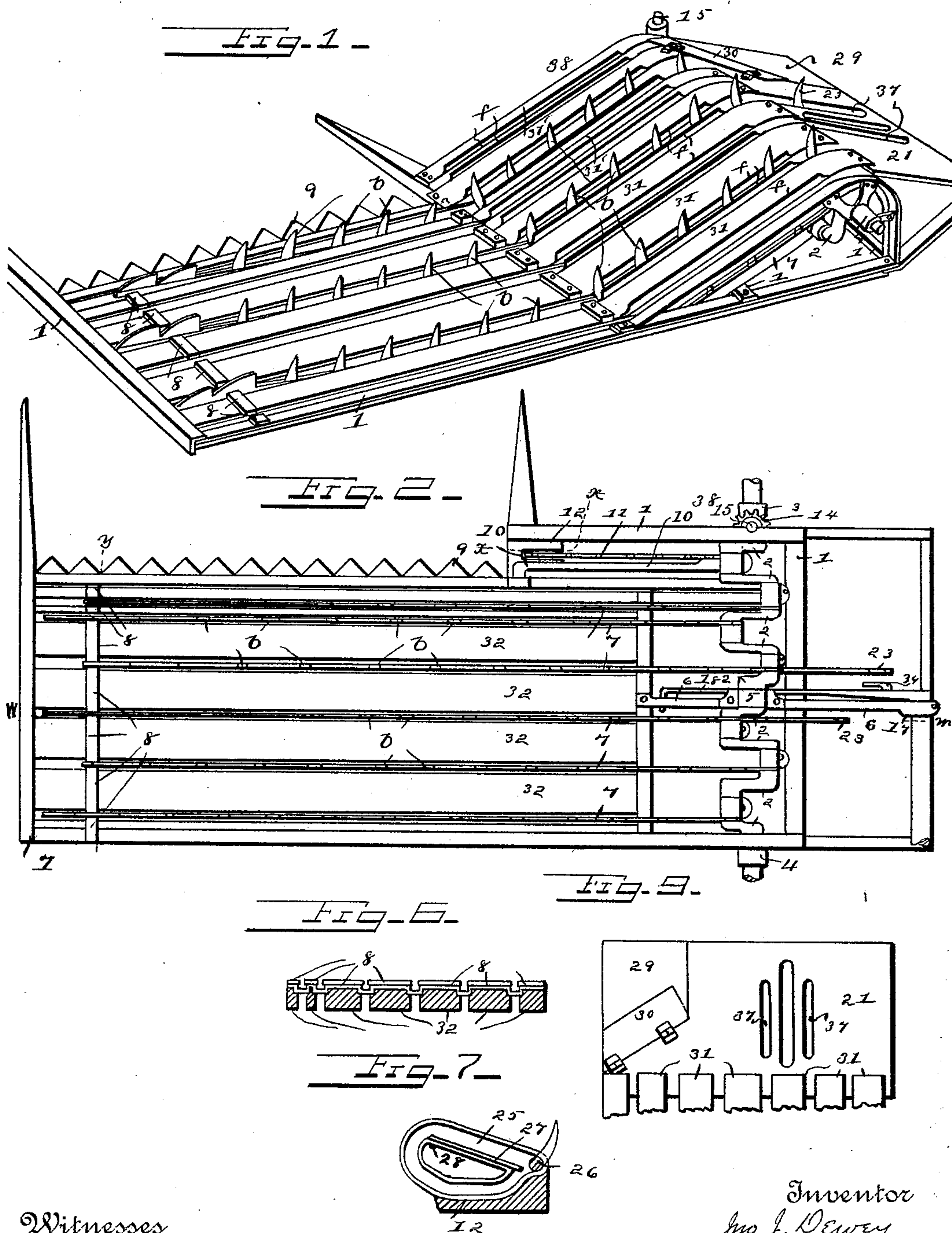
2 Sheets—Sheet 1.

J. J. DEWEY.

PLATFORM AND BINDER DECK FOR GRAIN HARVESTERS.

No. 500,321.

Patented June 27, 1893.



Witnesses  
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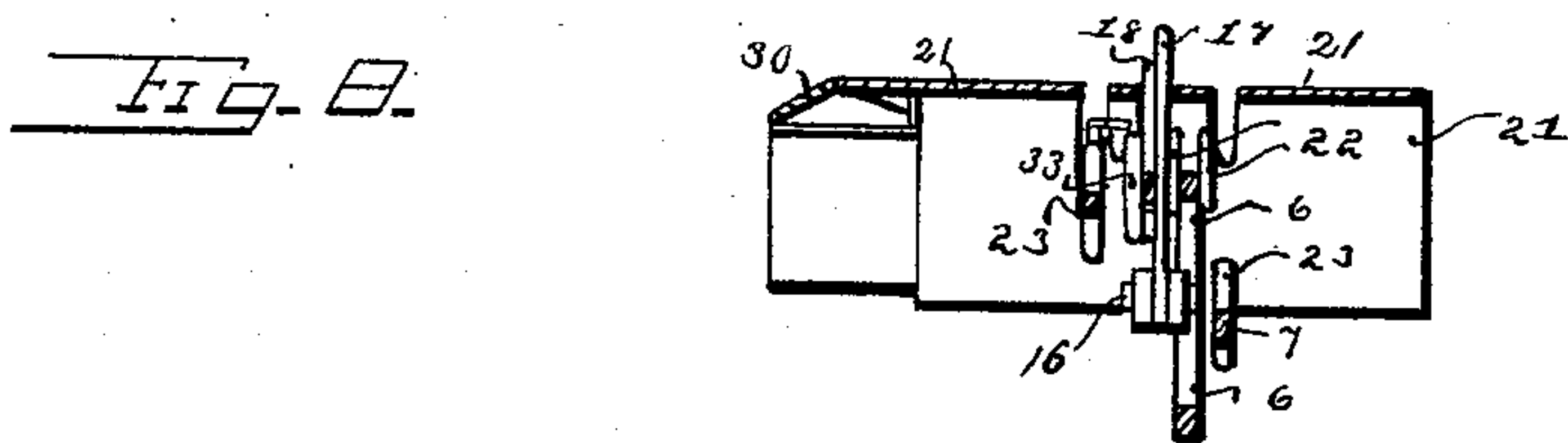
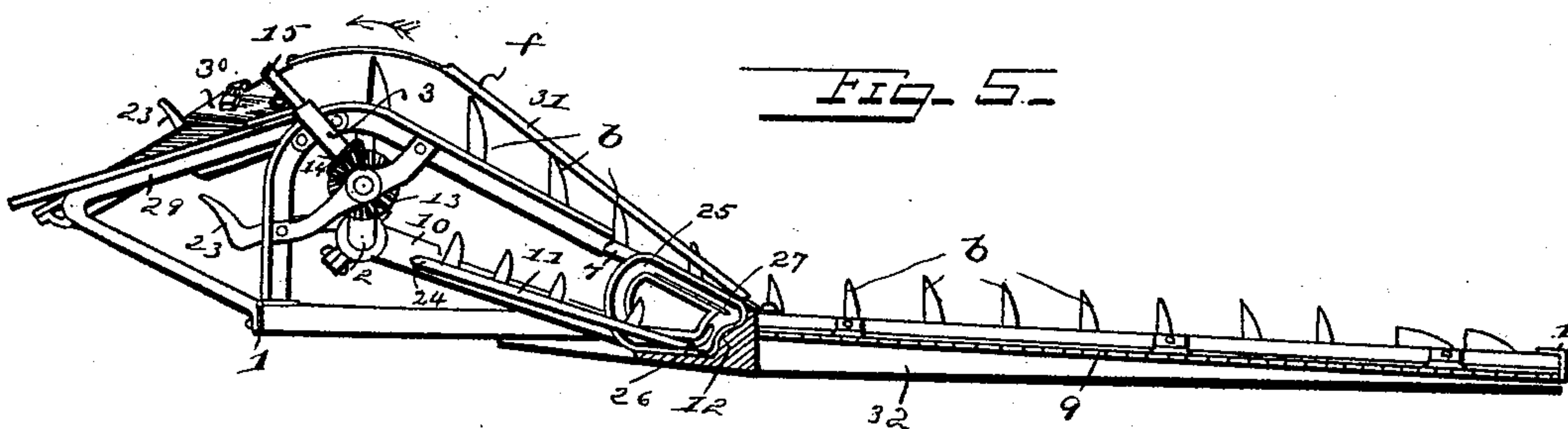
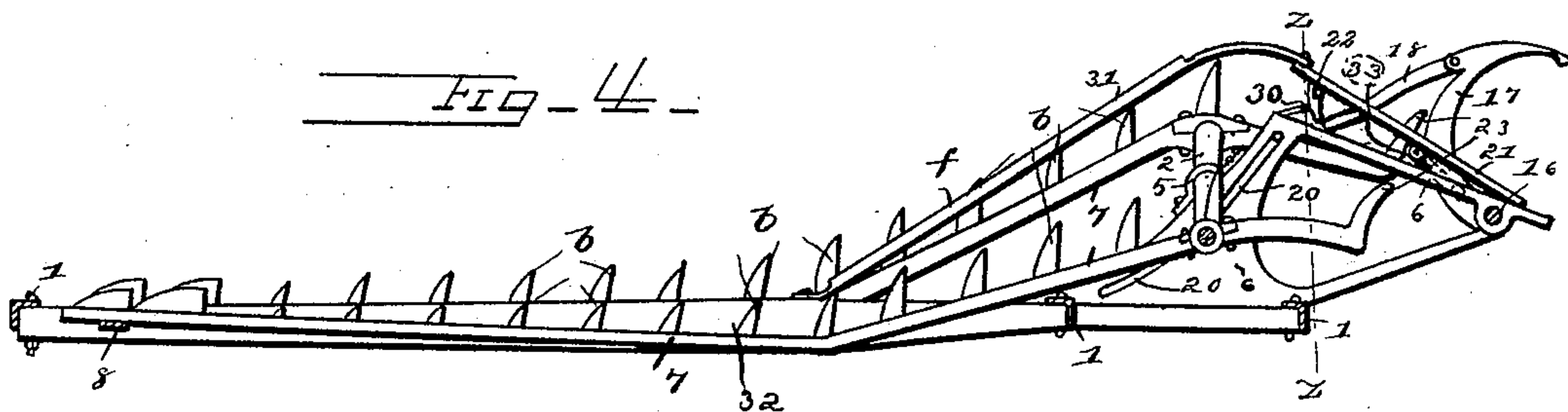
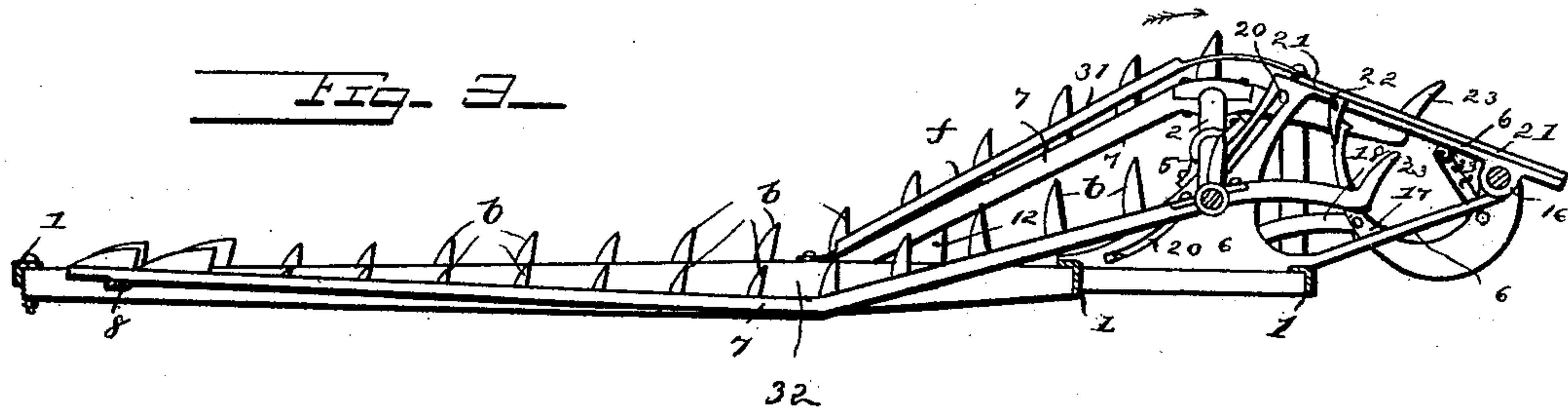
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# UNITED STATES PATENT OFFICE.

JOHN J. DEWEY, OF ST. PAUL, MINNESOTA, ASSIGNOR TO THE MINNESOTA HARVESTER COMPANY, OF SAME PLACE.

## PLATFORM AND BINDER-DECK FOR GRAIN-HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 500,321, dated June 27, 1893.

Application filed June 9, 1892. Serial No. 436,117. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN J. DEWEY, a citizen of the United States, and a resident of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Platforms and Binder-Decks for Grain-Harvesters; and I 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 perspective view. Fig. 2 is a plan view with binder deck removed. Figs. 3 and 4 are side views showing the parts in different positions in longitudinal sections. Fig. 5 is a side view partially in section. Fig. 6 is a cross section on line *y*-*y*, Fig. 2, and Fig. 7 is a detail view of the cam. Fig. 8 is a transverse sectional view on the line *z*-*z*, Fig. 4. Fig. 9 is a detail plan view, showing the binder deck and a portion of the platform broken away.

This invention has relation to certain new and useful improvements in platforms and binder decks for grain harvesters; and it consists in the novel construction and combination of parts as hereinafter specified.

In the accompanying drawings, the numeral 1 refers to the main frame, which is preferably of metal. 2 is a crank shaft journaled in said frame in the box 3 at the forward edge thereof, the box 4 at the rear edge, and the box 5 at the center, carried by a casting 6. Said shaft is designed to be revolved in the direction indicated by the arrow, Figs. 3, 4 and 5, by a suitable connection (not shown) with the driving mechanism of a harvesting machine. On each one of the cranks *a* of said shaft 2 is journaled a carrier arm 7, provided with fingers *b*, said arms extending the full length of the platform and resting at the end portions in the metal guides 8, in which they slide back and forth as their other ends are rotated by the revolution of the crank shaft.

On the forward crank *c* of the shaft 2 which projects beyond the sickle 9, is journaled a

pitman 10, which operates the sickle 9, and also a picker arm 11, which is connected at its upper end to said pitman. The lower end of said picker is guided by a cam 12, all as hereinafter more fully described, making a very effective picker and carrier forward of the sickle, keeping the inner guard clear, and the butts of the grain well up.

On the forward end of the shaft 2, journaled inside its bearing 3, is a bevel pinion 13, which meshes in a similar pinion 14 on a shaft 15, for operating the butt adjuster (not shown).

16 represents a part of one arm of the binder frame, and 17 is the needle or cord arm of a binder, having a jointed section 18.

6 is a casting, hereinbefore referred to, which forms the center bearing 5 for the shaft 2, a seat for the end of the binder frame 16, a guide for the jointed arm 18 of the cord arm, by means of a curved slot 20 therein in which said arm works, and also a guide for the movable portion 21 of the binder deck by means of the lugs 22 on the under side of said deck, which straddle said casting. One of the carrier arms 7 on each side of the cord arm 17 of the binder and the center rest of the shaft 2, is extended underneath the binder deck, and provided with the packer fingers 23, which serve to pack the grain into the binder, which operation is usually performed in other machines of this character, by means of special machinery for the purpose, separate from the carriers, and much more complicated.

The picker arm 11 is pivoted to the pitman 10 at 24 or may be journaled on the front crank of the shaft 2. It is provided with fingers the same as the carriers, and is made operative clear down to the guard, by means of the cam 12, having thereon a track 25 for guiding its movement by means of a nib or roller on the inner side of the picker arm which extends into said track. It is made to follow the upper side of the cam track by means of the spring 27, fastened to the track at 28, which allows the roller or nib on the picker arm to pass its lower end into the upper part of the track, but closes down and prevents its return, as shown in Fig. 6.

21 represents the movable part of the binder



deck 29 the stationary part, and 30 a hinged gate for closing the gap between said parts, when the movable part is raised during the operation of binding, and 38 the movable part of the platform. This movable part of the platform is formed of a series of strips 31, which at their lower ends are fastened to the fixed lower platform strips 32, and at their upper ends to the binder deck 29. Said strips may be hinged at these junctions, but I prefer to make them of thin metal, flexible at their ends, and stiffened at their intermediate portions by turning up their edges, as shown at *f*.

32 are the strips forming the platform on which the grain falls in rear of the sickle. These strips are preferably of wood and deep enough to protect the carrier arms on their lower or return movement, and also to act as guides to steady them sidewise. This allows the carriers to be made thin and light.

33 designates a rod, one end of which is pivoted in the needle arm near the heel, at 34, and the other end in an ear 35 projecting from the under side of the movable portion of the binder deck.

37 are slots in the binder deck through which the packer fingers 23 project alternately. The two front carrier arms 7 are placed as close together, and as close to the sickle as possible, for the purpose of securing a positive and continuous movement toward the binder of the butts of the grain, which is always inclined to hang back from contact with the standing grain.

The operation is as follows:—The binder being at rest, and deck and platform down, as shown in Figs. 1 and 3, the crank shaft 2 is driven in the direction indicated by the arrows by suitable connection with the driving gear of the harvesting machine. The cut grain falls upon the platform, where it falls behind the sickle, and is carried by the arms 7 in a continuous stream and delivered onto the binder deck, where it is packed, by the fingers on the two extended central arms, into the binder. When sufficient grain has been packed to trip the binder into operation in the usual manner, the cord arm 17 is raised in the usual way, for binding. The raising of the link 33, which, as hereinbefore described, connects said cord arm with the movable portion of the binder deck, elevates the grain side of said movable portion, sliding the stubble side grainward upon the frame and casting. This operation also elevates the movable platform portion 31, and the parts assume the positions shown in Figs. 4 and 5. The weight of the packed bundle upon the stubble side of the said movable deck portion, prevents said portion from being raised vertically by the link. This operation of the platform and deck portions performs three functions. First, it serves to check the flow of grain up the platform and into the binder, and helps the latter to make a cleaner separation of the bundle; second, it straightens the grain flowing up the

incline or raised portion of the platform; and third, when the movable deck portion falls into its original position after the operation of binding, it assists in the discharge of the bundle, owing to the endwise stubbleward movement of said movable deck portion.

I do not claim the above described method of carrying grain broadly, as the principle is old, but I have reduced it to a much simpler and more practical form, with the addition of several new features.

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

1. In a grain harvester, the combination with a crank shaft journaled in the main frame, of a series of reciprocating carrying arms journaled at one end on cranks on said shaft, and having packing fingers, a sickle pitman also connected to said shaft, a front picker arm connected to the forward end of said shaft, and a gear wheel on said shaft, substantially as specified.

2. In a grain harvester, the combination with the crank shaft and its crank, of a series of carrier arms journaled on said cranks, said arms having inclined portions working through an inclined portion of the grain platform, the two arms located at the central portion of said platform having their ends nearest the binder extended beyond said crank shaft, and provided with packing fingers, operating through slots in the binder deck, substantially as specified.

3. In a grain harvester, the combination with the frame of the casting 6, a crank shaft having a center bearing in said casting, the binder frame having a seat or support on said casting, the cord arm having a jointed section, the guide in said casting for said section, and the movable portion of the binder deck having a guide on said casting, substantially as specified.

4. In a grain harvester, a binder deck formed in two parts, one stationary and the other movable, a gate hinged to said movable portion and arranged to close the gap between it and the stationary portion when the former is raised, and a platform comprising a fixed lower portion and an inclined vertically-movable portion connecting said fixed lower portion and the movable portion of the binder deck, and movable therewith, and a link connected at one end to said movable portion of the binder deck and at the other end to the cord arm of the binder, substantially as specified.

5. In a grain harvester, a platform having a movable section 38, said section being formed of a series of strips 31, connected at their end portions respectively to the stationary part of the platform, and to a movable portion of the binder deck, said end portions being flexible, and the strips stiffened intermediate of said portions by having the lateral edges flanged or turned, and means operated by the binder mechanism for raising said movable



portion of the deck and thereby the movable portion of the platform, substantially as specified.

5 6. In a grain harvester, the combination with a vertically movable portion of the binder deck, and an inclined movable platform section, of a link connected at one end to the under side of said movable portion of the binder deck, and at the other end to the  
10 cord arm of the binder, whereby as said arm is raised, the movable portions of the deck and platform are also raised, substantially as specified.

15 7. The combination with the crank shaft, and the carriers operated thereby, of the picker arm at the front of the platform; said arm having fingers and operated by said shaft, and the cam forming a guide for the  
20 lower end of said picker arm, substantially as specified.

8. In a grain harvester, the combination with a platform, having a lower, fixed, and an inclined vertically-movable portion, and a binder deck having a movable portion of a  
25 crank shaft journaled underneath said deck, a series of carrier arms journaled on the cranks of said shaft, and working in said platform, the binder end portions of said arms being inclined to correspond to the inclined  
30 movable portions of the binder deck, and a link connection between the cord arm of the binder and said movable deck portion, whereby as said cord arm is raised, the said movable portions of the deck and platform are also  
35 raised, substantially as specified.

9. The combination of the platform having

the fixed and the vertically movable section, the binder deck having a movable section connected with the movable platform section the cord arm of the binder, the link connect- 40 ing said cord arm and the vertically movable section of the binder deck, the crank shaft, the carrier arms journaled in the cranks of said shaft, the sickle pitman, the picker arm and the platform strips, substantially as 45 specified.

10. The combination with the crank shaft, of the series of carrier arms journaled on the cranks of said shaft, and provided with fingers, the two forward arms being set closely 50 together, and the two central arms having extensions past the end shaft and underneath the binder deck, and packing fingers on said extensions, the binder end portions of said carrier arms being inclined to the opposite 55 portions thereof and working in an inclined portion of the platform, substantially as specified.

11. The combination with the crank shaft operating the grain carrying arms and the 60 sickle pitman, of the picker arm connected to said shaft or pitman at its upper end, the cam having a track therein for the lower end of said arm, and the spring in said cam, substantially as specified. 65

In testimony whereof I affix my signature in presence of two witnesses.

JOHN J. DEWEY.

Witnesses:

LOUIS M. HASTINGS,  
GEO. HUGHES MEAD.