

No. 685,443.

Patented Oct. 29, 1901.

A. CAMPBELL.
COTTON-HARVESTER.
(Application filed Apr. 15, 1901.)

(No Model.)

4 Sheets—Sheet 1.

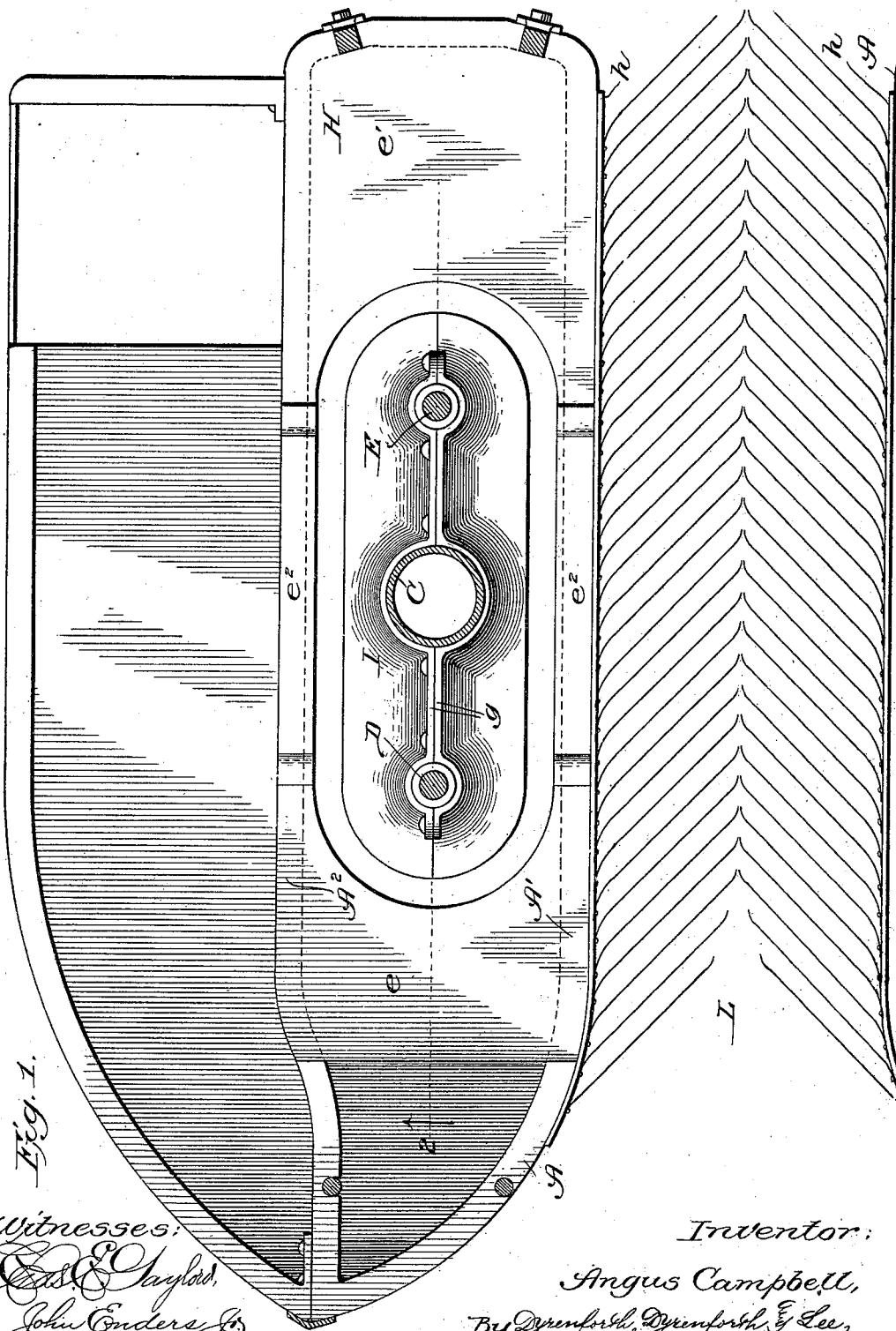


Fig. 1.

Witnesses:
Ed. E. Claydon,
John Enders, Jr.

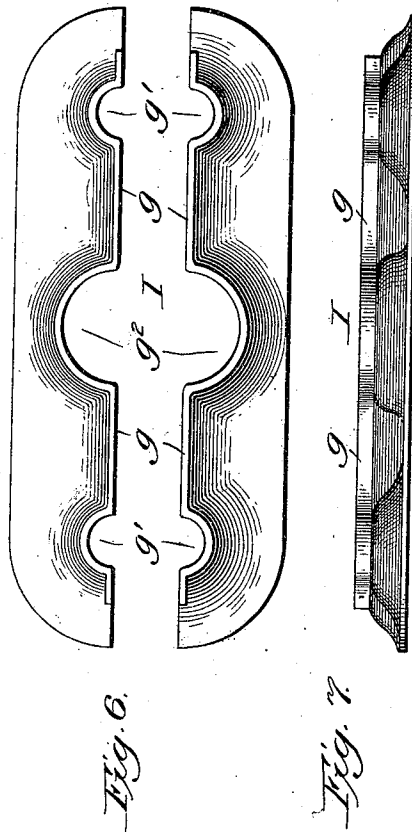
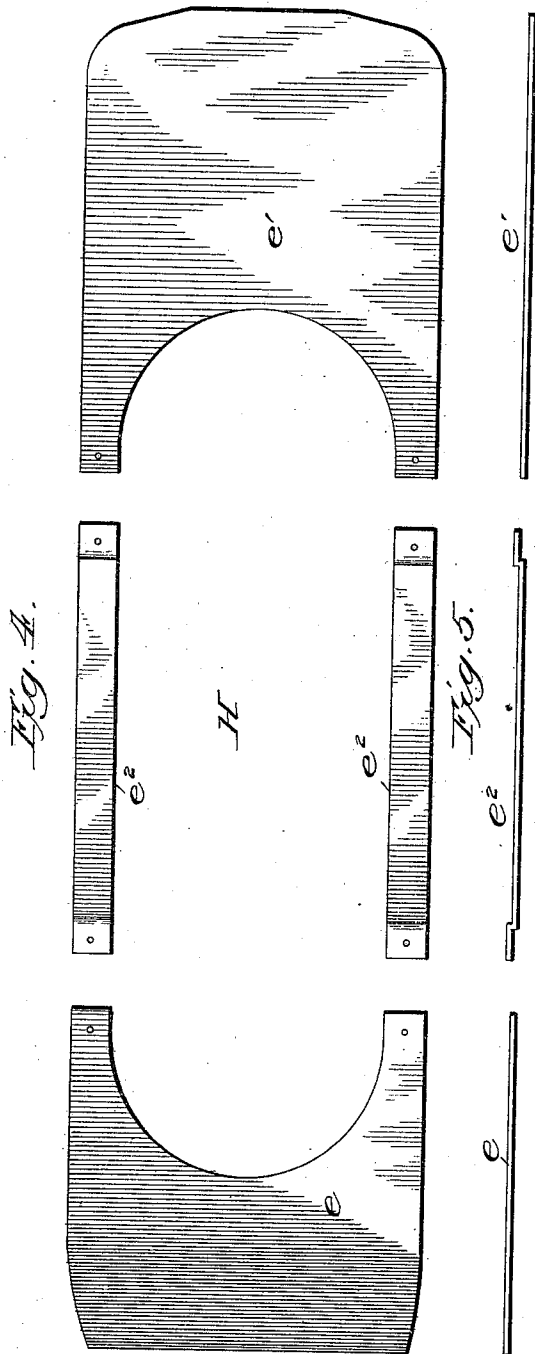
Inventor:
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(Application filed Apr. 15, 1901.)

(No Model.)

4 Sheets—Sheet 3.



Witnesses:
Edw. J. Gaylord,
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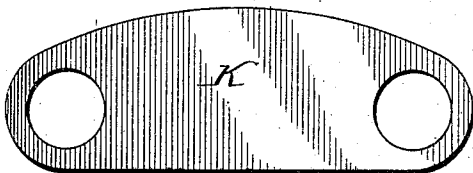
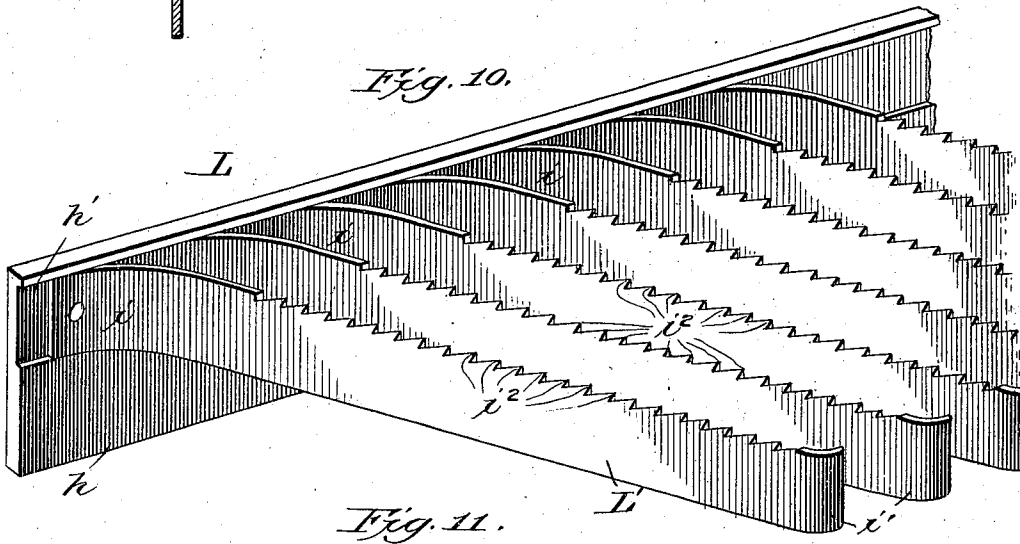
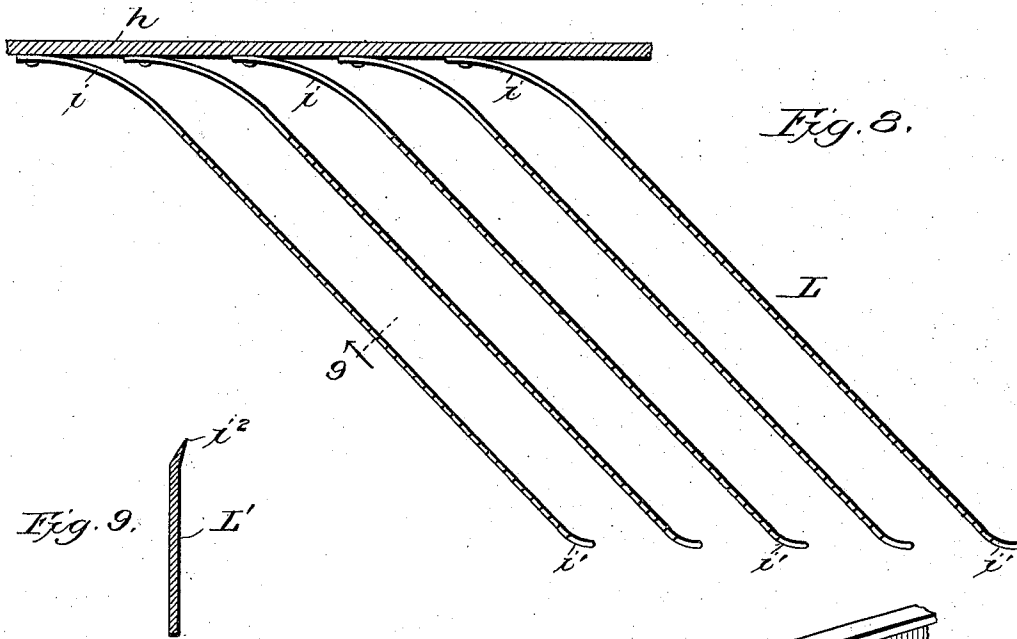
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(Application filed Apr. 15, 1901.)

(No Model.)

4 Sheets—Sheet 4.



Witnesses:
Chas. S. Gaylord,
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UNITED STATES PATENT OFFICE.

ANGUS CAMPBELL, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO AMERICAN COTTON PICKER COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

COTTON-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 685,443, dated October 29, 1901.

Application filed April 15, 1901. Serial No. 55,891. (No model.)

To all whom it may concern:

Be it known that I, ANGUS CAMPBELL, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Cotton-Harvesters, of which the following is a specification.

My invention relates to improvements in machines for picking cotton in the field and is in the nature of an improvement in details of construction of a machine of the type first shown and described by me in Letters Patent No. 542,794, granted July 16, 1895. I refer to the said Letters Patent for a detailed description of the working of the machine and general construction thereof. It will suffice in the present connection to state that the machine is provided with two casings separated by a central opening at which the machine passes across a row of cotton-plants. In each casing are vertical picker-stem-carrying tubes linked together at the top and bottom in series to travel an endless course oblong in the direction of the length of the machine and practically straight-sided. Each carrier-tube is provided with a number (usually eleven) of picker-stems projecting therefrom in the same vertical plane and contains gearing for rotating the picker-stems on their individual axes. In the forward travel of the machine the carriers are moved and translated around two centers at the forward and rear ends, respectively, of their endless course. The operation is such that the picker-stems are thrust at the forward end portion of the machine longitudinally outward to an extended position in the cotton-plants to intermesh with the picker-stems moving in the other or companion casing. The picker-stems while in their extended intermeshing position are rotated and moved with their carriers for a prolonged period in the backward direction at a speed approximating the forward travel of the machine, whereby the picker-stems remain approximately stationary with relation to the cotton-plants while thrust into the same, and at the rear end of their backward course the picker-stems are withdrawn longitudinally from the plants and thence through stripper mechanism, which removes from the stems the cotton gathered thereby from the plants. The vertical carrier-tubes

rest upon casters which travel upon a track in the base of the machine. It has been found in practice in the field with machines as hitherto constructed that occasionally bits of cotton fiber, dry leaves, twigs, and soil will find their way into the casing through its slatted sides and in time clog the casters and working parts of the machine, thereby increasing the power necessary to move them. My object is to overcome this difficulty by providing housing means of novel construction for the lower working parts in the casing.

It has been found in practice that while the picker-stems are in the plants an occasional tuft of cotton will be knocked off and fall to the ground. As these tufts aggregate a material amount of cotton, which in the operation of the former machines was wasted, it is a further object of my present invention to provide means for catching such falling tufts of cotton, which would otherwise be lost, and gathering them into the machine.

It is not thought necessary in the present case to show any more of the machine than is necessary to illustrate the construction and operation of the features of novelty which it is herein desired to protect by patent.

In the drawings, Figure 1 is a broken horizontal section showing a top plan view of the means for catching cotton which drops from the plants and falls between the picker-stems and of housing mechanism in one of the casings for the lower working parts; Fig. 2, a broken longitudinal section taken on line 2 in Fig. 1; Fig. 3, a similar section taken on line 3 in Fig. 2; Fig. 4, a plan view of plates separated, which together form a housing outside of the path of the picker-stem carriers; Fig. 5, an edge view of the same; Fig. 6, a plan view of dished plates, which together form a housing within the path of the picker-stem carriers; Fig. 7, a side or edge view of the same; Fig. 8, an enlarged broken top plan view of one of the catching devices; Fig. 9, a section on line 9 in Fig. 8; Fig. 10, a broken perspective view of one of the catching devices, and Fig. 11 one of a series of horizontal housing plates or links movable with the carriers to cover the endless slot between the plates or housings shown in Figs. 4 and 6.

A A are the frames or casings of the ma-

chine mounted on running-gear, which also furnishes the power for operating the moving parts, as shown in my aforesaid Letters Patent and also in a later improved form in a separate concurrent application, filed by me the 15th day of April, 1901, Serial No. 55,888. Each casing is provided with a base-plate B, suitably braced and suspended in the frame of the casing. About midway between the ends of the base-plate is a stationary vertical bracing-tube C, fastened in a sprocket-piece C', which in turn is secured to the base-plate. At its upper end the bracing-tube C is fastened to a stationary part in the casing. Journalled at their lower ends in bearings *a a* on the base-plate are forward and rear vertical shafts D E, respectively. These shafts pass through bearings at the upper ends, where they carry and are driven by gearings (not shown herein) to rotate in the same direction. On the lower end portions of the shafts D E are chain-driving sprocket-wheels D' E'. Alternate links *b* of the chain are wheeled casters, and *c* are the intermediate links of the chain. F is a track upon which the casters run. This track is an endless strip resting upon a series of adjusting-screws *d*, whereby it may be raised and lowered and adjusted as to height at any part of its length. The means shown for adjusting the track-plate F are important, more especially to take up wear and to render the track independent of any unevenness of the base-plate where it would otherwise rest. The picker-stem-carrier tubes G are pivotally mounted at their lower ends in the caster-links *b*.

The lower frame of the casing is formed with longitudinally-extending channel-bars A' A², and the base-plate B rests upon the lower inward-projecting flanges of the said channel-bars.

H is a housing-plate formed in sections, of which *e* is the forward piece, *e'* the rear piece, and *e² e²* the side pieces. The pieces or plate-sections *e e'* rest upon upper flanges of the channel-bars A' A². The side pieces *e²* also rest longitudinally upon the bars and at their ends overlap the parts *e e'*, as shown. The parts may be secured in any manner to the channel-bars or may be simply secured together at their overlapped portions to hold them steadily in position. The inner edge of the housing-plate H extends just outside and parallel with the path of the neck portions *f* of the carriers G, above the casters *b*. I is a housing-plate formed of two longitudinally-divided sections, provided on their meeting edges with flanges *g* and with openings *g'* to fit loosely around the shafts D E, and an opening *g²*, fitting tightly around the bracing-tube C. The housing-plate I is of the dish shape shown, being at its edge portion in the plane of the plate H and higher where it surrounds the shafts D E and tube C. This construction is necessary for it to clear the sprocket-wheels D' E'. The two halves of the plate I

are secured together by means of bolts, as indicated, and clamp the bracing-tube C tightly, whereby the plate is held firmly in place. Between the outer edge of the plate I and the inner parallel edge of the plate H is an opening or endless slot for the passage of the neck portions *f* of the carrier-tubes. The carriers are linked together at the necks *f* by plates K, which may be of the form shown in Fig. 11. The plates K rest in sliding engagement upon and overlap at their edges the adjacent edges of the plates H I. Thus the plates H I and sliding plates K form a housing which does not interfere with the movement of the carriers and prevents the access of cotton or other undesirable material to the sprocket-wheels D' E', chain, and casters thereon.

The catching device or platform L is formed with channeled strips *h*, secured along the inner adjacent sides of both casings A at the channel-bars A'. Fastened at their ends in the channel or groove *h'* of each strip *h* is a series of approximately horizontally extending thin spring-metal strips L', curved at their inner ends *i*, where they are riveted to the strip *h*, and also curved in the opposite direction at their outer ends *i'*. The strips L' extend edgewise and parallel with each other in a backward-inclined direction, whereby they may yield readily toward the rear end of the machine, but will not yield downward. The ends *i'* terminate in a plane about midway between the casings and there meet the ends *i'* of the strips L' on the other casing.

In operation as the machine is drawn across a row of plants the stalks of the plants pass between the ends of the strips L', the latter yielding readily backward to permit them to pass freely across the stalks without injury thereto. As the stalks are passed the strips spring back to normal position. The two sets of strips together form a platform to receive any tufts of cotton that may drop from the plants or picker-stems. To hold the cotton fibers and prevent the tufts from dropping between the strips, the upper edges *i²* may be serrated, as indicated. The lowest horizontal row of traveling picker-stems moves in a plane close to that of the serrated edges *i²* and will operate to gather and transfer into the machine the cotton as it accumulates upon the catching mechanism. The upper serrated edges of the strips are preferably bent slightly in the backward direction, as shown in Fig. 9, to permit the cotton to be more readily removed therefrom by the picker-stems in their passage in the backward direction.

The only features of the machine which it is sought to cover in the present case are those which tend to catch and prevent waste of cotton falling beneath the picker-stems between the casings and those which tend to prevent any cotton or other material falling into the machine-casings from clogging the moving parts. Although I prefer to construct those features as shown and described, they

may be variously modified without departing from the spirit of my invention as defined by the claims.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a cotton-harvesting machine, the combination with a casing, endless series of picker-stem carriers and track in the base of the casing along which the carriers travel, of housing-plates extending along opposite sides of the path of the carriers above said track, substantially as and for the purpose set forth.

2. In a cotton-harvesting machine, the combination with a casing, endless series of picker-stem carriers and track in the base of the casing along which the carriers travel, of housing-plates extending along opposite sides of the path of the carriers above said track, and separated by a slot in which the carriers move, and slot-closing plates movable with the carriers, substantially as and for the purpose set forth.

3. In a cotton-harvesting machine, the combination with a casing, vertical driving-shafts toward opposite ends of the casing, sprocket-wheels on the lower ends of the said shafts, horizontal chain driven by the said sprocket-wheels, and vertical picker-stem carriers mounted at their lower ends on the said chain, of a plate supported to extend in a plane above the base of the casing along the outer side of the path of the carriers, a housing-plate supported within the said path over said sprocket-wheels and having openings through which said shafts extend, the said plates being separated by a slot in which the carriers move, and slot-closing links upon the carriers above the said chain, substantially as and for the purpose set forth.

4. In a cotton-harvesting machine, the combination with horizontal series of traveling cotton-gathering picker-stems, of a cotton-catching platform extending in a plane below the picker-stems and formed of thin flexible and approximately parallel strips fastened at one end and adapted to yield at their opposite ends under engagement with the plants.

5. In a cotton-harvesting machine, the combination with casings having between them a passage for standing cotton-plants, endless series of movable carriers in the casings, and cotton-gathering picker-stems on the carriers extending in multiple horizontal series overlying each other and movable along said passage, of a horizontally-disposed cotton-catching platform comprising separate longitudinally-extending sections secured respectively to the casings at opposite sides of the passage and formed with approximately parallel and yielding strips of flexible material fastened at one end and projecting part way across said passage, substantially as and for the purpose set forth.

6. In a cotton-harvesting machine, the combination with casings having between them a passage for standing cotton-plants, endless

series of movable carriers in the casings, and cotton-gathering picker-stems on the carriers extending in multiple horizontal series overlying each other and movable along said passage, of a horizontally-disposed cotton-catching platform comprising separate longitudinally-extending sections secured respectively to the casings at opposite sides of said passage formed with approximately parallel and yielding strips of flexible material fastened at one end and projecting in a backward-inclined direction part way across said passage, substantially as and for the purpose set forth.

7. In a cotton-harvesting machine, the combination with casings having between them a passage for standing cotton-plants, endless series of movable carriers in the casings, and cotton-gathering picker-stems on the carriers extending in multiple horizontal series overlying each other and movable along said passage, of a horizontally-disposed cotton-catching platform comprising separate longitudinally-extending sections each formed of an attaching-strip secured to the respective casing at one side of the said passage and a series of approximately parallel thin spring-metal strips fastened to the said attaching-strip and extending edgewise in the backward-inclined direction part way across said passage.

8. In a cotton-harvesting machine, the combination with casings having between them a passage for standing cotton-plants, endless series of movable carriers in the casings, and cotton-gathering picker-stems on the carriers extending in multiple horizontal series overlying each other and movable along said passage, of a horizontally-disposed cotton-catching platform comprising separate longitudinally-extending sections secured respectively to the casings and formed with approximately parallel and yielding strips of flexible material fastened at one end to project freely part way across said passage and serrated along their upper edges, substantially as and for the purpose set forth.

9. In a cotton-harvesting machine, a cotton-catching platform *L* formed with attaching-strips *h* and approximately parallel strips *L'* of spring metal secured at one end to the strip *h* and having the rounded end portions *z'*, substantially as and for the purpose set forth.

10. In a cotton-harvesting machine, a cotton-catching platform *L* formed with attaching-strips *h* and approximately parallel strips *L'* of spring metal serrated along their upper edges and secured at one end to the strip *h* and having the rounded end portions *z'*, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANGUS CAMPBELL.

Witnesses:

ALBERT D. BACCI,
WM. B. DAVIES.