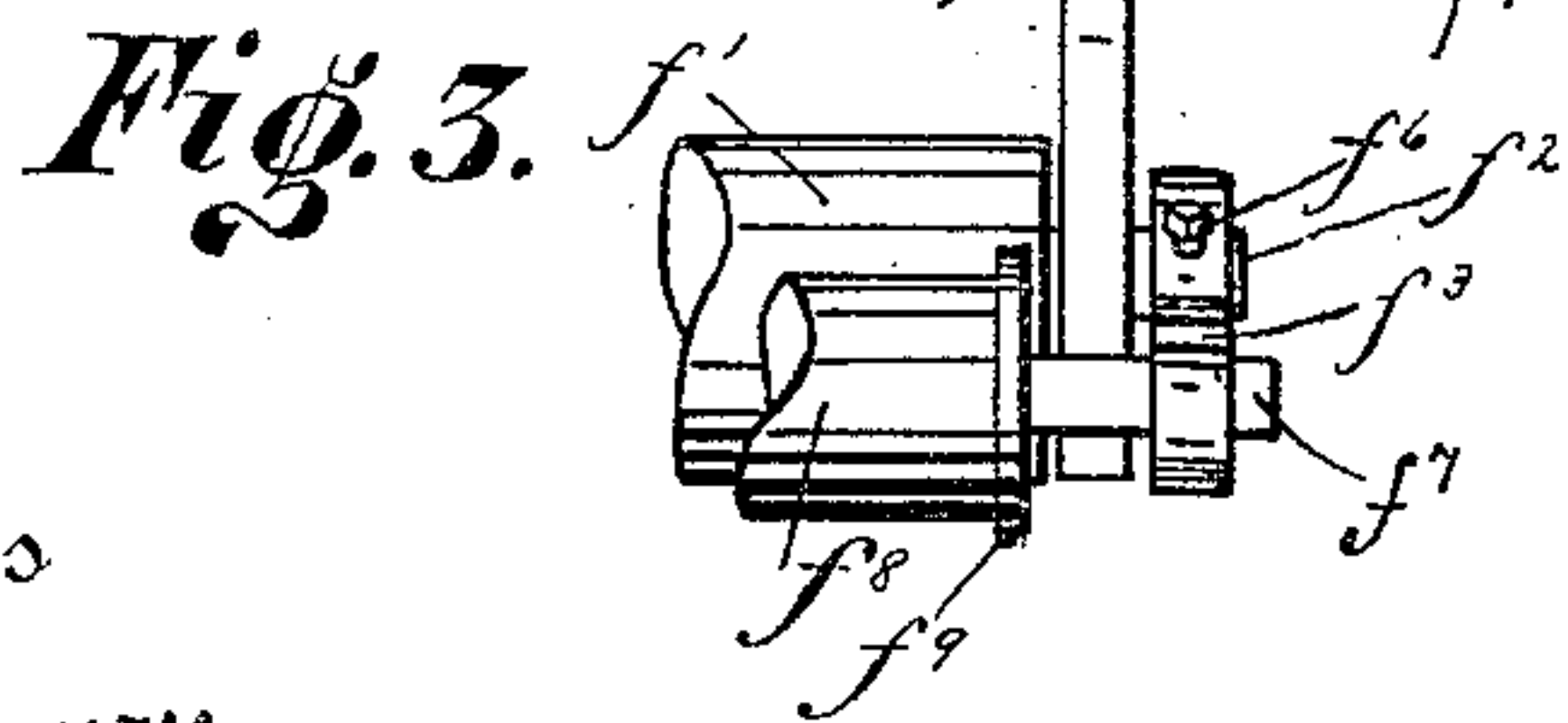
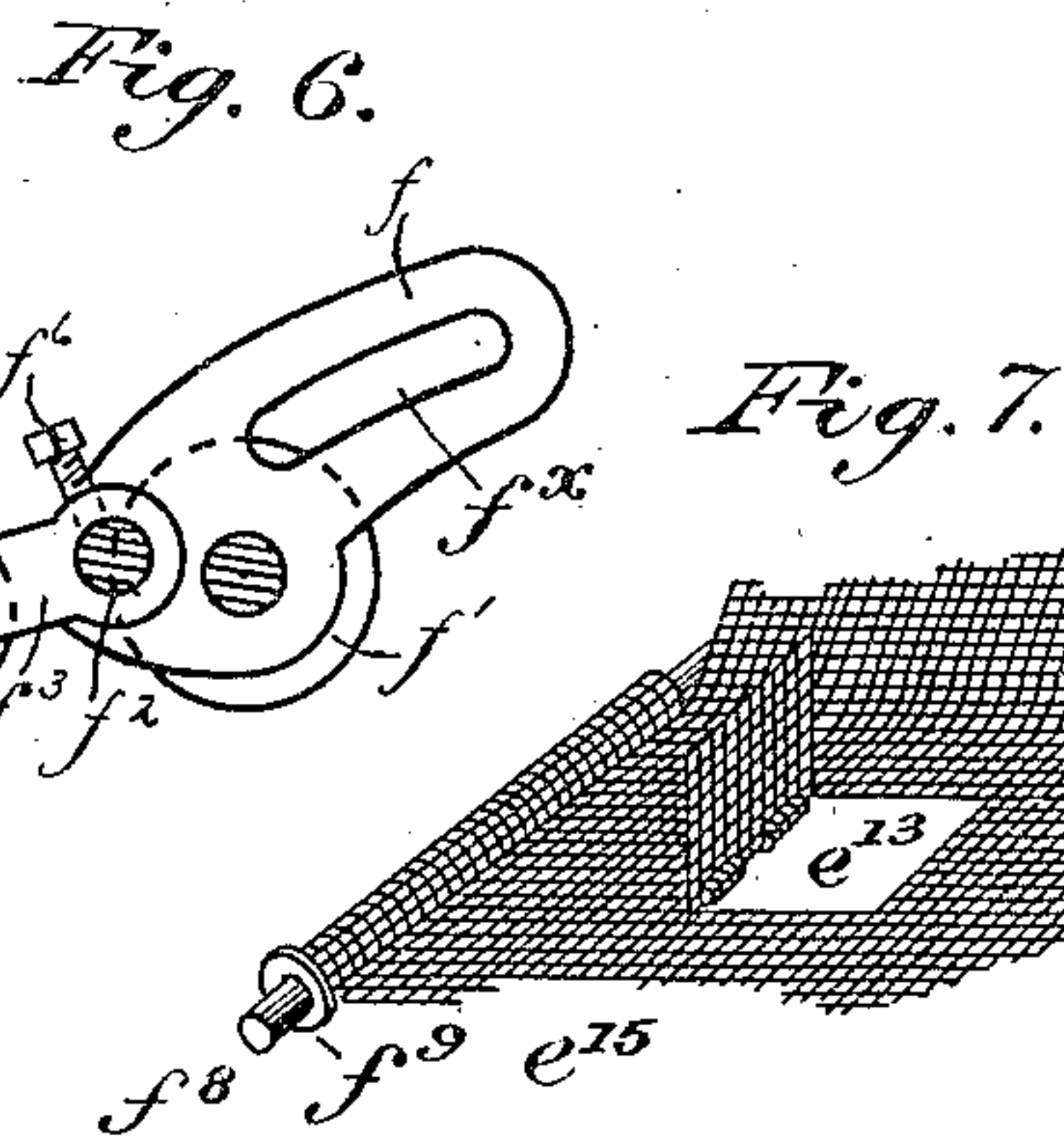
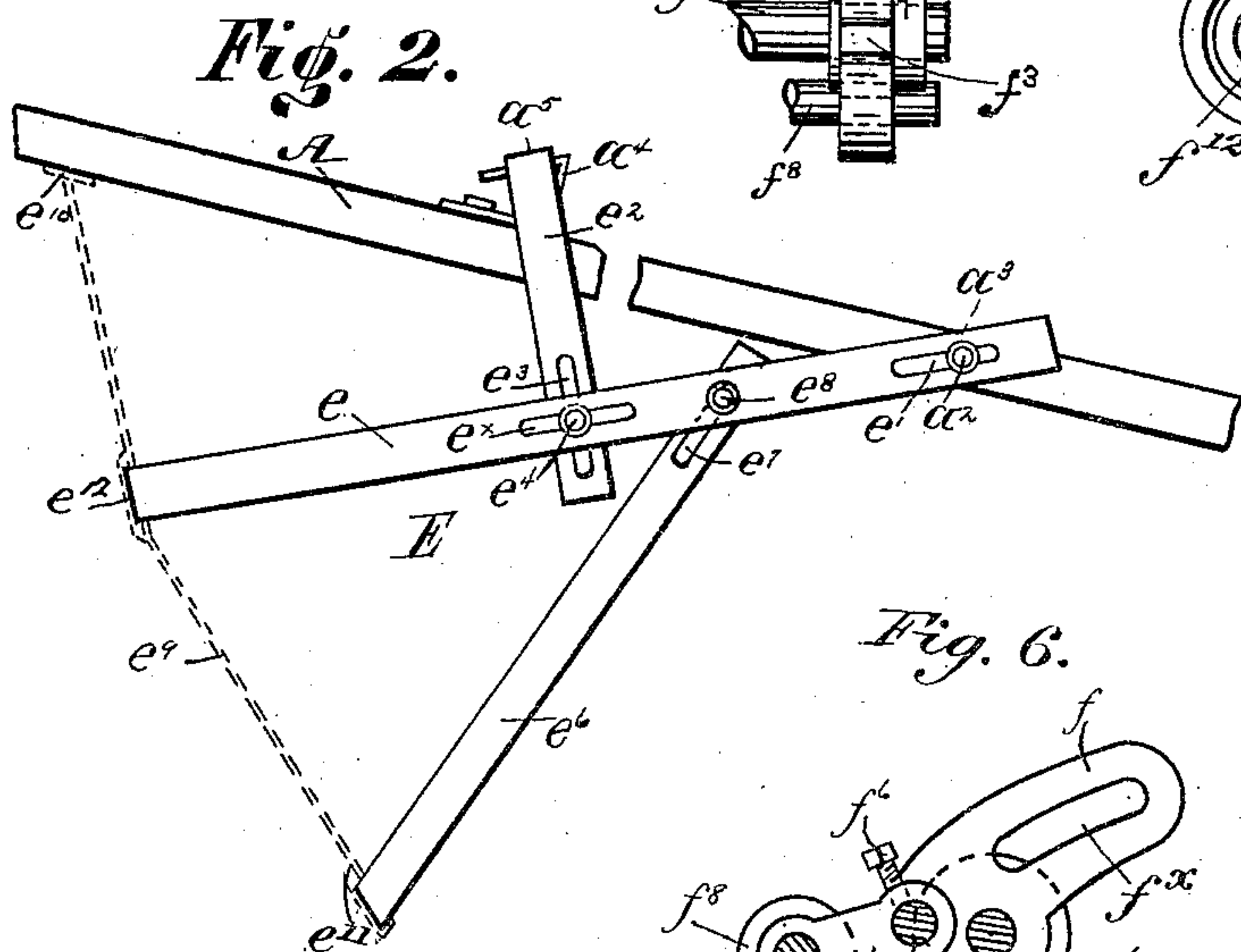
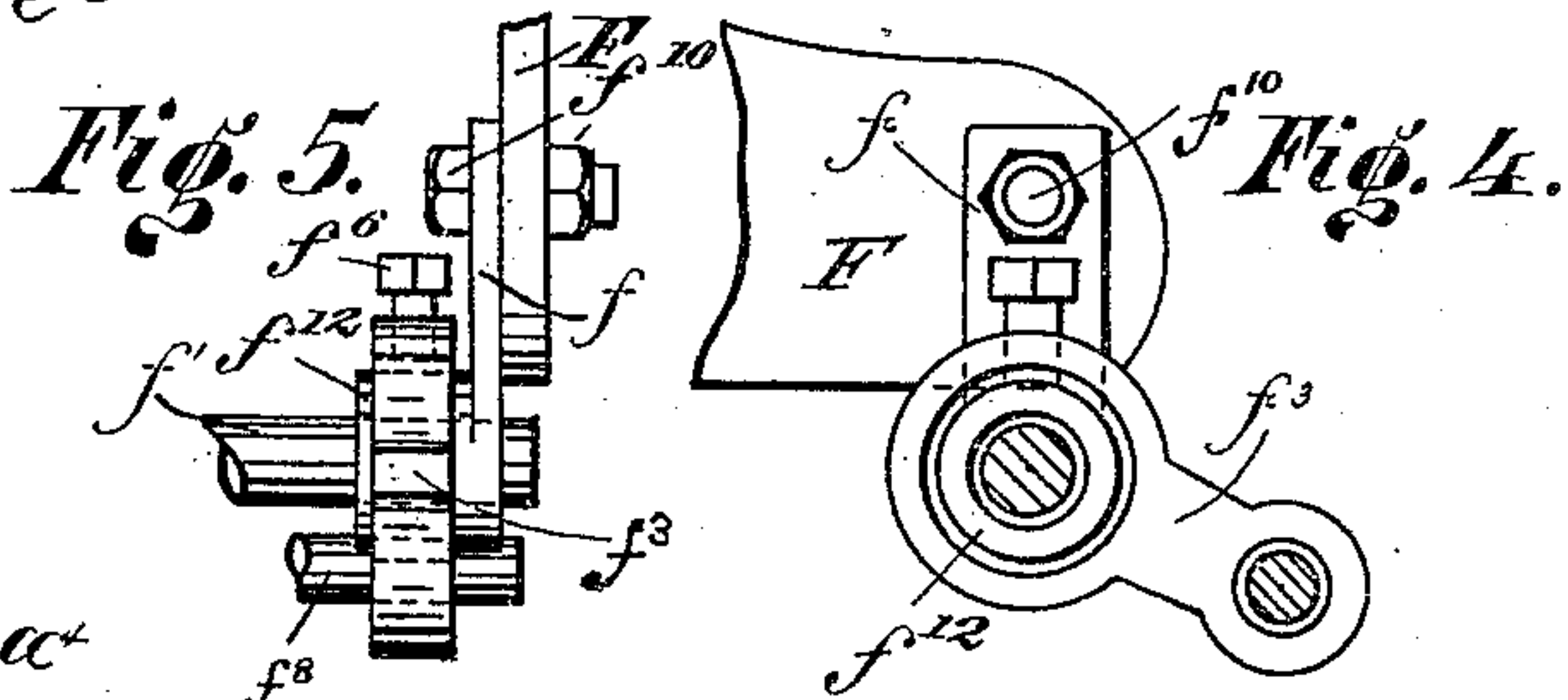
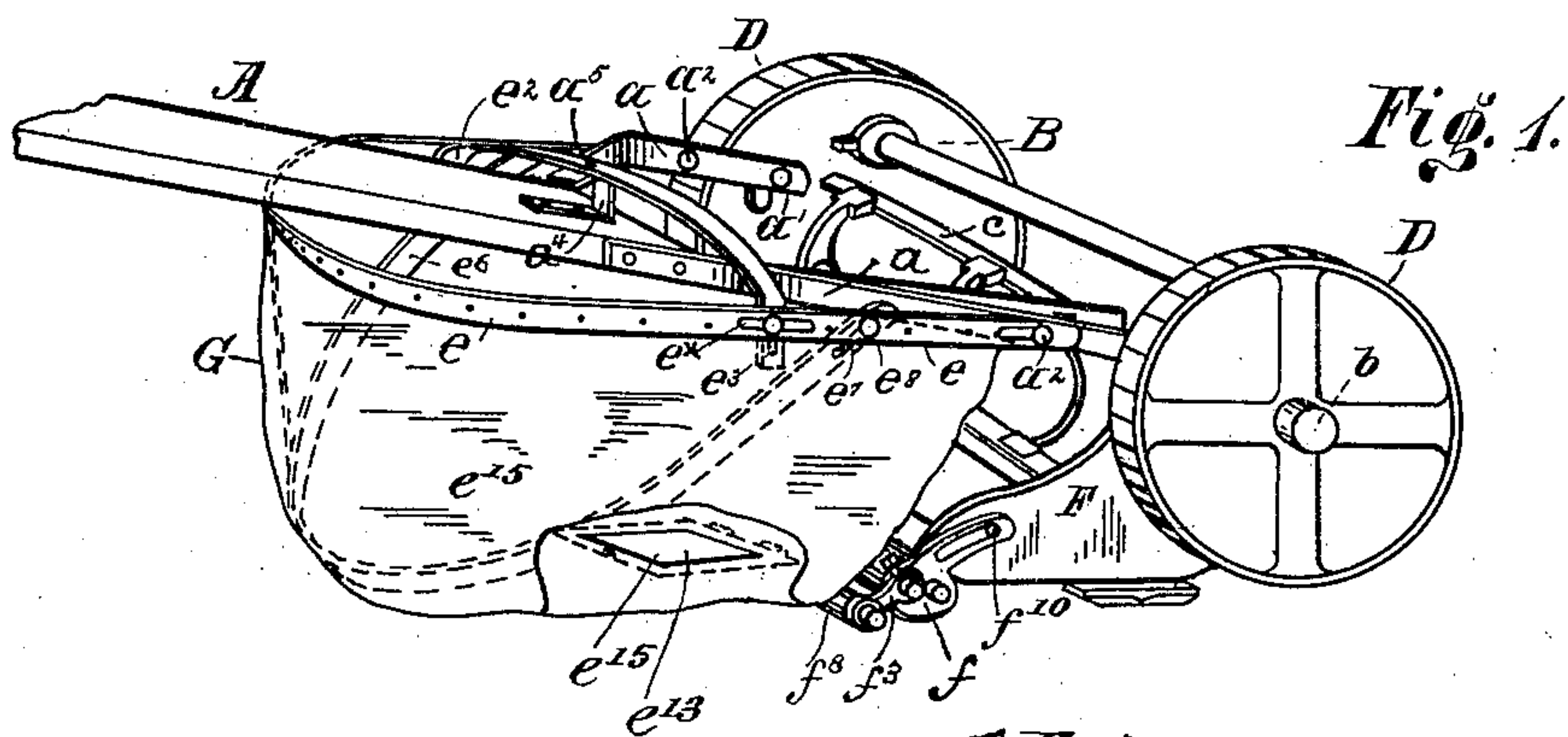


(No Model.)

D. JOHNSON.
LAWN MOWER ATTACHMENT.

No. 410,836.

Patented Sept. 10, 1889.



Witnesses

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UNITED STATES PATENT OFFICE.

DANIEL JOHNSON, OF KANSAS CITY, MISSOURI.

LAWN-MOWER ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 410,836, dated September 10, 1889.

Application filed September 16, 1887. Serial No. 249,846. (No model.)

To all whom it may concern:

Be it known that I, DANIEL JOHNSON, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Lawn-Mower Attachments; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

My invention has for its object a grass-receiver for lawn-mowers the size of which may be alternately increased and decreased in proportion to the amount of cut grass it is desired to receive and convey at one time to the place of deposit; and it consists in the novel construction and combination of parts, which will first be fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 represents a lawn-mower, showing the adjustable frame to attach to the handle of the mower, the receiver connected with the said frame, and the ground-roller bracket, a portion of the receiver being broken away to show the dumping-aperture and cover. Fig. 2 is a detail side view of the handle and of the adjustable frame, showing the flexible band. Fig. 3 is a detail end view of the adjustable roller-plate, showing a portion of the ground-roller and adjustable receiver-carrying rod attached thereto. Fig. 4 is a detail side view showing a modified form of the device for adjusting the receiver-carrying rod upon the ground-roller bracket. Fig. 5 is a detail end view of the modified form as seen in Fig. 4. Fig. 6 is a detail side view of the ground-roller and receiver-carrying rod as seen in Fig. 1. Fig. 7 is a detail view of the bottom portion of the receiver, shown attached to the rod.

Similar letters of reference indicate corresponding parts in all the figures.

In carrying out my invention, A represents the handle of the lawn-mower, and $a a$ are the forked end portions, which are pivotally attached at $a' a'$ to the concentric plates B B, which plates are fitted to the respective inner sides of the traction-wheels D D concentric

with the flanges of said wheels, which overlap said plates.

F F are the side frames of the mower, which are attached at their upper ends to the respective plates B B, and the lower ends extend downwardly and rearwardly to support the ground-roller. A rotating cutter-shaft is journaled in the inner sides of the respective frames F F of the mower and provided with the usual cutters.

$f f$ are the ground-roller brackets, attached to the outer side and rear end portion of the frames F F.

$f^x f^x$ are the longitudinal slots in the brackets $f f$.

f^{10} are the adjusting-bolts securing the brackets $f f$ to the frame F F.

f' is the ground-roller, journaled to the brackets $f f$, to change the height of cut. Upon the outer side portions of the ground-roller brackets $f f$, a slight distance in the rear of the journals of the ground-roller f' , are fixed the transverse pins $f^2 f^2$. To the pins $f^2 f^2$ are attached, respectively, one end of a short arm or bar $f^3 f^3$, which ends are perforated to receive the pins f^2 . In the other ends of the arms $f^3 f^3$ are formed the transverse journal-bearings $f^4 f^4$, in which are inserted the journals f^7 of a receiver-carrying rod f^8 , which rod is parallel with and a slight distance in the rear of the ground-roller f' . Through the end portion of the arms $f^3 f^3$ on pins $f^2 f^2$ and intersecting with the perforations f^{11} are made the screw-threaded perforations in which are fitted the screws $f^6 f^6$, which impinge on the pins $f^2 f^2$ and enable the rod f^8 to be adjusted to the required height. Around the ends of the rod f^8 , near the journals $f^7 f^7$, are the flanges $f^9 f^9$, for the purpose hereinafter described.

A frame E is made to support the grass-receiver, which frame consists, first, of a flat strip e , of a suitable length, in each end of which is made the longitudinal slots $e' e'$. The strip e is bent in a curved or U shape and opposite ends extended beneath the handle A to the outer side of the respective forked ends $a a$ of said handle and attached to said forked ends by the adjusting-bolts a^2 , which

bolts pass through the slots $e' e'$ of strip e and are provided with the nuts a^3 . To the upper side of the handle A of the mower, near the forked ends $a a$, is attached rigidly one side portion of an angle-iron a^4 , which extends at right angles from said handle and a portion bent in an opposite direction to that of the forked ends of said handle and in the direction of said handle. A narrow flat strip e^2 , of a suitable length, is curved and placed flatwise and in a transverse relation to handle A upon the portion of the angle-iron a^4 inclined at an angle to the said handle, and rigidly attached at a point midway its length to said portion of angle-iron a^4 . The ends of said strip e^2 extend downwardly in line with the inner sides of the strip e , and in each end of strip e^2 is made the longitudinal slots $e^3 e^3$. Through the strip e at the points of intersection of the strip e^2 therewith are made the longitudinal slots $e^x e^x$. Through the registering slots $e^3 e^x$ in the respective strips $e e^2$ is inserted the adjusting-bolt e^4 , provided with securing-nuts. A narrow flat strip e^6 , exceeding in length that of the strip e and of a sufficient length to extend in a downward direction nearly to the horizontal plane of the ground-roller f' , is also bent in a curved direction beneath the handle A , and the ends of said strip extended upwardly in line with the inner sides of the strip e to a position between the slots $e^x e'$ in the said strip e . In each end of the strip e^6 is made a longitudinal slot e^7 . Through the strip e , and also through the slot e^7 in strip e^6 , is inserted the adjusting-screws e^8 , provided with securing-nuts. To the curved portion of the strip e^6 at a point in a vertical line with the handle A is attached one end of a flexible band e^9 , which is extended in an upward direction and past the strip e , a loop e^{12} extending over the said strip and attached at its opposite ends to the said band e^9 . The other end of the band e^9 is attached to the under side portion of the handle A by means of the rivet e^{10} . One end of a flexible cloth-receiver G is attached at its upper longitudinal edge by suitable rivets to the outer side of the adjustable strip e near the adjusting-bolt a^2 of the forked end of the handle A , and thereto secured by suitable rivets at proper intervals and extended entirely around the said inner side of the strip e to a point near the adjusting screw-bolt a^2 on the opposite forked end a of said handle. The sides and rear end portion of receiver G extend downwardly from the strip e over and inclosing the strip e^6 in one piece, thus forming the bottom of the hood-shaped receiver, the end of which toward the cutter G is open. The bottom portion of said receiver G toward the cutter C is then extended beneath the rod f^3 between the flanges $f^9 f^9$ on said rod, and wrapped over said rod and firmly secured to the said bottom portion of the receiver. In the bottom portion of the receiver G is made

a rectangular opening e^{13} . A cover e^{15} is made of a similar form slightly larger than the opening e^{13} , which cover is placed within the receiver G over said opening, and one end portion of said cover, which is in the direction of the ground-roller f' , attached to the said bottom by means of the hinges e^{14} .

In Figs. 4 and 5 I have shown a modified form of the means of attaching the adjustable receiver-rod arms to the ground-roller brackets, and in this construction the ground-roller bracket is shown retained between the ordinary vertically-adjustable brackets $f f$. To the inner side of the brackets $f f$, around the journal-opening which receives the journals of the ground-roller, are cast the short projecting circular flanges $f^{12} f^{12}$. The end portions of the arms f^3 , which are perforated so as to fit on the pins f^2 on the bracket f , are simply increased in size, so as to permit the perforated end to fit over the flanges f^{12} in the bracket f , and the means of adjustment of the receiver-roller arms corresponds to that shown in Figs. 3 and 6.

In the elevation of the handle A to operate the mower the cut grass is thrown in the rotation of the cutters within the receiver, the receiver-carrying rod is adjusted so as to approach near the ground without direct contact, and the feed-roller is adjusted to regulate the height of cut, said receiver-rod being also adjusted to a position above the line of the feed-rollers when the grass is dry, and the finer particles are thrown in an upward direction into the receiver. The cut grass is readily removed from the receiver by inverting the handle A of the mover, in which position the adjustable frame E prevents the collapsing of the receiver G . The cover e^{15} , when the bulk of the grass is removed, may then be lifted and the fine particles adhering to the sides of the receiver ejected through the opening e^{13} .

The receiver-frame may be increased or decreased in size to accommodate a large or small receiver, and ordinarily to extend the receiver as far as permitted away from the cutters or toward them, as may be desired, in which adjustments the flexible band e^9 acts simply to support or retain the position of the strip e^6 within the receiver.

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

1. In lawn-mowers, the combination, with the handle having forked ends, of a grass-receiver frame consisting of separate U-shaped strips having longitudinal slots in the respective end portions, one horizontal strip being secured to the forked ends of said handle by means of suitable securing and adjusting bolts, another U-shaped strip secured at its end portions, by means of securing and adjusting bolts, to the parallel portions of said horizontal strip, and a transverse U-shaped supporting-strip upon said handle, also having longitudinally-slotted end portions se-

cured to the slotted sides of said horizontal strip by means of securing and adjusting bolts, for the purpose described.

2. In lawn-mowers, the combination, with
5 the frame of the mower having feed-roller brackets, of grass-receiver pivots upon the side of said feed-roller brackets and arms connected with said pivots, a rod attached to said arms and also connected with and sup-
10 porting the lower front end portion of said

grass-receiver, and means for adjusting the rod-carrying arms on said pivots, for the purpose described.

DANIEL ^{his} × JOHNSON.
mark

Witnesses:

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JOHN M. PARRY.