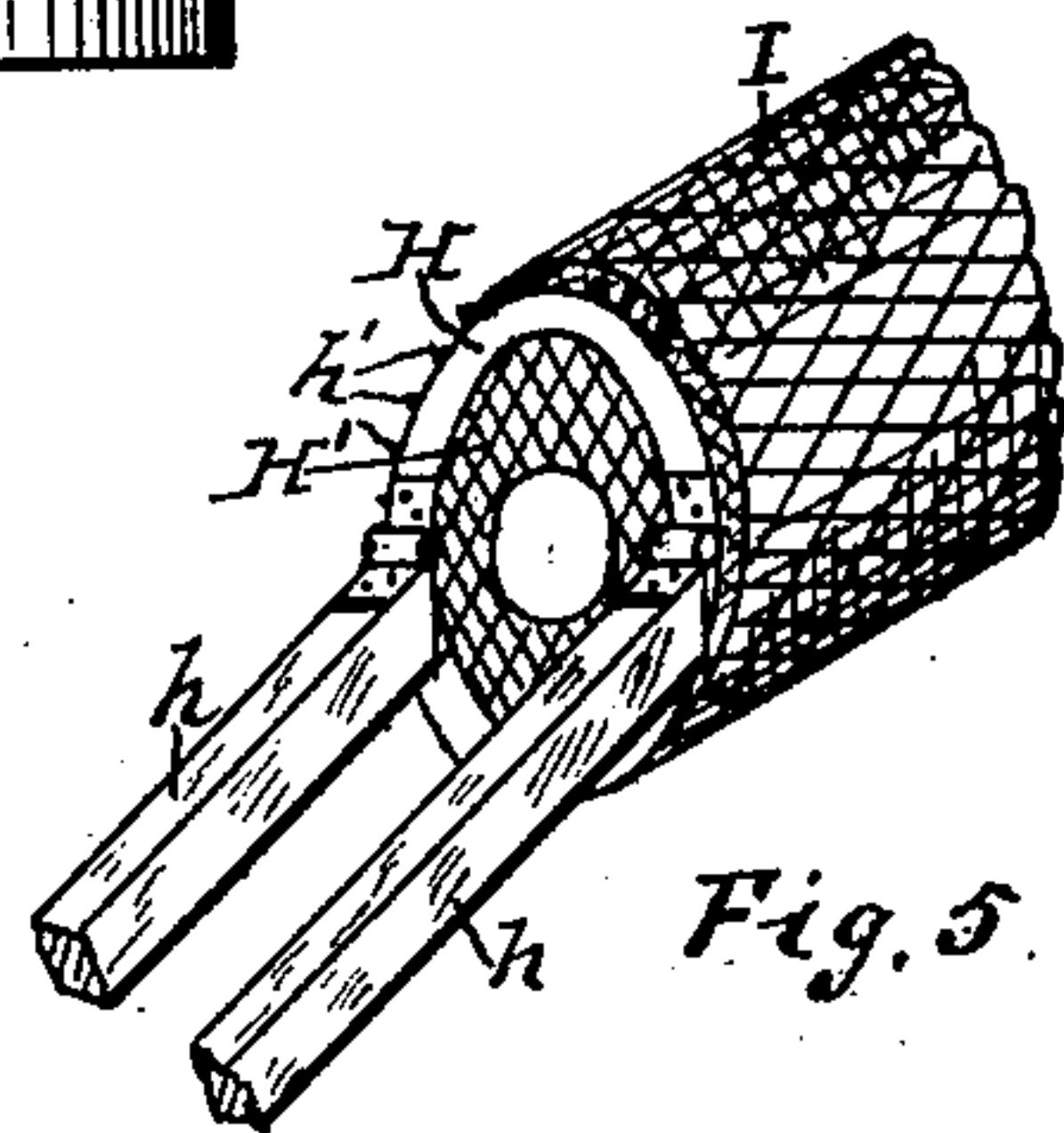
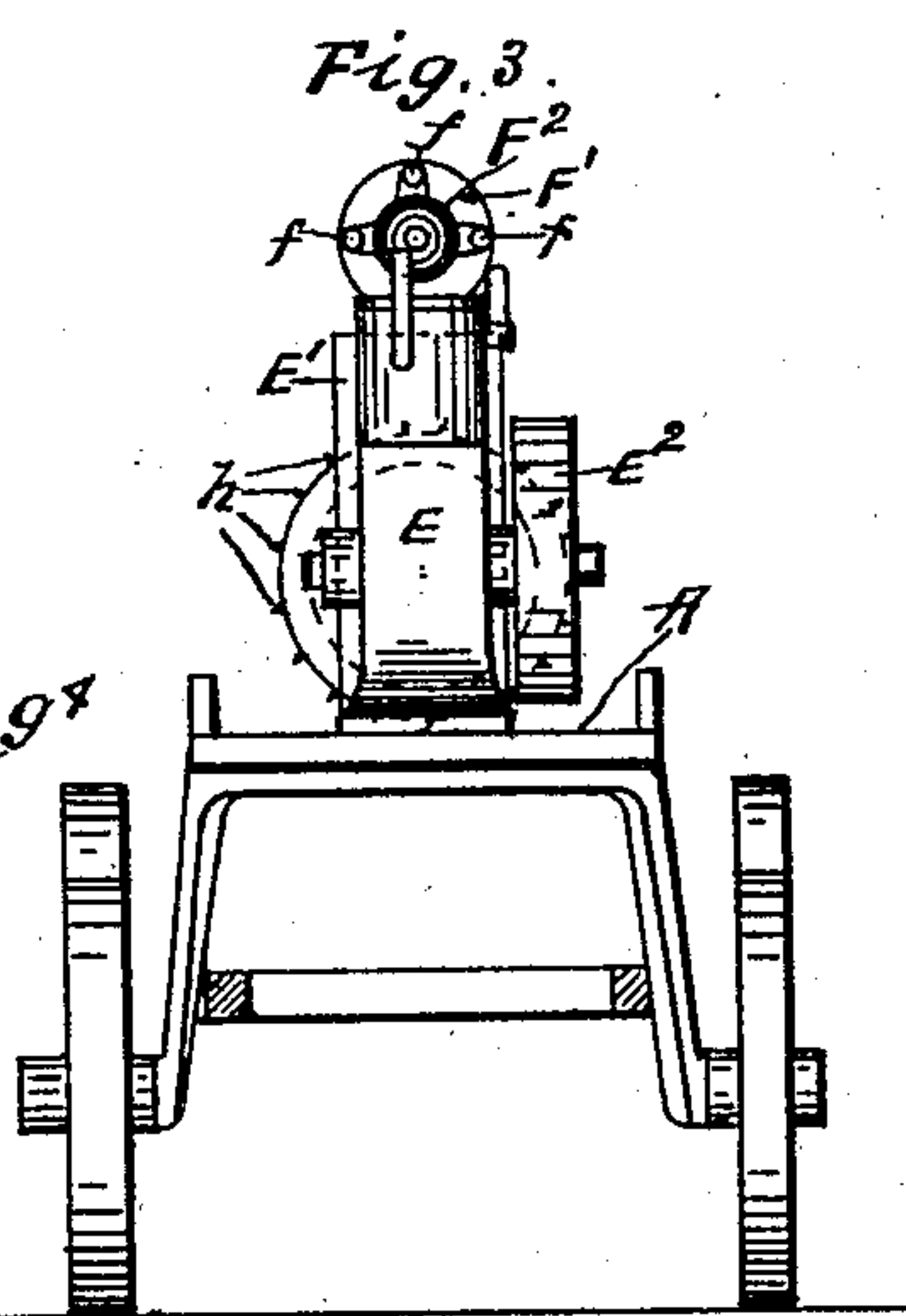
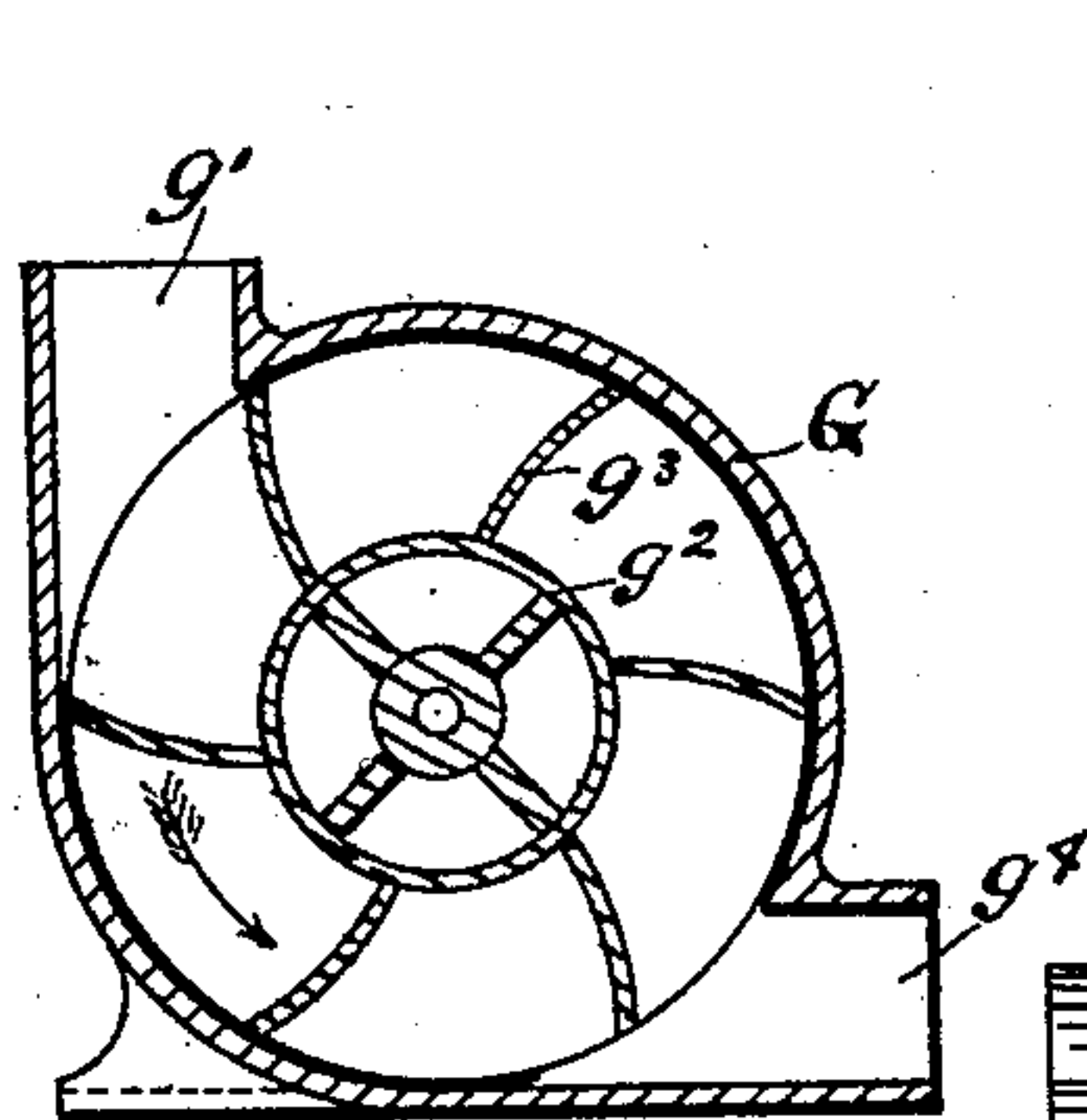
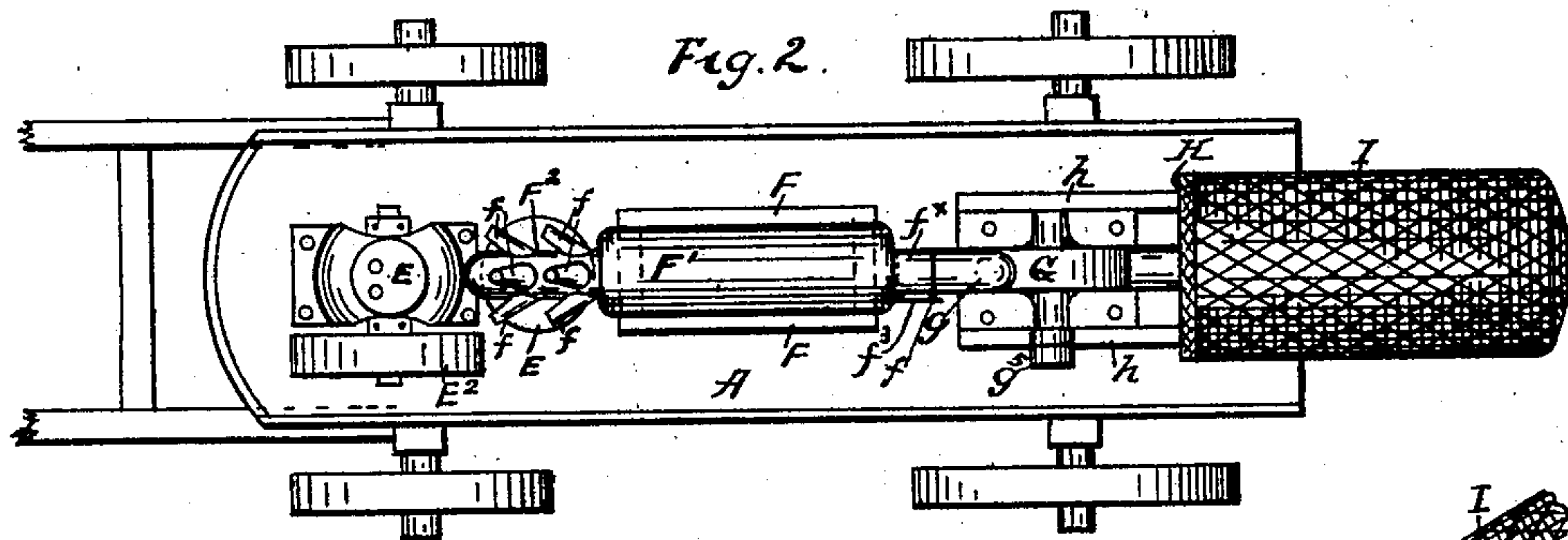
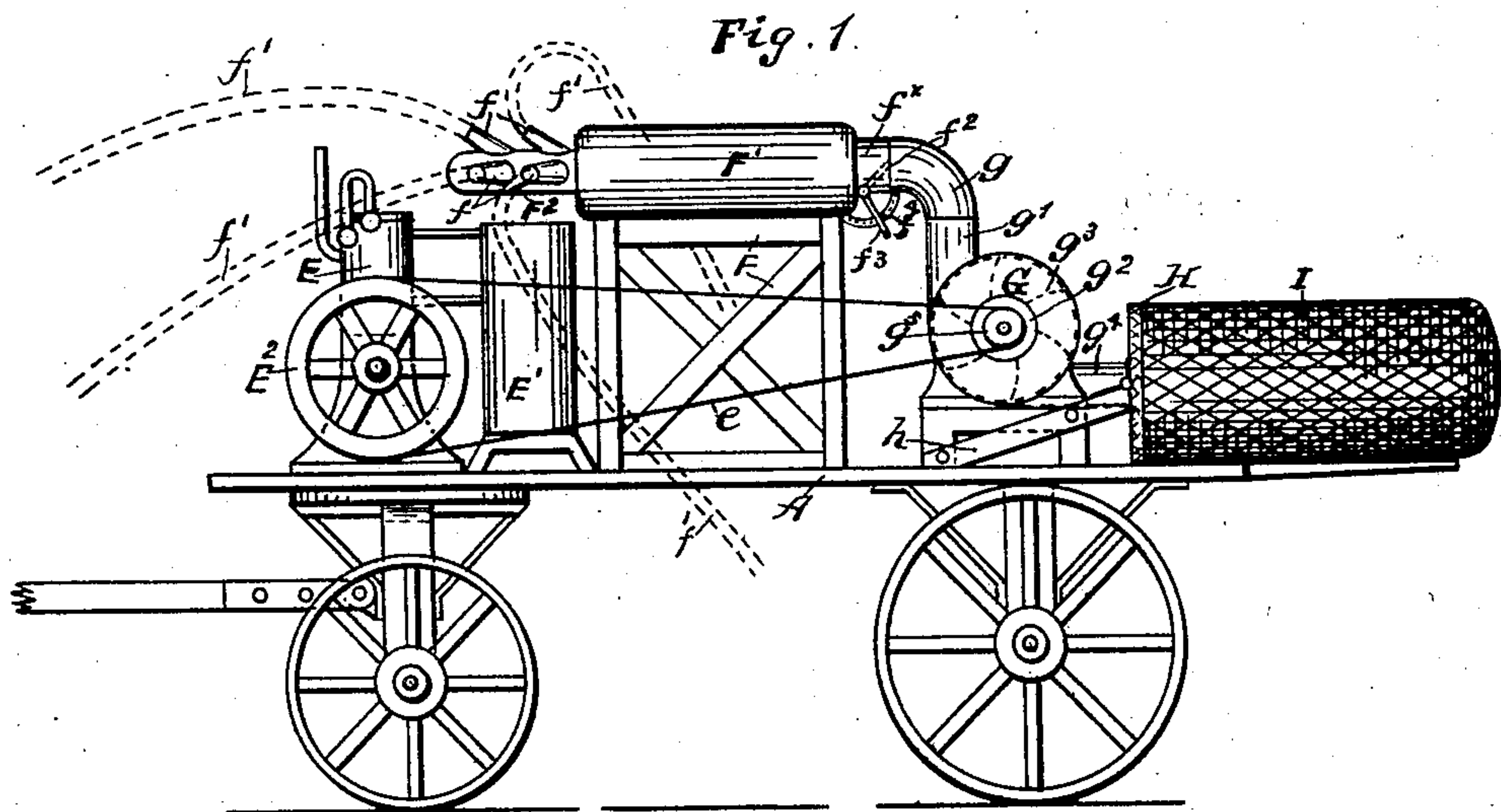


No. 886,335.

PATENTED APR. 28, 1908.

G. H. ZEMPTER.  
COTTON HARVESTING MACHINE.

APPLICATION FILED MAY 27, 1907.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

GEORGE H. ZEMPTER, OF GREENVILLE, MISSISSIPPI, ASSIGNOR OF ONE-HALF TO COHN WITNEY & GOLDFARB, OF GREENVILLE, MISSISSIPPI.

## COTTON-HARVESTING MACHINE.

No. 886,335.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed May 27, 1907. Serial No. 376,042.

*To all whom it may concern:*

Be it known that I, GEORGE H. ZEMPTER, citizen of the United States, and resident of Greenville, in the county of Washington and State of Mississippi, have invented certain new and useful Improvements in Cotton-Harvesting Machines, of which the following is a specification.

The subject of the present invention is an improved cotton harvester of that type wherein pneumatic means are employed for gathering the cotton, the more prominent objects of the invention being to simplify and render more effective this class of constructions, as well as permit the cotton to be automatically delivered to a sack or other receptacle detachably connected with respect to the harvester, so that such receptacle when desired can be readily disconnected and removed for emptying, or replaced by another.

With the above and other purposes in view, the improved harvester comprises a suitable support or body on carrying wheels, the latter adapting it for transportation either by being drawn by horses, or propulsion through the medium of motive power, a suitable motor, a suction chest, exhaust fan and receptacle for the harvested cotton being mounted on said support, and mutually disposed in successive longitudinal relation from front to rear and coactive in a compact and efficient manner, provision being also present for the connection of the flexible tube or tubes by which the cotton is removed from the plant and conveyed to the chest.

There are other important features connected with the invention, which, besides those alluded to, are clearly set forth in the subsequent detailed description.

In the accompanying drawing forming part of this specification—Figure 1, is a side elevation of a cotton harvester embodying my invention. Fig. 2, is a plan view of the machine disclosed in Fig. 1, the belt gearing the motor with the driven pulley of the rotary fan being omitted. Fig. 3, is a front elevation of said machine. Fig. 4, is a vertical sectional detail view of the rotary fan. Fig. 5, is a detail view of the sack-engaging ring and parts more immediately supporting the same.

Similar reference characters are employed to designate corresponding parts in the several figures of the drawing wherein they occur.

The main support or body comprises an

extended horizontal platform A, mounted on suitable carrying wheels adapted for transportation. Upon the platform and adjacent to the front thereof, is mounted a motor E, which for the sake of convenience and economy, will preferably be a small hydro-carbon engine of the high compression type, and adapted to be supplied by oil from a reservoir E', in immediate relation to such engine. Also on the platform and behind the reservoir E', is a small vertical frame F, of such height as to enable it to support at its top and in a plane slightly above the reservoir and engine, a longitudinally extended suction chest F' carrying at its forward end a short horizontal and forwardly projecting casing F<sup>2</sup>, obliquely from the top and sides of which project the forwardly disposed nipples f. These nipples as will be readily understood are designed to have attached, thereto, the inner ends of lengths f', of flexible tubing indicated by dotted lines in Fig. 1.

The chest F', is provided at its rear with a small box f<sup>x</sup>, within which is mounted a flap-valve or damper f<sup>2</sup>, the pivoting rod of which projects externally at one side for the connection of a short operating handle f<sup>3</sup>, permitting the position of the valve to be adjusted to vary the area of communication through the box. A sector f<sup>4</sup>, has a series of notches for permitting the engagement and retention of the handle in any of the positions to which it may be moved in adjusting the valve, the handle being capable of a limited lateral spring-yield for such purpose.

Connecting with the end of the box f<sup>x</sup>, is a downwardly curved pipe g, the lower end of which is connected with the tangentially located intake g', of the casing of the rotary fan G. The rotating member of this fan comprises a cylindrical hub g<sup>2</sup>, interiorly braced and the radial curved blades g<sup>3</sup>, both the hub and blades being of such transverse width that they snugly practically extend across the space between the side walls of the fan casing, but without interfering with the free revolution of said hub and blades. The latter are of such length that their outer edges will sweep in close proximity to the interior surfaces of the peripheral portions of the case. These blades are also so curved that when the fan is rotated in the direction indicated by the arrow in Fig. 4, the convex sides of said blades will be presented in the direction of the horizontal tangential



discharge outlet  $g^1$ , of the fan casing, until the blades move upward beyond said outlet.

Parallel inclined bars  $h, h$ , rigidly mounted on the platform at the sides of the fan G, pivotally support at their rear upper ends, a vertical transverse ring H, centrally within which the outlet  $g^1$ , extends. This ring has externally a series of radial spurs or projections  $h'$ , designed to be engaged by the material forming the mouth of a sack I. It will be noted that the length of the platform and the position of the ring H, are such that when the sack is engaged as described, it can be supported longitudinally on the end portion of the platform.

From the description thus far, it will be readily comprehended that with the engine running and its driving wheel  $E^2$ , geared by a belt  $e$  with a pulley  $g^5$ , secured on the projecting journal of the fan-hub, the rotary member of the fan will revolve at a high rate of speed thus inducing an exhaust action of considerable force through the flexible tubes, the casing  $F^2$ , suction chest  $F'$ , valve box, connecting pipe, fan casing and terminating in a discharge within the sack. The power of the suction action thus induced, will be controlled to a considerable extent by the position of the valve  $f^2$ , for the more pronounced throttling position of the latter, the more positive will be the exhaust action.

As the machine moves forward, the attendants apply the open ends of the flexible tubing to the bolls which are thereupon detached and drawn through the tubes and delivered within the casing  $F^2$ , from whence they pass into the chest  $F'$ , past the box  $f^x$ , and next successively to the pipe  $f^2$ , and fan casing, being ultimately discharged within the sack. Manifestly, the cotton will be retained within such sack while the air escapes through the interstices of the latter. When the sack becomes filled, it can be disengaged from the ring H, and another but empty sack adjusted in its place.

With a view of preventing the cotton from being blown from the sack by back action of the air, the ring H, is preferably provided with an inner guard  $H'$ , of reticulated fabric, having a central opening for the reception of the fan discharge, such guard permitting the free escape of the air but serving to retain the cotton.

The pivotal connection of the ring H, permits it to be tilted for the more convenient engagement of the sack therewith.

It will be observed that the arrangement of the casing  $F^2$ , suction chest and connection with the exhaust fan, is such that the air and cotton during their passage into and from the casing  $F^2$ , to the exhaust fan, encounters no abrupt angles or changes of direction of travel, said air and cotton moving in a longitudinal direction throughout their traverse to the fan. This avoids any tendency

to undesirable lodging or choking, besides insures uniformity of the action of the air current. The particular oblique position of the nipples  $f$ , likewise contributes to this result.

The engine, its reservoir, the frame F, suction chest  $F'$ , and the exhaust fan will all be rigidly secured in position.

As before intimated, the improved harvester is simple in construction; and highly efficient and useful in operation.

I do not wish to be understood as limiting myself to the precise construction and arrangement of parts shown and described, but reserve the right to all modifications that may be fairly considered within the scope of my invention.

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

1. In a cotton-harvester, the combination with a platform having a forwardly located motor thereon, of a casing having forwardly projecting nipples, a stationary horizontal suction chest, a motor-gearred fan having a curved communication with said chest and provided with a discharge for longitudinally delivering in a horizontal direction, and a sack horizontally disposed and supported and having its mouth portion detachably engaged in receiving position relative to said discharge, said casing, chest, fan communication, fan and engaged portion of the sack all successively disposed in the same vertical longitudinal plane, and said motor being also in the same plane, said motor and other longitudinally arranged elements mentioned being all within the plan area of the platform.

2. In a cotton-harvester, the combination with a suction chest, means for conveying cotton to the latter, and a fan communicating with said chest and having a discharge for horizontally delivering in a longitudinal direction, of tilting means in receiving position relative to said discharge, and a sack horizontally disposed and supported and having its mouth portion detachably engaging the tilting means, said several elements being mutually disposed in vertical longitudinal relation and all within the plan area of the platform.

3. In a cotton-harvester, the combination with a suction chest, means for conveying the cotton to the latter, and a fan communicating with said chest, of a ring provided with a guard receiving the fan-discharge and perforated for the escape of air, and a cotton receptacle detachably engaged with said ring.

4. In a cotton-harvester, the combination with a suction chest, means for conveying the cotton to the latter, and a fan communicating with said chest and discharging horizontally, of a vertical ring supported in receiving position relative to the fan discharge and



having sack-engaging projections, and a horizontal sack-support adapted to maintain a sack with its mouth in longitudinal registry with the ring.

5 5. In a cotton-harvester, the combination with a suction chest, means for conveying the cotton to the latter, and a fan communicating with said chest and discharging horizontally, of a ring pivotally supported at each side in  
10 receiving position relative to the fan discharge and having sack-engaging projections and a horizontal sack-support adapted to maintain a sack with its mouth in longitudinal registry with the ring.

15 6. In a cotton-harvester, the combination with a suction chest, means for conveying the

cotton to the latter, and a fan communicating with said chest and discharging horizontally, of a suitably supported vertical ring having sack-engaging projections and interiorly provided with a perforated guard having an opening in receiving position relative to the fan discharge, and a horizontal sack support adapted to maintain a sack with its mouth in longitudinal registry with the ring. 20 25

Signed at Greenville, in the county of Washington, and State of Mississippi, this 23d day of February, A. D. 1907.

GEORGE H. ZEMPTER.

Witnesses:

JOEL COLM,  
BEN NELKEN.