

F. M. HANKS.
COTTON HARVESTER.

No. 359,724.

Patented Mar. 22, 1887.

Fig. 3.

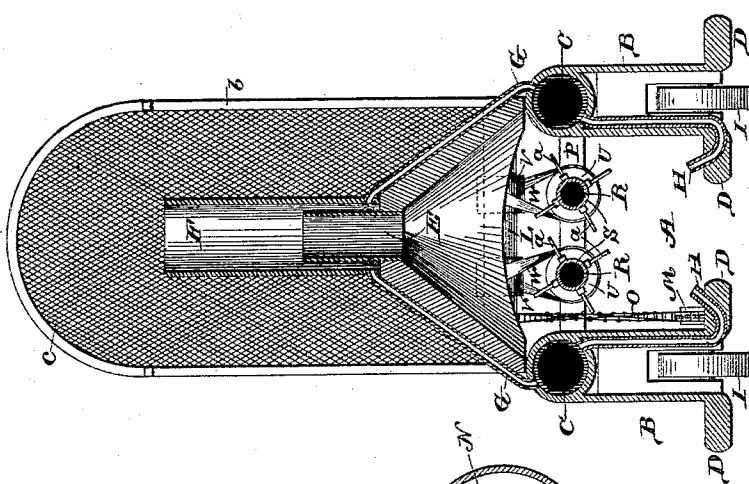
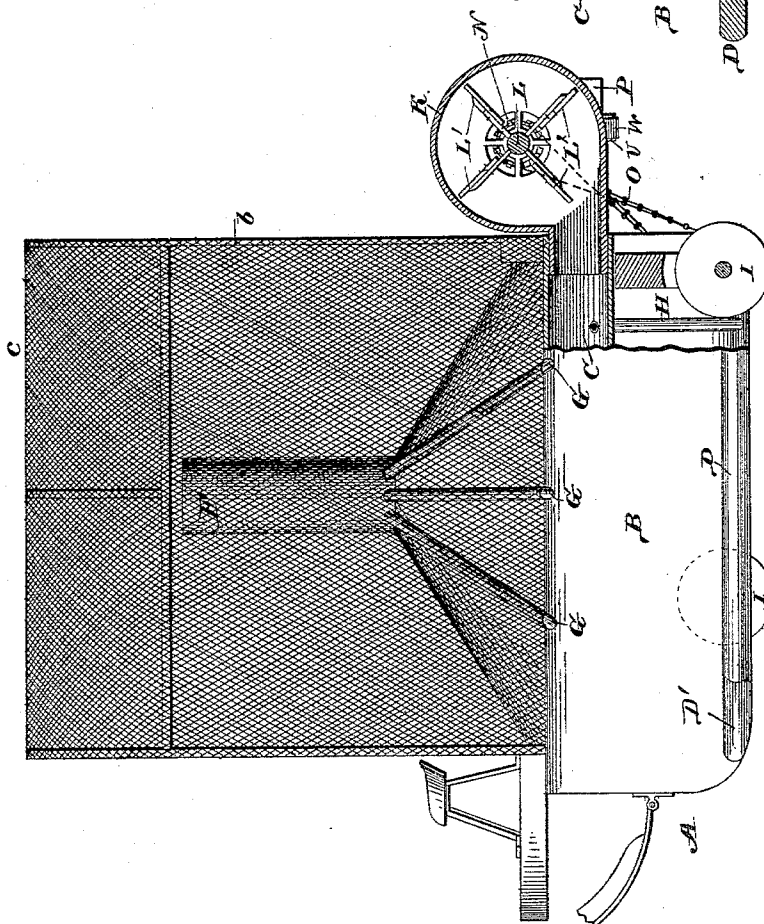


Fig. 1.



Witnesses

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Fig. 2.

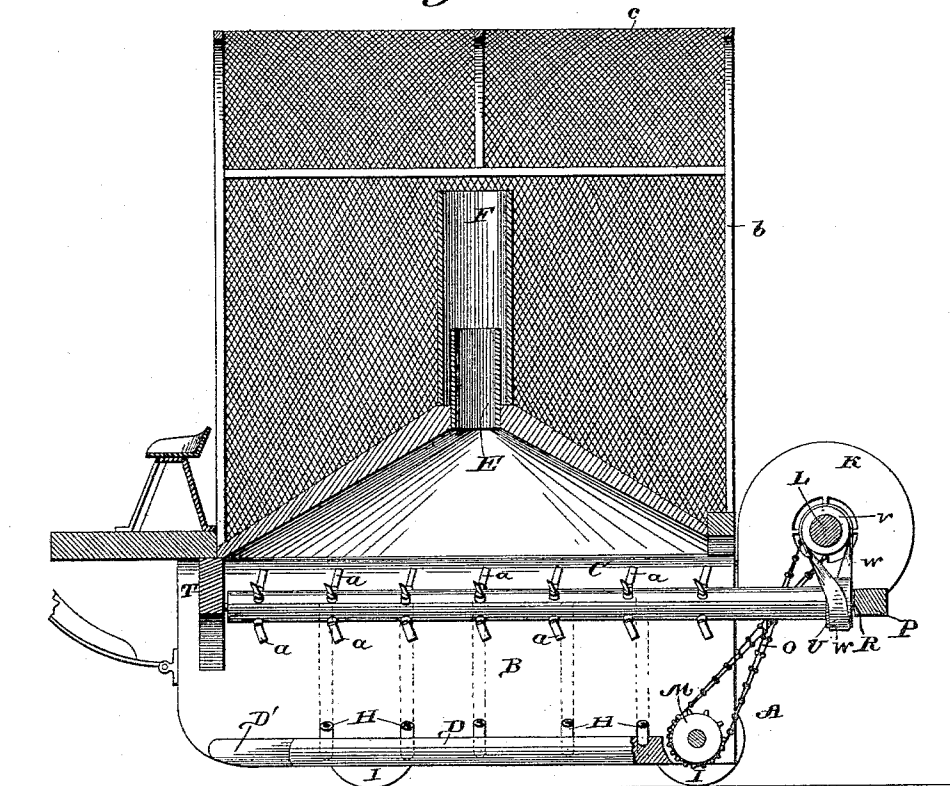


Fig. 4.

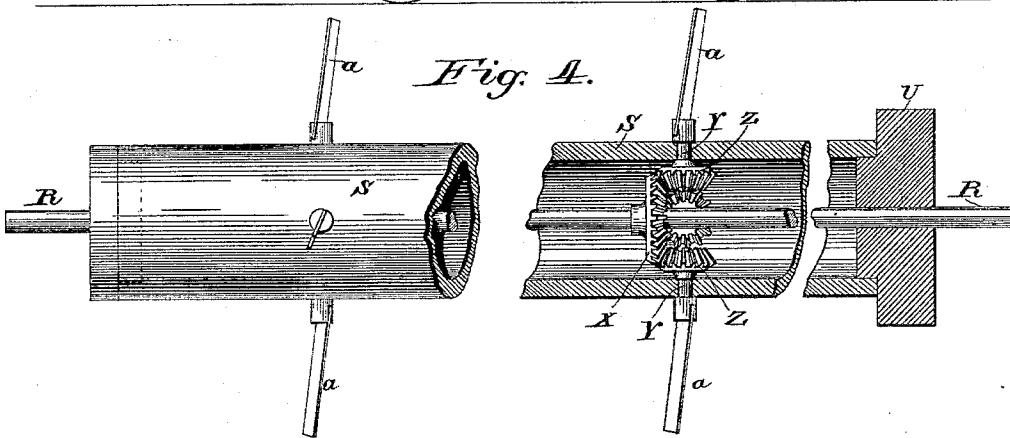
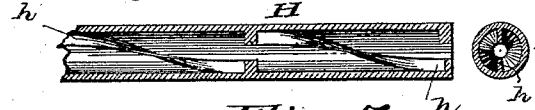


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANCIS M. HANKS, OF MIDWAY, LOUISIANA.

COTTON-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 359,724, dated March 22, 1887.

Application filed June 16, 1886. Serial No. 205,347. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. HANKS, a citizen of the United States, residing at Midway, in the parish of Bossier and State of Louisiana, have invented a new and useful Improvement in Cotton-Harvesters, of which the following is a specification.

My invention relates to an improvement in cotton-harvesters; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a cotton-harvester embodying my improvements. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a vertical transverse sectional view of the same. Fig. 4 is partly an elevation and partly a sectional view of one of the stirring-shafts. Fig. 5 is a sectional view of one of the blow-pipes.

A represents a vertical rectangular frame or case, which is provided with hollow sides B, in the upper sides of which are located horizontal flues C, that extend throughout the entire length of the frame. The sides B are formed of sheet metal or any other suitable preferred material, and their lower edges are bent outwardly at right angles, thereby forming horizontal flanges D. These flanges extend outwardly from the outer sides of the hollow walls, and also inwardly from the inner sides of the said hollow walls, and the front ends of the said flanges are beveled or cut away on one side, as at D', so as to direct the stalks of cotton between the interior projecting flanges, D, and thus prevent the cotton-plants from being injured. The top of the frame is made in the shape of an inverted funnel, and from its apex projects a vertical pipe or spout, E. Surrounding the said spout, and secured on the apex of the cone-shaped cover or top, is a vertical pipe, F.

G represents a series of pipes that extend from the flues C to the lower end of the pipe F, and H represents a series of pipes which extend from the flues C downwardly on the inner sides of the hollow walls, and have their lower ends turned upwardly and extended through the inner flanges, D.

In suitable bearing-blocks or standards, which are located between the inner and outer walls of the hollow sides B of the frame, are

journalled supporting-wheels I, the said wheels being inclosed at the front and rear ends of the said hollow walls, and thereby prevented from coming in contact with the cotton-plants and injuring them.

K represents a pair of circular inclosing cases, which are located at the rear ends of the flues C and communicate with the said flues. A transverse shaft, L, is journalled centrally in the said cases K, and to radial arms of the said shaft, located within the cases K, are attached fans or blowers L', that are adapted to force a strong current of air into each of the flues C when the shaft L is rotated. The axle of one of the wheels I, at the rear end of the machine, extends inwardly beyond the inner side of the wall, and is provided with a pulley or sprocket-wheel, M.

N represents sprocket-teeth, which are attached to the shaft L, near one of the cases K, and the said sprocket-teeth are connected to the sprocket wheel or pulley M by means of a crossed belt or chain, O. By this construction it will be readily understood that when the machine is drawn along the rows of cotton-plants, motion from the wheel I will be communicated to the driving-shaft L.

P represents a transverse bar at the lower sides of the cases K, and R represents a pair of longitudinal shafts, the rear ends of which are secured to the bar P at a suitable distance from each other, and the front ends of the said shafts are secured to a transverse bar, T, at the front end of the machine-frame. These shafts R diverge slightly toward their front ends.

S represents a pair of cylindrical sleeves, the interior diameter of each of which is considerably greater than the diameter of the shaft R, and the said sleeves are journalled on the said shafts, extend throughout their entire length, and are capable of rotation thereon. The rear ends of the sleeves S are provided with pulleys U.

V represents pulleys on shaft L, which are connected to the pulleys U by means of endless belts W.

It will be observed that the shafts R are fixed, and that the sleeves S rotate on the said shafts. Each of the shafts R is provided with a series of fixed miter-gear pinions, X, which are arranged at suitable intervals on the shafts,

and in the sleeves S are journaled a number of short shafts, Y, the inner ends of which are provided with miter-pinions Z, which mesh with the pinions X, on the shafts R. To the 5 outer ends of the shafts Y are secured flexible metallic fingers *a*.

On the upper side of the frame or case A is erected a vertical frame, *b*, over which is stretched and secured a canopy of wire-gauze 10 or other suitable material, *c*.

The operation of my invention is as follows: The machine is drawn across the field with a flange, D, on each side of a row of cotton-plants, so that the tops of the plants pass between the rotating sleeves S. As the said 15 sleeves rotate the fingers *a* are rotated, whereby each of the fingers has two rotations, the one being about the axis of the sleeve and the other about its own axis. These fingers being very flexible, as before described, pass through the cotton-plants, and their action on the plants disengages the cotton therefrom. During the progress of the machine the shaft 20 L is in motion, thus causing the fans to force strong currents of air into the flues C, from whence the said currents are divided, a portion of the blast passing down through the pipes H, and from thence upwardly on the inner sides of the sides B, thus creating a strong upward 30 current under the machine, which escapes through the pipe E at the top of the frame. As the detached locks of cotton are exceedingly light they are carried by the currents of air and discharged through the pipes E and 35 F, and caught by the canopy and become lodged upon the upper side of the frame A. The currents which are forced upwardly through the pipes G into the pipes F, which surround the pipe or nozzle E, tend to create 40 a partial vacuum in the pipe F above the upper end of the nozzle or pipe E, thereby assisting and strengthening the upward current of air that has acted upon the cotton.

I do not desire to limit myself to the construction hereinbefore shown and described, 45 as it is evident that many modifications may be made therein without departing from the spirit of my invention.

In order to cause the blasts of air which

act upon the cotton-plants to whirl, and thus 50 resemble a cyclone, and consequently exert considerable force upon the cotton, I form the pipes H with interior spiral threads or wings, *h*, as shown in Fig. 5.

Having thus described my invention, I 55 claim—

1. In a cotton-harvester, the case or frame having the inverted funnel-shaped top provided with the spout E, the pipe F, surrounding the said spout, the pipes H, to direct 60 currents of air upwardly under the top to escape through the spout E, the pipes G, to direct currents of air to the pipe F around the spout, for the purpose set forth, and the blowers to force the air through the pipes H and G, substantially as described. 65

2. In a cotton-harvester, the case or frame having the closed top provided with the spout E, the pipe F, surrounding the said spout, the 70 flues C, the blowers to force air into the said flues, the pipes H, depending from the flues and having their lower ends upturned to force currents of air upwardly under the top of the case, and the pipes G, extending from the flues 75 C to the pipe F, for the purpose set forth, substantially as described.

3. The cotton-harvester having the case or frame provided with the closed top, the vertical sides, and the spout or opening in the top, in combination with the longitudinal 80 shafts R, having the gear-wheels X, and arranged on the inner opposing sides of the case, the rotating sleeves S on the said shafts, the shafts Y, journaled in the said sleeves and having the stirring-fingers *a* at their outer 85 ends and the pinions Z at their inner ends, meshing with wheels X, and the blowers to direct currents of air upwardly between the sides of the case under the top thereof and through the spout or opening, for the purpose 90 set forth, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRANCIS M. HANKS.

Witnesses:

B. F. ONEAL,

R. E. WYCHE, Jr.