J. E. WATKINS & M. SALE.

COTTON-HARVESTERS.

No. 194,855. Patented Sept. 4, 1877.

Fig. 1.

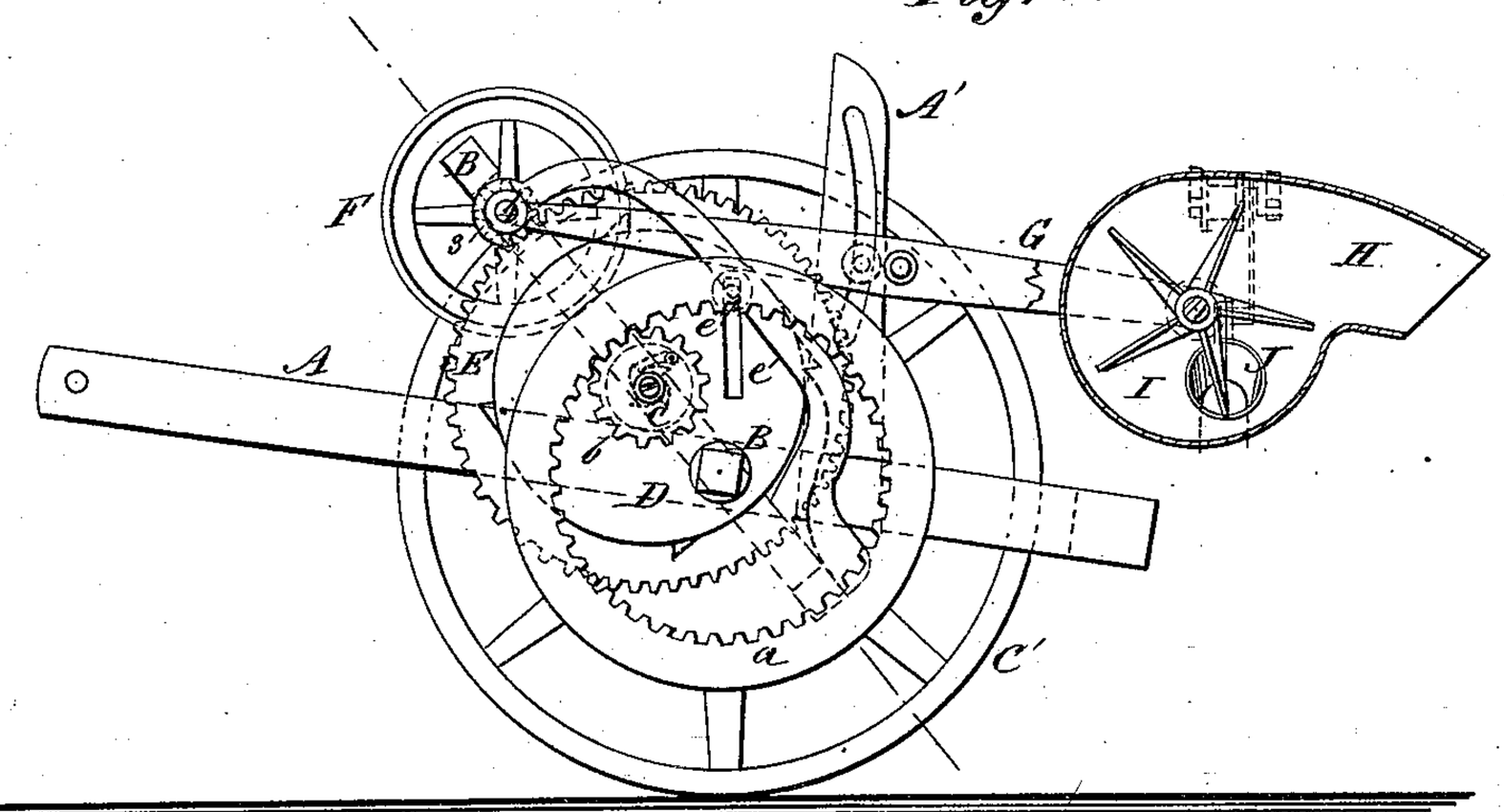


Fig. 2

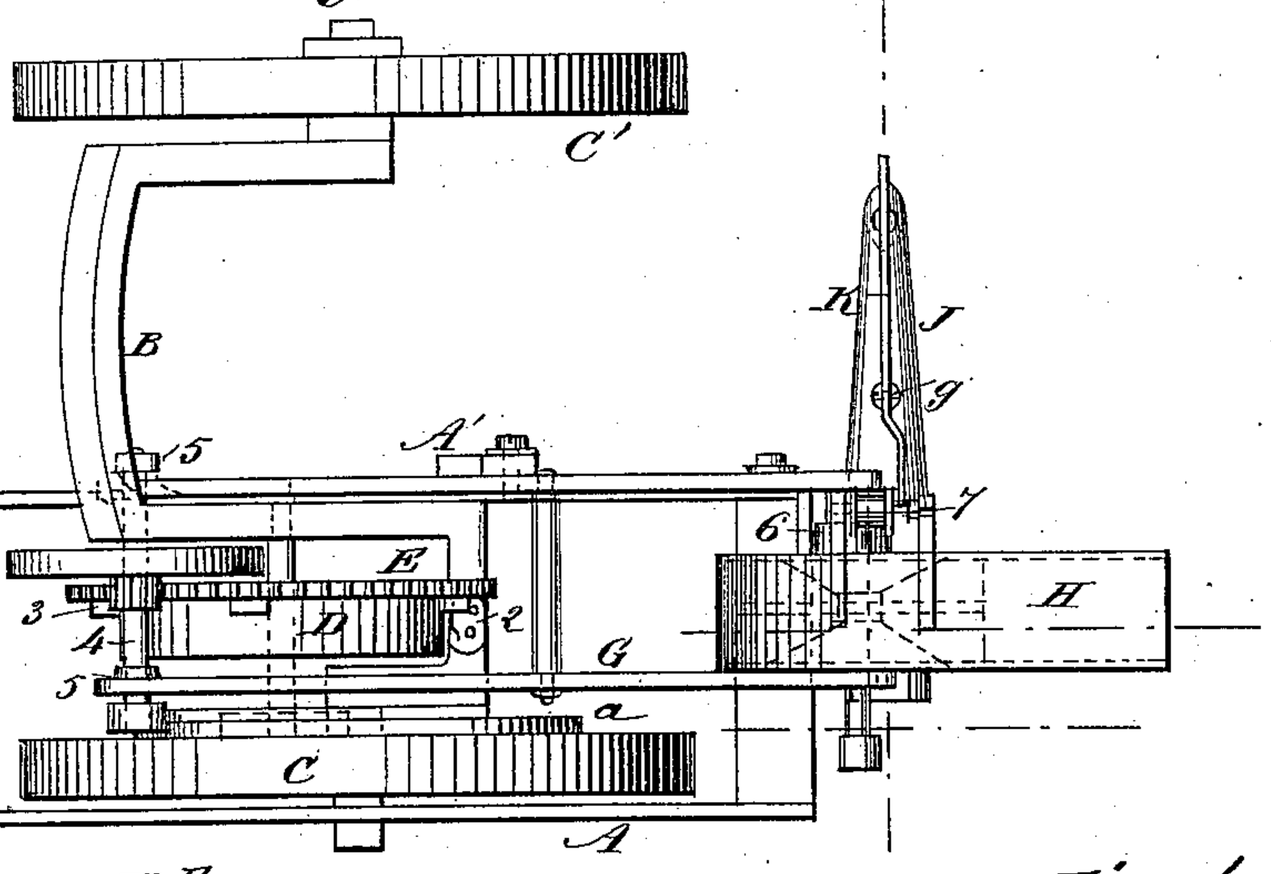


Fig. 3

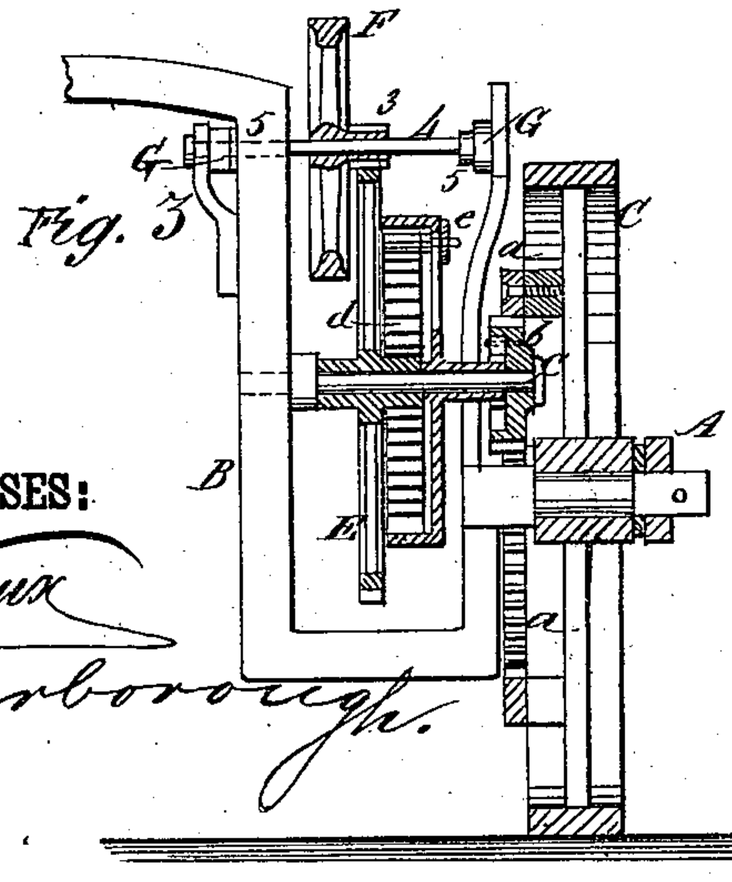
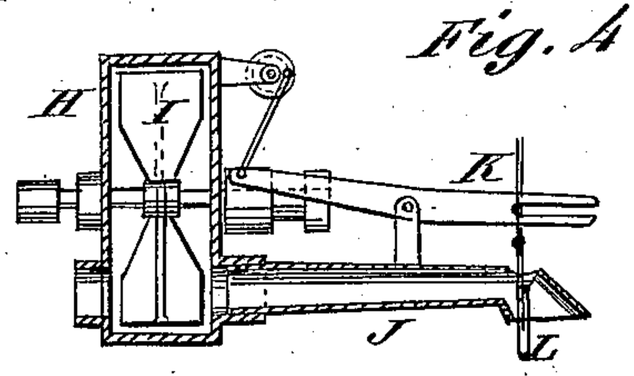


Fig. 4



WITNESSES:

C. Neveux

J. H. Scarborough.

INVENTORS

J. E. Watkins.

M. Sale.

BY

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN E. WATKINS AND MORRIS SALE, OF SMITHFIELD, KENTUCKY.

IMPROVEMENT IN COTTON-HARVESTERS.

Specification forming part of Letters Patent No. **194,855**, dated September 4, 1877; application filed June 18, 1877.

To all whom it may concern:

Be it known that we, JOHN E. WATKINS and MORRIS SALE, of Smithfield, county of Henry and State of Kentucky, have invented a new and Improved Cotton-Picker, of which the following is a specification:

This invention has relation to machines for picking cotton in the field; and the nature of our invention consists, first, in a novel combination of devices with an exhausting-fan and a picker, hereinafter explained, whereby one of the transporting-wheels, when rotated, operates continually to wind up a spring, which, in turn, gives rapid motion to said fan and picker, as will be fully understood from the following description; second, in applying the exhausting-fan and the picking devices on the end of a frame which is vertically adjustable on the main frame, as will be hereinafter explained; third, in combining picking-nippers with a nozzle which communicates with the fan-case, which nippers will pick the cotton from the pods, deliver it into the nozzle, and keep the same clear, as will be hereinafter explained.

In the annexed drawings, Figure 1 is an elevation of one side of the machine with the driving-wheel removed from its axle and one side of the fan-case removed. Fig. 2 is a top view of the machine. Fig. 3 is a section in detail of the driving mechanism. Fig. 4 is a vertical section through the fan-case, exhausting-nozzle, and picking device.

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

The main frame of the machine is designated by letter A, and is composed of two parallel bars united at their rear ends, and extended forward to form shafts for a horse. The inner bar is rigidly secured to a cranked axle, B, on the ends of which are two transporting-wheels, C C′, one of which is the driving-wheel. On the driving-wheel C is secured a large inside gear-wheel, *a*, which engages with a pinion, *b*, applied on the hub of a spring-case, D. When the machine is moved forward, the wheel *b* engages, by means of a pawl, with a ratchet on said hub, and turns the case D; but when the machine is backed the wheel *b* does not turn case D.

The case D is applied on a shaft, *c*, rigidly attached to a vertical part of the cranked axle B, and inside of this case is a strong convolute spring, *d*, one end of which is attached to a slip, *e*, and the other end is attached to the hub of a large spur-wheel, E, loosely applied on shaft *c*. The spring-case D is prevented from turning backward by a spring-pawl, 2, which engages with teeth on the periphery of the case. The large spur-wheel E engages with a pinion, 3, on the shaft 4 of a belt-wheel, F, which shaft is borne by a cranked axle, B.

G designates a frame, which is pivoted to fixed tubes 5 5, through which the shaft 4 passes, and is adjustably secured to a slotted standard, A′, rising from the frame A. Frame G is thus vertically adjustable for plants of different heights.

To the rear ends of the frame G a fan-case, H, is secured, which contains a fan, I, that receives rapid rotation from the belt-wheel F by means of a belt not shown in the drawings. The belt is carried under an idler, 6, and around a flanged pulley, 7.

J designates a tapered nozzle, the mouth of which is directed downward. This nozzle is attached to the side of case H, as shown in the drawings, or by a flexible tube, and as the bolls of cotton are picked from the pods they are quickly drawn through the nozzle into the fan-case and blown out of this case into a sack or other suitable receptacle.

On top of the nozzle J is a standard, 9, which affords a fulcrum for a lever, H, which receives vibration from a crank on the shaft of pulley 7. The outer end of this lever is forked, and has suitably attached to it nippers L, which pick the cotton from the pods and deliver it into the mouth of the nozzle J. These nippers will keep the nozzle clear, and prevent clogging of the cotton.

In practice we shall use a governor to regulate the speed of the fan. We may also use steam to run the machine.

The convolute spring that drives our fan is employed to get a reserved force for use while stopping to gather the cotton where the pods are thickest.

We are aware that springs have been used to ease back the advance motion of millstones.

On the stem of the governor, where the valve is fastened, is placed our spring-brake,

which is brought into contact with pulley J whenever the spring forces the fan beyond a certain number of revolutions. By having our spring of proper length our reserved motion is obtained while it is working down in the slot. The nipper that picks the cotton out of the pod also delivers it to the tubes that are guided by the hand, so that the cost of picking is lessened fully fifty per cent., while all trash is avoided. If the cotton is damp, it will become dry and ready for baling in passing through the picker, thus saving all labor of the drying operation.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, in a cotton-picker, of a suction-fan, a picker, and a convolute spring, the latter wound up by a transporting-wheel, as shown and described.

2. In a cotton-picking machine, the combination, with cranked axle D, of the main frame A and vertically-adjustable frame G, bearing the fan and picking device, substantially as described.

3. The picking-nippers L, combined with the nozzle J and fan-case H, substantially as described.

JOHN EVAN WATKINS.
MORRIS SALE.

Witnesses:
JAS. W. SPURGIN,
G. W. BLAYDES.