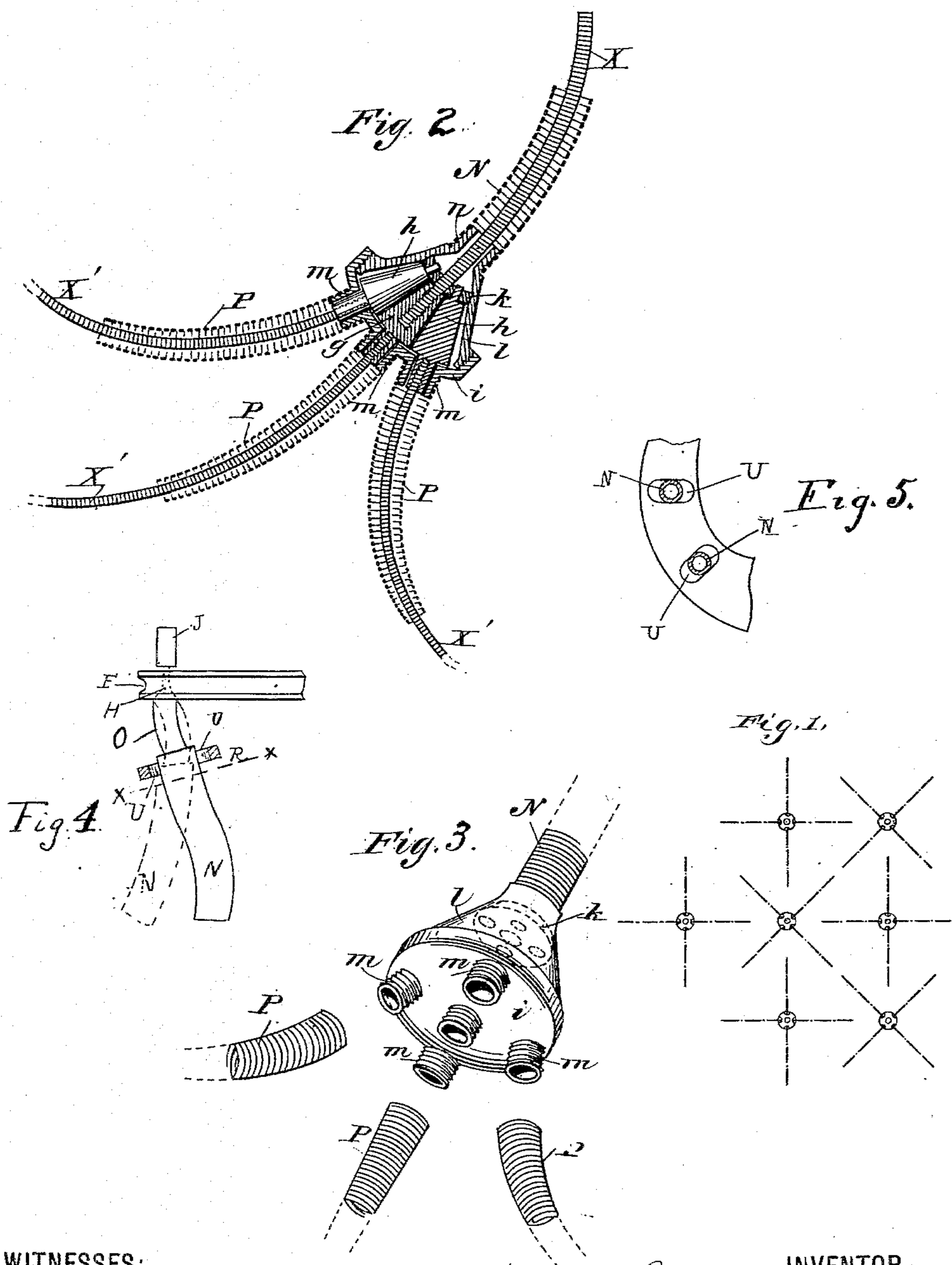


(No Model.)

G. BEEKMAN.
COTTON HARVESTER.

No. 495,007.

Patented Apr. 11, 1893.



WITNESSES:

A. F. Parker.
H. V. R. Phillips

INVENTOR

Gerard Beekman.

UNITED STATES PATENT OFFICE.

GERARD BEEKMAN, OF NEW YORK, N. Y.

COTTON-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 495,007, dated April 11, 1893.

Application filed November 15, 1890. Serial No. 371,525. (No model.)

To all whom it may concern:

Be it known that I, GERARD BEEKMAN, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Cotton-Harvesters, the said invention having been described, also, in an application for United States Letters Patent filed by me on the 17th day of February, 1887, Serial No. 227,897, on which Letters Patent were granted to me on the 23d day of September, 1890, No. 436,770, by reference to which this will fully appear, the claims for the subject-matter described in the present application having been omitted by me from the said prior application, as required by the Patent Office, without any intention of abandonment.

The following is a specification of my invention, reference being had therein to the accompanying drawings.

My invention relates to that class of cotton-harvesters in which the picking mechanism rotates backward at substantially the same rate of motion as that of the harvester over the ground.

The objects of my invention are to group and support several pickers in one elastic-arm, such as is described in my said Letters Patent, and I attain these objects by the mechanism illustrated in the accompanying drawings.

Figure 1 represents a plan view of the arrangement of adjoining arms, and pickers of the kind shown. Fig. 2 represents a vertical section of a modified form of an elastic-arm, in which one elastic shaft sets in motion several pickers. Fig. 3 represents a perspective view of the same, the pickers being removed. Fig. 4 is an enlarged detail view showing the regulating wheel, R, in section; and Fig. 5, a horizontal section of Fig. 4 taken on the line $x-x$.

Similar letters refer to similar parts throughout the several views.

Only a portion of the mechanism which I prefer to employ for rotating shafts X is shown. It is the same as that described in my said Letters Patent. Spools J are journaled in wheel F and rotated therein by means of a belt pressing against said spools, said belt being stationary or moving in a direction opposite to that of wheel F. To shanks H, of spools J, are at-

tached flexible shafts X, giving rotation to two or more pickers. The flexible shafts X are preferably composed of a fine coil of wire, substantially as shown in my said Letters Patent, but they may be composed of any other material, suitable for flexible shafting. The pickers attached to the end of the flexible shaft X may be of any form of revolving picking device, suitable for seizing the fiber of cotton, such, for instance, as those referred to in my said Letters Patent. They may be of string or of wire, or spiral spring, which wire may be rigid or flexible, and may be covered with gutta-percha, rubber or textile fabrics, or with any other substance which will assist the cotton in wrapping itself around the pickers.

A short distance below the wheel F, is the regulating wheel R, having slots, U, through which pass the flexible arms N. Said flexible arms, N, are made of coils of wire or of curved tubes. The slots U are elongated, as appear in Figs. 4 and 5, to permit the elastic movement of the arms N, due to the yielding action of the coils of wire O, at their upper parts, whereby they are attached to wheel F. At the lower extremities of the arms N, the pickers X', forming extensions of the shafts X, are supported in their divergent relation by means of the several elastic tubular fingers P. These tubular fingers P, are also composed of coiled wire or other suitable material adapted for flexibility.

In Figs. 2 and 3 is shown a modification of my invention, which modification enables a single flexible shaft, inclosed in an elastic arm, to rotate a number of rollers. The roller, g, Fig. 2, in the form of a frustum of a cone, is screwed upon the lower end of the shaft, X, and around this roller are grouped other conical rollers, h, h. Each of these rollers, g and h, has a picker, X', screwed into its outer and lower end. The bearings of these rollers are in the concave plate, i, and convex-plate, k, Figs. 2 and 3, which are held together by the conical box, l, the concave-plate, i, being screwed upon the lower end of the conical box, l. Below the plate, i, and surrounding each of the shanks of the rollers, g and h, are hollow nipples, m, m, upon which may be screwed the flexible-tip, P, P. The inward drag of the flexible-shaft, X, if made of a spi-

ral coil, as described in my said Letters Patent, will be sufficient, when the parts are properly adjusted, to keep the roller, *g*, constantly in contact with the rollers, *h*, *h*. If
 5 other shafting is used, the rollers, *g* and *h*, *h*, may be covered with rubber, leather, or other suitable material to prevent slipping. The tube, *N*, may be attached directly to the box *l*, by a screw-thread, as shown at *n*. Thus
 10 when the elastic-shaft, *X*, is rotated, each of the conical rollers, *h*, *h*, in contact with the conical roller *g*, will also be rotated; and every one of the rollers will operate a shaft supported by arm *P*, projecting from said elastic
 15 arm, said subsidiary shafts bearing pickers, or being themselves pickers, as *X'*. Should one of the pickers, *X'*, be prevented from rotating freely by being tightly twisted in a ball of cotton, its conical roller, *h*, would slip without stopping the motion of the other pickers,
 20 *X'*, *X'*, rotated by the central conical roller, *g*. Other forms of elastic arms supporting several pickers may be used without departing from my invention. When a number of these
 25 arms, of different lengths, each supporting several pickers, depend from the wheel, *F*, I prefer to arrange them in the manner shown in Fig. 1, or in staggered position so that the

pickers will not interfere with one another, and will search every part of the plant.

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

1. In a machine for harvesting cotton, a main arm and driving shaft therein, in combination with a plurality of arms diverging
 35 from the extremity of said main arm, and shafts, one supported by each of said diverging arms, and operated by said driving shaft, and bearing pickers, substantially as described.

2. In a machine for harvesting cotton a main arm, a driving shaft therein and a plurality of rollers at its extremity operated by said driving shaft, in combination with a plurality of arms, diverging from said main arms
 45 and shafts, one supported by each of said diverging arms and operated by one of said rollers, said shafts bearing pickers, substantially as described.

In testimony whereof I affix my signature, 50 in presence of two witnesses, this 14th day of November, 1890.

GERARD BEEKMAN.

Witnesses:

H. V. N. PHILIPS,
 GEORGE W. SHORT, Jr.