

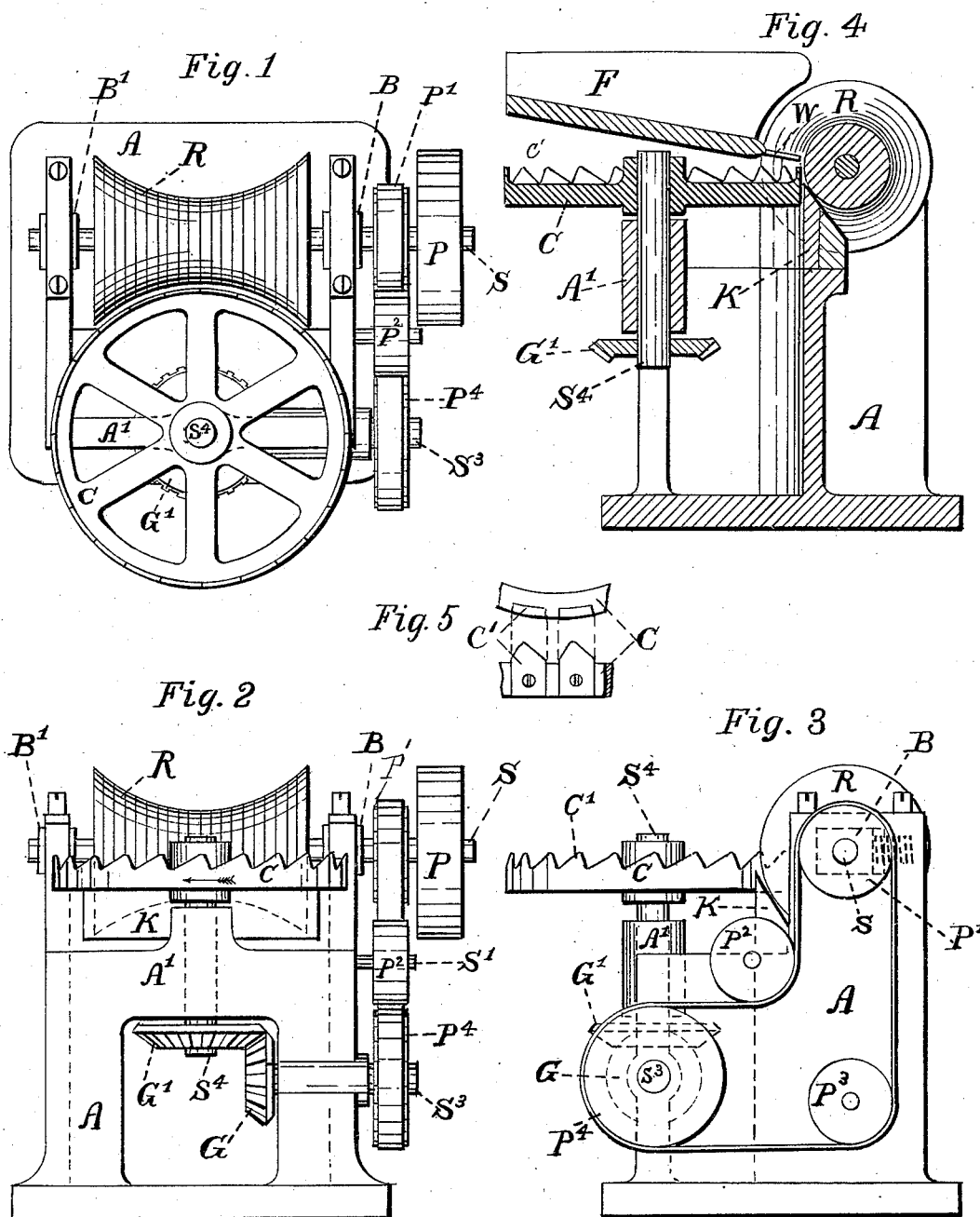
(No Model.)

F. H. RICHARDS.

COTTON GIN.

No. 306,106.

Patented Oct. 7, 1884.



UNITED STATES PATENT OFFICE.

FRANCIS H. RICHARDS, OF SPRINGFIELD, MASSACHUSETTS.

COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 306,106, dated October 7, 1884.

Application filed January 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. RICHARDS, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Cotton-Gins, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

10 My invention relates to that class of cotton-gins known as "roller-gins" and to that kind thereof having an endless seed-clearer adapted to travel in a fixed circuit; and it consists in a combination of mechanism hereinafter described and claimed.

15 Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a front elevation of the same. Fig. 3 is an elevation of that end thereof at the right hand in Figs. 1 and 2. Fig. 4 is a vertical transverse section near the axis of the revolution of the seed-clearer. Fig. 5 is an enlarged view of a part of the seed-clearer.

25 Similar letters refer to similar parts throughout the several views.

The frame of the machine A has or is formed to receive suitable bearings, B B', for the shaft S, that carries the friction-roll R. This roll, which may be constructed of any suitable material, is formed concave, substantially as shown, and a doctor-knife, K, curved to conform therewith, is suitably secured to the frame of the machine. The form of this knife in a plan view is preferably that of an arc of a circle having its axis coinciding with the axis of shaft S'. This shaft S' is adapted to be revolved in a bearing formed in the part A' of the frame. It may be driven by means of gears G and G', shaft S², having a pulley, P¹, driven by a belt from pulley P', or their equivalent, the idler-pulleys P² and P³ being used or not, as desired. To the upper end of said shaft S' is fixed a clearer-wheel, C, of any suitable construction, having clearer-points C', either formed thereon, or preferably affixed thereto by means of screws—as, for instance, as illustrated in Fig. 5. When made upon the latter plan, these points may be readily replaced when worn, and the wheel be thus preserved from wear. The clearer-wheel is made of such a size that the points thereon shall run close to but not touch the doctor-knife and

project the usual distance above it—say from one-fourth to one-half of an inch.

A feed-board, F, of the usual description, 55 having a grating, W, (see Fig. 4,) is provided for convenience in feeding seed-cotton to the friction-roll. In its construction this feed-board is similar to those for other roller-gins, with the exception that the grating is made 60 to conform to the curvature of the friction-roller. The operation of this roll and the doctor-knife to gin the cotton is substantially the same as the operation of those parts in other roller-gins, and the operation of the clearer-points to beat off the seeds is substantially the same as the operation of those points when 65 made upon a flexible endless seed-clearer. These operations are well understood by those familiar with this class and this kind of cotton-gins, and therefore do not require a particular description herein. 70

I do not claim herein a circular doctor-knife, except in the combinations described; but in a separate application, Serial No. 117,575, 75 filed January 14, 1884, I have shown, described, and claimed the same. Neither do I claim herein an endless doctor-knife, except of the form and in the combinations described; but in another application, Serial No. 117,573, 80 filed January 14, 1884, I have described and claimed it.

I do not claim, broadly, an endless seed-clearer adapted to have a motion in a fixed circuit, as I am aware such has been used, 85 as will appear by reference to United States Patent No. 185,452, wherein is shown a flexible endless seed-clearer adapted to have a continuous motion in such a circuit; but I am not aware that an endless seed-clearer such as here- 90 in described has ever been used.

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

In a cotton-gin, a rotary circular seed-clearer, a curved doctor-knife, and a concaved friction-roll conforming to the curved doctor-knife, combined and operating substantially as described. 95

FRANCIS H. RICHARDS.

Witnesses:

C. O. PALMER,
H. W. FAULKNER.