

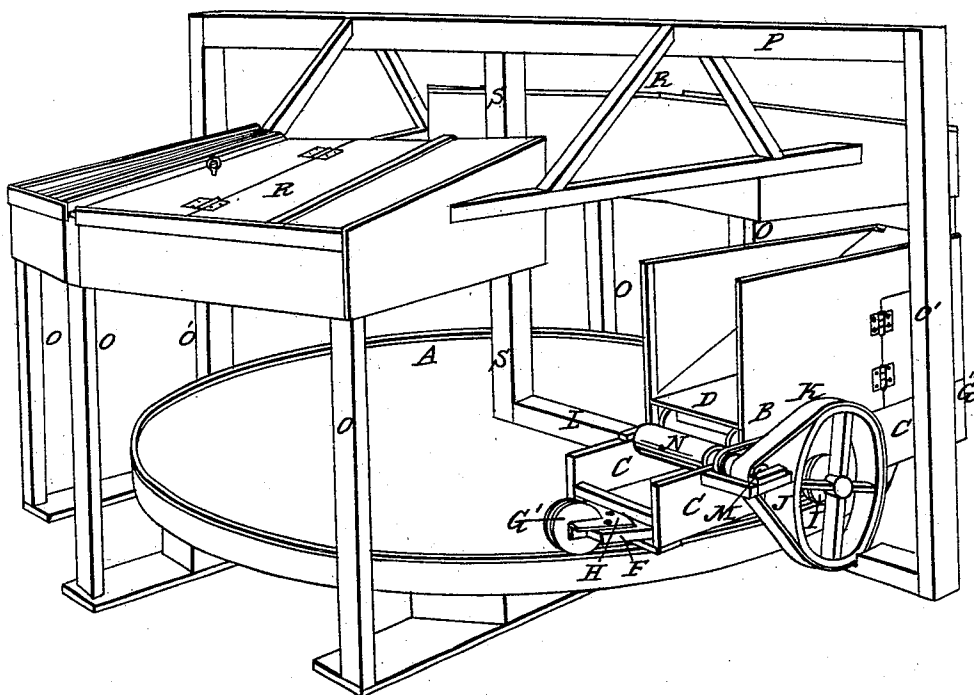
D. PHILIPS.

Cotton Gin.

No. 2,103.

Patented May 22, 1841.

Fig. 1.



UNITED STATES PATENT OFFICE.

DAVID PHILIPS, OF GEORGETOWN, PENNSYLVANIA.

RAILROAD COTTON-GIN.

Specification forming part of Letters Patent No. 2,103, dated May 22, 1841.

To all whom it may concern:

Be it known that I, DAVID PHILIPS, of Georgetown, Mercer county, State of Pennsylvania, have invented a new and useful mode of constructing a building, and also of propelling a cotton-gin, which is described as follows, reference being had to the annexed drawing, making a part of this specification.

The figure represents a perspective view.

Similar letters refer to similar parts.

This improvement consists in the construction of a railroad and car or cars, with the arrangement of the apparatus for separating the cotton from the seed, together with the mode of constructing the building. The railroad A must be made a true circle, of about fifty feet diameter, of one track raised about two feet above the surface of the ground. This may be done by placing the rails on blocks or pillars; or there may be a solid wall made perpendicular on the outside, and the track rail or rails, whether of iron or wood, must be placed with its outside edge even with the outside of the wall. If made of cast-iron, it may be about three inches wide at the base, with a flange projecting up about an inch and a fourth. This must be attached to the outer edge of the rail. Said rail can be fastened to the wall in the common mode of fastening rails for similar operations, and they may be about three-fourths of an inch thick, or they may be constructed entirely of wood or laid with wrought-iron; but I prefer the cast-iron. The cars and machinery B are constructed by making a frame about twenty feet long and about five feet wide and seven feet high, and must be made of light material, which frame is supported by three wheels, G', G'', and I, and a lever, L, as hereinafter described. The base of the body of the frame may be made of two side pieces, C, two feet wide, three inches thick, and eighteen feet long, placed on their edge and connected by a cross-timber at each end of about six by four inches, secured to the side timbers by tenons. The saws and other apparatus for taking the cotton off of the seed may be placed near the back end of the car, and the whole may be arranged in the same manner that is commonly used in other cases, with this exception, that the side timbers, C, will answer in a great measure instead of the usual frame. The body of the car

must be divided by a floor, D, commencing at the top of the grate-frame of the gin, and ascending to the top of the car-frame at the front end, thus forming a room below it for the clean cotton and a hopper for the seed-cotton above it. That used for the clean cotton must have a door, E, at the front end or on the outside, and must be inclosed, either by canvas or plank, on all sides, so that the cotton will not fly away. That part denominated the "hopper" must be boarded on the sides, but open on the top and on the end next the gin to allow the cotton to slide down the inclined floor to the gin. There must be a timber, F, twelve inches wide and six inches thick, and about twenty feet long, (where the track is fifty feet diameter.) It must be firmly attached to the bottom of the car-frame, placed about the middle longitudinally, and to extend beyond the frame about a foot or eighteen inches at each end, so that the wheels G' and G'' can be attached, which I denominate "guide-wheels," set in a direction to run fair on the track. (See G' and G'') Said wheels can be best attached to the timbers by having a cast-iron socket, H, with jaws projecting on each side of the wheels, and holes perforated to receive the journals of the axle-trees, to which the wheels are attached. These sockets may be made adjustable by keys, so that the position of the wheels can be changed at pleasure, either by (preferably) three holes in the socket—one in the center near the back end, with a stationary pin or bolt, and one on each side, with spaces cut in the timber to allow the bolts or keys to be moved in them to vary the direction of the wheel on the track while it will swing on the center pin; or there may be keys inserted between the edges of the timber and socket. The wheels G may be about one foot diameter, with a groove inserted in the middle of the edge an inch and a fourth deep, to correspond with the flange on the track. They must be made of cast-iron, or of the same material as the track. There must be a side wheel, I, of the same material also, and may be of the same diameter of the guide-wheels, and may have about three inches surface on the edge, and made to correspond with the rail. It may also have a flange, with sockets for about four arms (or it may be solid) for a drum-wheel, J, all of which must be at-

tached to the car-wheel. This can be effected by having the hub about eighteen inches long, with the car-wheel at one end and the flange at the other. There must be a round space or hole made through the center of the hub for an axle of about two inches diameter. The axle may be of cast or wrought iron, and must be firmly secured to the bottom of the carriage and attached to the lever by staples or clasps; or it may be inserted into the end of the lever, in the same manner that a gudgeon is attached. It must fit the hub snug and have washers for the hub to bear against—one at each end—and may have a linchpin or screw at the end of the axle to keep it to its place. The latter would be preferable, as the space between the washers can be contracted with more convenience when necessary. The hub may have boxes inserted, of any suitable material, at each end, and the axle-tree may have skeins attached, in the same manner that they are used in common carriage-wheels.

The whole apparatus, above described as made of iron, may be successfully made of wood when it is not practicable to obtain iron. The same principle may be used by varying the dimensions to suit the material. The lever L, above alluded to, may be twelve inches wide and six inches thick, and sufficiently long to admit of being attached to the carriage, as above described, and reach a little beyond the center of the area embraced by the circle, where it may be attached to the upright shaft by a tenon passing through the center of the shaft, through a mortise made in the shaft for that purpose; or it may rest on a pivot, which may be inserted in a block and work in a step inserted into the under side of the lever.

The car may be propelled by horse-power or steam, and as it progresses the car-wheel, to which the drum J is attached, revolves, which gives motion to the gin by means of a belt, K, passing over the wheel M on the saw-cylinder N and around the drum-wheel. The guide-wheels G' G'' must be placed about half an inch higher than the side wheel, I, so that the weight may rest principally on the side wheel, and always on it and one of the guide-wheels. From this arrangement nearly all the weight attached to the car will rest on the side wheel, which will insure sufficient adhesion or friction to turn with the ginning apparatus attached. There may be two tracks and an additional side wheel in place of the lever; but I prefer the lever, as above described.

The building may be constructed by raising

posts O perpendicular, set in the ground or on sills, varying in length to suit the circumstances connected with it. There must be a large beam, P, across the center of the area of the track A, supported by posts O at each end, and raised about fifteen feet above the track to support the inner portion of the roof R and the top of the shaft S, before alluded to. The other portions of the roof are supported by posts placed outside of the track. They must be placed about three feet from the track to allow the car to run clear. The roof may be extended back until the inclination or pitch will strike the ground, and it may be covered with plank by laying them double and breaking the joints. It will then answer to dry cotton on, when it can be thrown down through the roof into the room below by making a number of trap-doors of any convenient size at different points on the roof, thus saving great labor in the handling of the cotton in the process of drying it. There must be a floor above the car sufficiently high to clear it, with trap-doors in the floor immediately over the track to let the cotton down into the hopper. The balance of the floor, which is outside of the track, may rest on the ground, or may be constructed of any material used for such purposes. The guide-wheels will serve to guide the car on the track and sustain the preponderating weight on either side of the center.

The track may be made of a plane surface without the flange, with the face inclined out, and with a suitable bevel of the wheels they may be made to describe the necessary circle without resorting to anything else to effect it; but I prefer the guide-wheels and lever, as above described, with the flange on the track.

The advantages are in the cheapness of construction both of the machinery and the building, and also in the great saving of labor in the handling of the cotton, and also in saving of power by dispensing with the friction arising from machinery constructed of cogs or teeth.

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

The car-body herein described, so constructed as to receive the seed and clean cotton, in combination with the supporting and guide wheels, arranged and operating substantially as herein described.

DAVID PHILIPS.

Witnesses:

W. P. N. FITZGERALD,
JOHN H. TITCOMB.