To all whom it may concern:

Be it known that I, JAMES F. BARRINGER, of Bennettsville, in the county of Marlboro, and State of South Carolina, have invented a new and useful Improvement in Cotton-Choppers, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of one of my improved cotton-choppers, parts being broken away. Fig. 2 is a sectional side elevation of the same, taken through the line x x, Fig. 1. Fig. 3 is a rear elevation of the same.

The objects of this invention are to facilitate the chopping of cotton to a stand and to promote convenience in adjusting, operating, and controlling cotton-choppers.

The invention relates to a cotton-chopper constructed with wheels and an axle, and runners connected by a shaft, pivoted bars, and standards, and chopping-hoes attached to a swinging extension-bar vibrated by a crank-shaft driven from the wheels and axle by a train of gear-wheels, as will be hereinafter fully described, and then claimed.

A are the drive-wheels, which are made with corrugated faces to prevent them from slipping upon the ground. The axe B of the wheels A revolves in bearings in the forward ends of two bars, C, in the rear ends of which are formed bearings to receive the shaft D.

The shaft D also revolves in bearings in the upper ends of two standards, E, the lower ends of which are rigidly attached to two runners, F, so that the wheels A and runners F can have an up and down movement independent of each other, which movement is limited by the stop-rods G, the lower ends of which are attached to the runners F in such positions that the hooks formed upon the upper ends of the said rods will engage with the forward parts of the swinging bars C or with the axe B. The runners F can be provided with shoes H of metal or other suitable material to receive the wear, and which can be readily replaced when worn by new ones. The runners F are connected at their rear and forward ends and held in proper relative positions by cross-bars I attached to the tops of said runners. To the forward cross-bar I, at its left-hand end, is attached, or upon it is formed, a bar, J, which is bent upward and forward to bring its forward end into position to receive the draft.

To the center of the forward cross-bar I is attached a standard, K, to the upper end of which are secured by a bolt or other suitable means the forward ends of the handles L. The handles L at held at the proper distance apart by a cross-bar, M, the ends of which are attached to the middle parts of the said handles L.

To the cross-bar M are attached the upper ends of two uprights, N, the lower ends of which are attached to the rear ends of the runners F.

Upon the drive-wheel shaft B is placed a large gear-wheel, O, upon one end of the hub of which are formed clutch-teeth to engage with the clutch P, sliding upon the shaft B. The clutch P when thrown into and out of gear with the gear-wheel is held in either position by a bar, Q, pivoted on the rear shaft, D, or other suitable support. The teeth of the large gear-wheel O mesh into the teeth of the small gear-wheel R placed upon the shaft D, and rigidly connected with the beveled or crown gear-wheel S, also placed upon the shaft D and secured to it adjustably by a set-screw, T, passing through its hub and resting against the said shaft, so that the said gear-wheel S can be readily adjusted upon the said shaft. The small gear-wheel R is made wide so that it will not be thrown out of gear with the gear-wheel O by the adjustment of the gear-wheel S.

If desired, the gear-wheels R S can be made separate, in which case the gear-wheel R will be rigidly attached to the shaft D, and need not be made wide. The teeth of the beveled or crown gear-wheel S mesh into the teeth of a small corresponding gear-wheel, U, secured detachably by a set-screw or other suitable means to the forward end of the shaft V, which revolves in bearings in a bracket, W, attached to the center of the rear cross-bar I.

To the rear end of the shaft V is attached or upon it is formed a crank, X, the pin of which revolves in a bearing secured by bolts Y to the lower part of a bar, Z, the upper part of which is provided with a slot, Z, to
receive the rear end of the bar \( a \), so that the
said bar \( Z \) can move up and down and will
have its movements controlled as it is vibrated
by the revolution of the crank \( X \). The for-
ward end of the bar \( a \) is attached to the cross-
bar \( M \) of the handles \( L \), and its rear part is at-
tached to the bend of a \( U \)-bar, \( b \), the ends of
which are attached to the rear ends of run-
ners \( F \).

To the lower end of the bar \( Z \) is secured by
the bolts \( Y \), that fasten the bearings for the
crank \( X \), the upper part of the bar \( c \), which
is slotted to receive the said bolts, so that the
said bar \( c \) can be readily adjusted higher or
lower as may be required. The lower end of
the bar \( c \) is forked, and the ends of its prongs
are bent outward, and their lower parts are in-
clined to one side to form seats for the chopping
holes or cutters \( d \), which are secured to the said
prongs by the bolts \( e \). The rear prong of the
forked lower end of the bar \( c \) is slotted to re-
ceive the bolt \( e \), as shown in dotted lines in Fig.
2, so that the rear chopping-hoe can be readily
adjusted nearer to or farther from the forward
chopping-hoe, according as less or more plants
are to be left for a hill. The space between
the hills is regulated by the size of the gear-
wheel \( U \)—as, for instance, the said wheel can be
made of such a size as to make a revolu-
tion while the drive-wheels \( A \) are advancing
twelve inches—or the wheel \( U \) can be replaced
by a larger or smaller gear-wheel, as may be
desired, the gear-wheel \( S \) being adjusted upon
the shaft \( D \) to mesh into the gear-wheel \( U \),
whether the said wheel \( U \) be larger or smaller.
With this machine the runners \( F \) will move
along the smooth top of the ridge upon the
opposite sides of the row of plants, so that the
chopping-hoes \( d \) will enter the ground to a uni-
form depth, and will be unaffected by the up
and down movements of the wheels \( A \) as they
travel along the sides of the said ridge.

Having thus fully described my invention,
I claim as new and desire to secure by Letters

1. In a cotton-chopper, the combination,
with the drive-wheels, of runners pivoted to
the axle of the said wheels and carrying the
hoses and their operating mechanism, substan-
tially as herein shown and described, whereby
provision is made for causing the hoses to
enter the ground at a uniform depth, as set
forth.

2. In a cotton-chopper, the combination,
with the drive-wheels and axle \( A B \) and the
runners \( F \), of the pivoted bars \( C \), the shaft \( D \),
and the standards \( E \), substantially as herein
shown and described, whereby the said wheels
and axle and the runners will be drawn for-
ward together, but can move up and down in-
dependently of each other, as set forth.

3. In a cotton-chopper, the combination,
with the wheels and axle \( A B \), the runners \( F \),
and the swinging extension-bar \( Z c \), carrying
the chopping-hoes, of the gear-wheels \( O R S \)
\( U \) and the crank-shaft \( V X \), substantially as
herein shown and described, whereby the said
swinging hoe will be vibrated by the advance
of the machine, as set forth.

4. In a cotton-chopper, the combination,
with the runners \( F \), of the extension-bar \( Z c \),
carrying the chopping-hoes and having the
slot \( S \), the handles \( L \), the cross-bar \( M \), at-
tached to the handles and the bars \( a b \), sub-
stantially as herein shown and described.

5. In a cotton-chopper, the extension-bar
carrying the chopping-hoes, made substan-
tially as herein shown and described, and con-
sisting of the upper bar, \( Z \), having slot \( Z \), and
the lower bar, \( e \), having slotted upper end \( s \)
and a forked lower end, and provided with a
slot in its rear prong, whereby the chopping-
hoes can be readily adjusted to work deeper
or shallower in the ground, and to leave more
or less plants for a hill, as set forth.

J. F. BARRINGER.

Witnesses:
B. A. ROGERS,
E. C. STUART.