

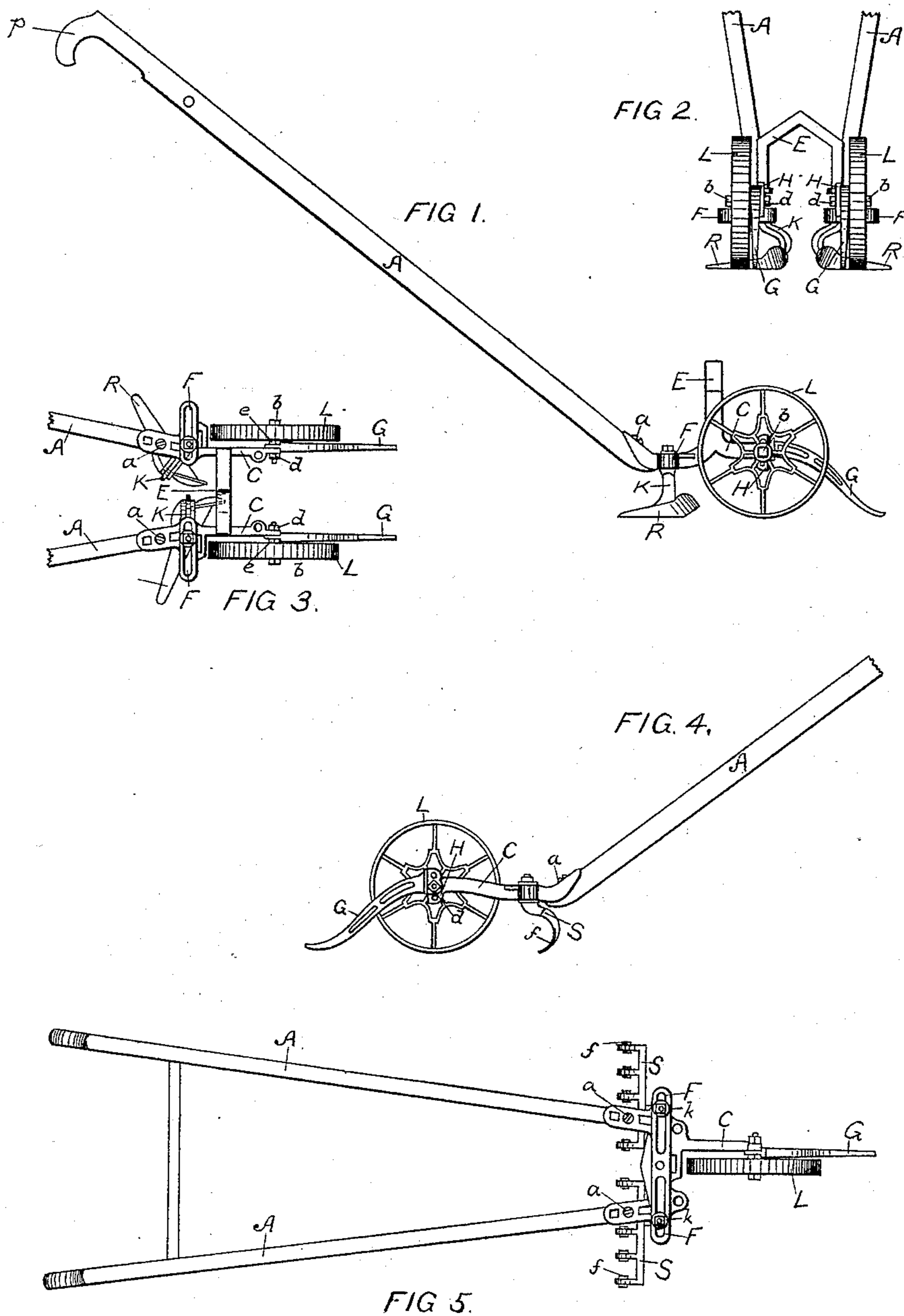
(No Model.)

2 Sheets—Sheet 1.

S. L. ALLEN.
CULTIVATOR.

No. 387,333.

Patented Aug. 7, 1888.



WITNESSES,
Albert E. Leach.
W. H. Thompson.

INVENTOR.
S. L. Allen.
By his Attorney.
W. H. A. Brown.

(No Model.)

2 Sheets—Sheet 2.

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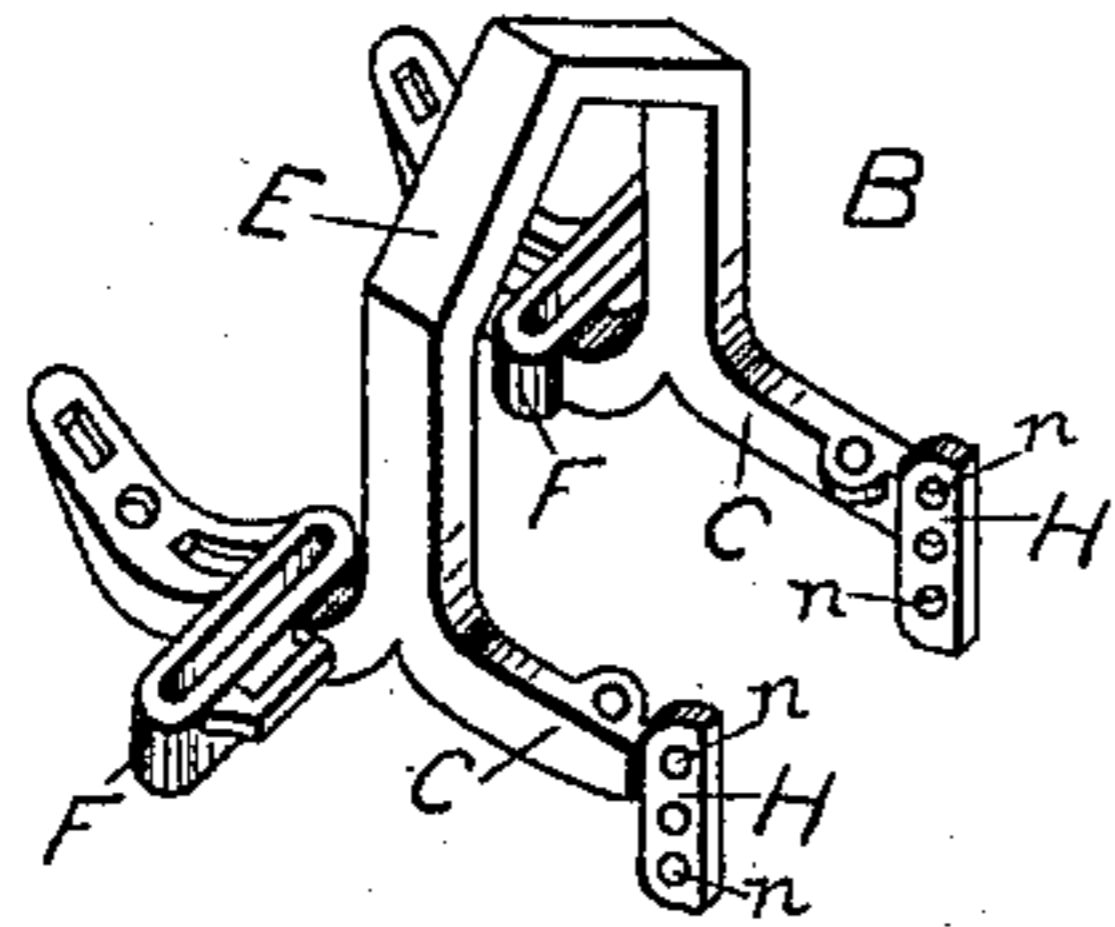


FIG 6

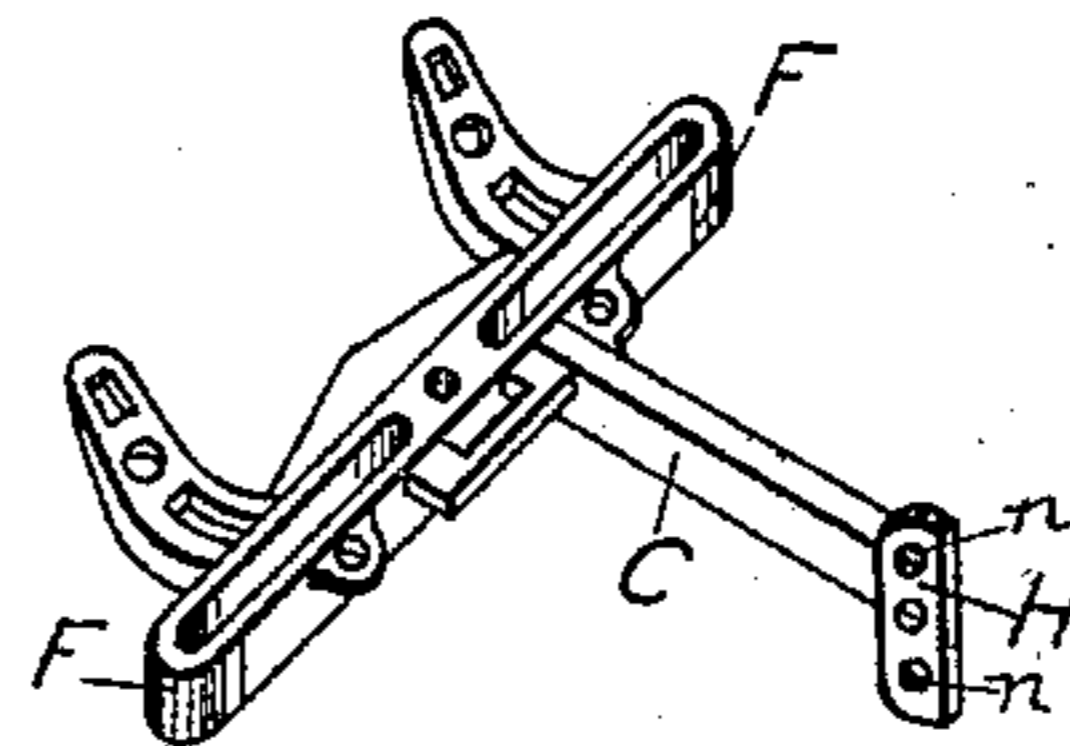


FIG 7

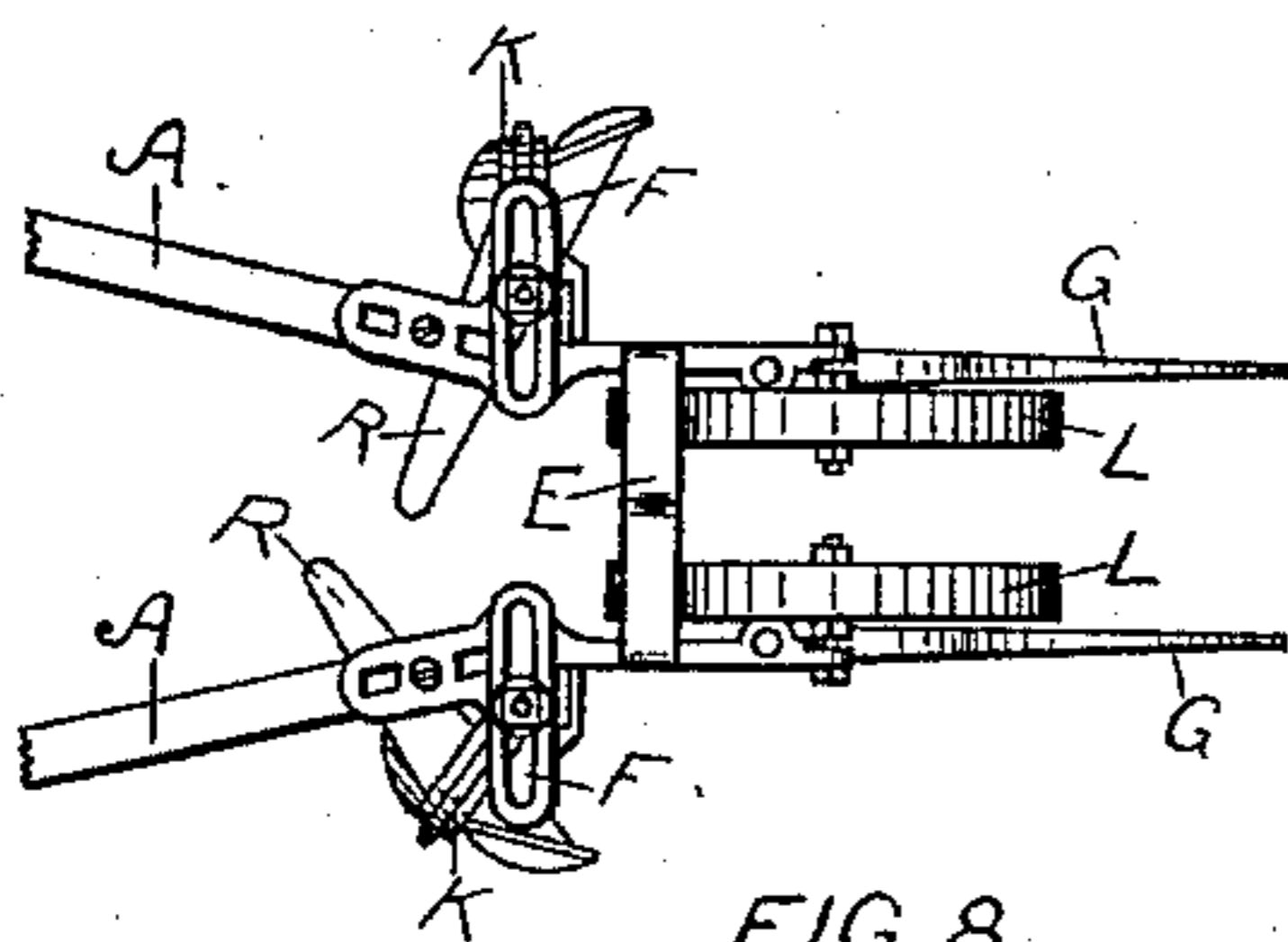


FIG 8

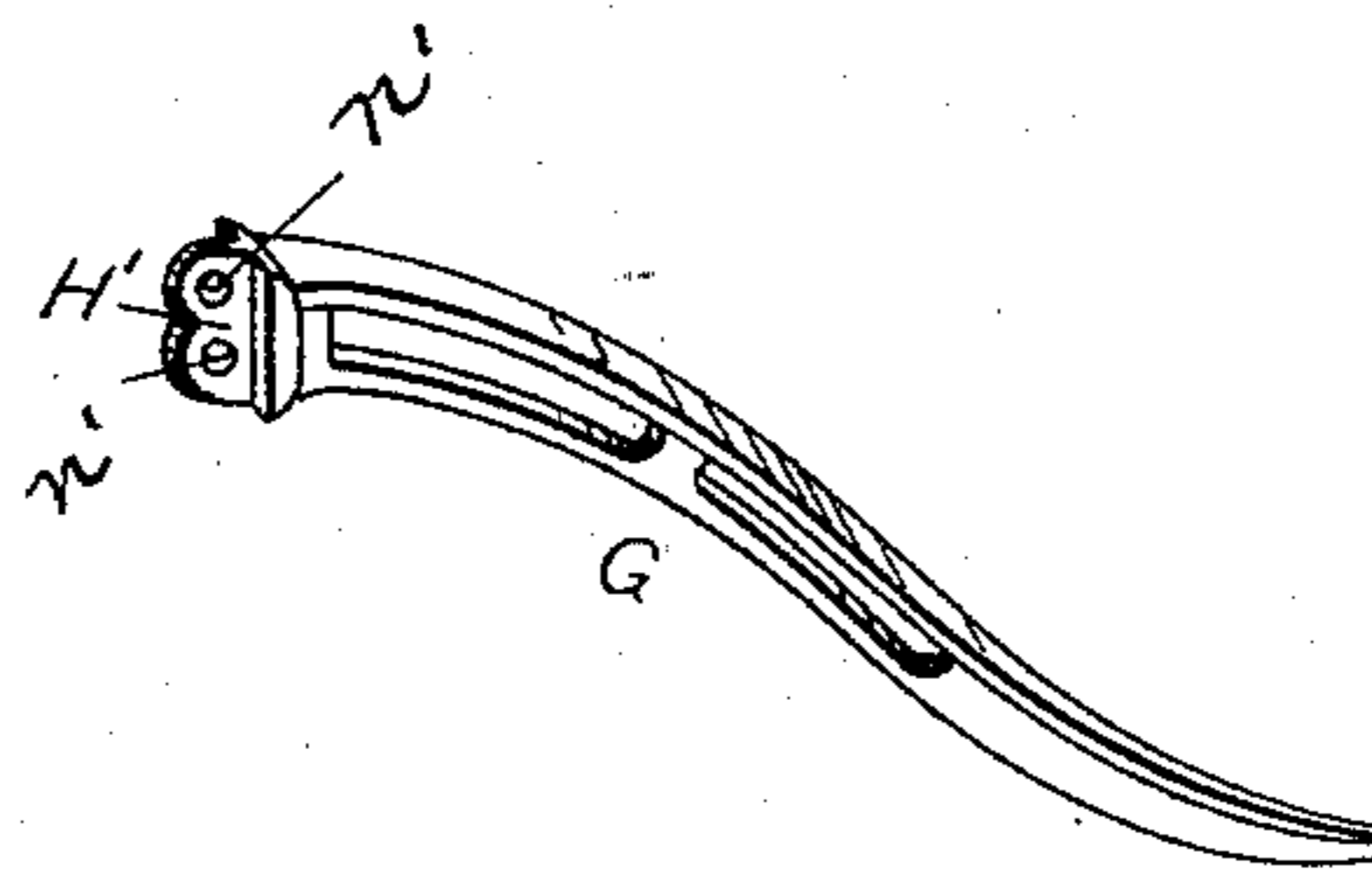


FIG 9.

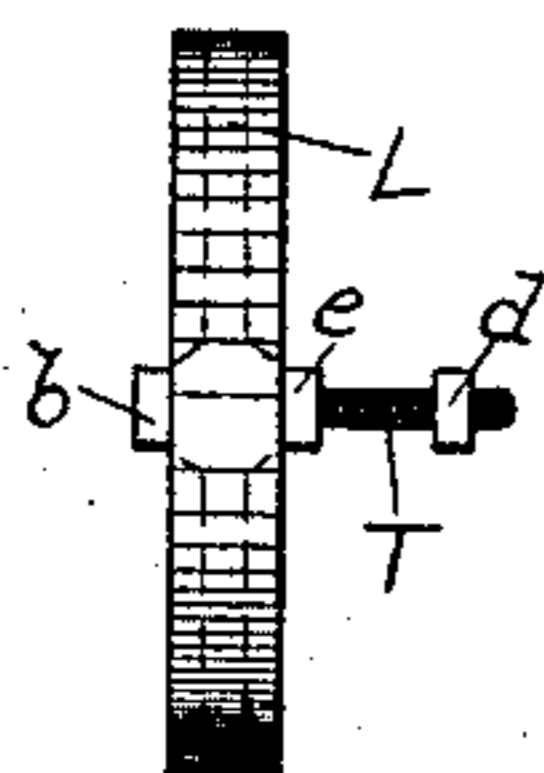


FIG. 10.

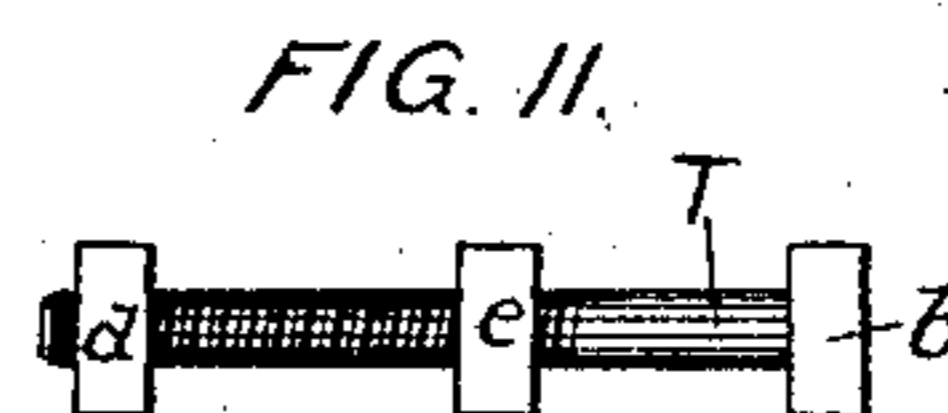


FIG. 11.

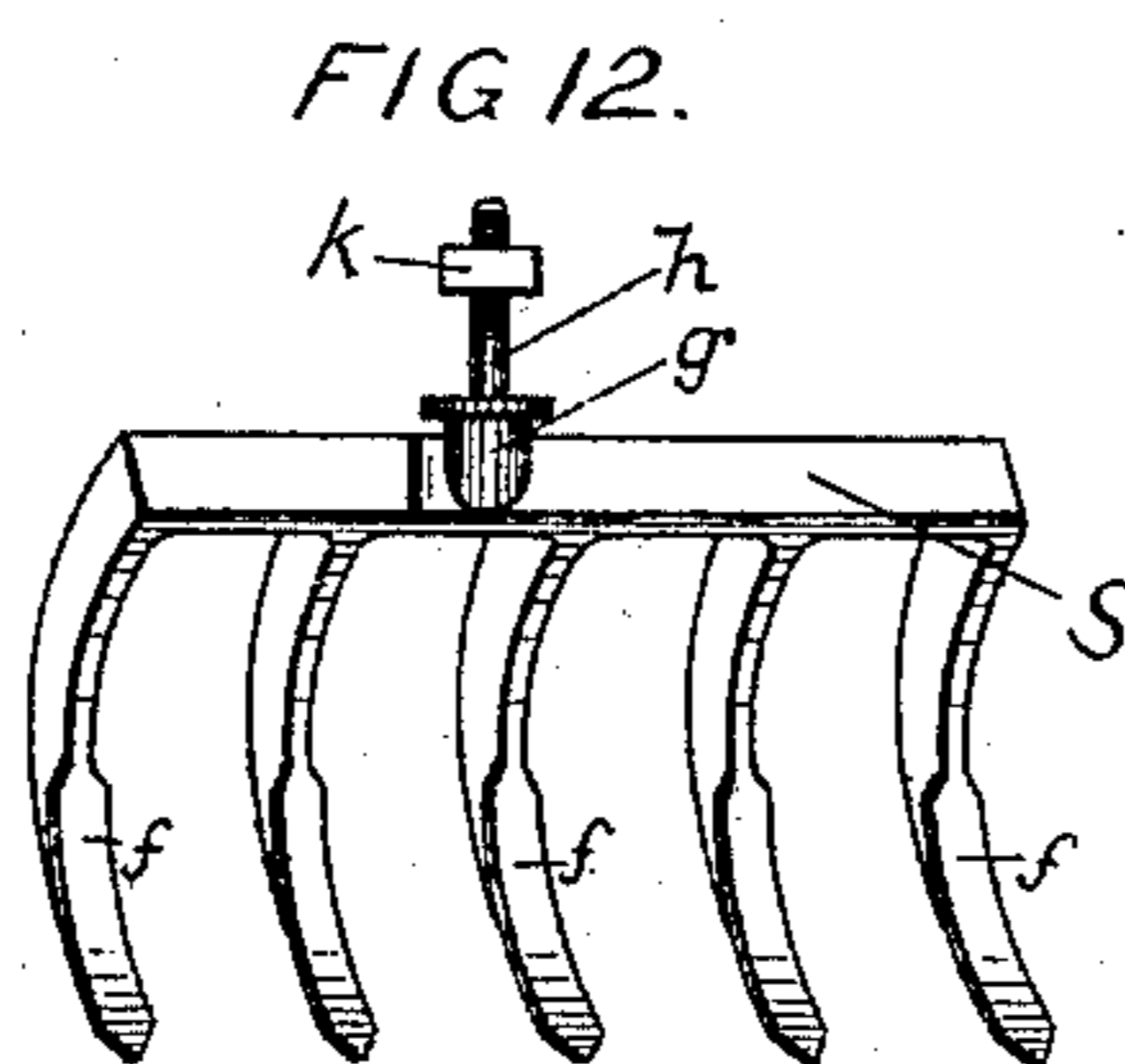


FIG 12.

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UNITED STATES PATENT OFFICE.

SAMUEL L. ALLEN, OF CINNAMINSON, NEW JERSEY.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 387,333, dated August 7, 1888.

Application filed February 6, 1888. Serial No. 263,095. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL L. ALLEN, a citizen of the United States, residing at Cin-
naminson, in the county of Burlington and
5 State of New Jersey, have invented certain
new and useful Improvements in Cultivators,
of which the following is a specification.

My invention relates especially to hand-cul-
tivators or wheel-hoes; and it consists of vari-
10 ous improvements in the construction, where-
by cheapness of manufacture and ready adapta-
bility of the implement to various purposes
are effected.

Figure 1 of the accompanying drawings
15 shows in side elevation one form of my double-
wheel hand-cultivator, of which Fig. 2 is a
front elevation and Fig. 3 a plan view. Figs.
4 and 5 are side elevation and plan views,
respectively, of my single-wheel cultivator.
20 Fig. 6 is a view in perspective of the double-
wheel frame; Fig. 7, a perspective view of the
single-wheel frame. Fig. 8 is a plan view of
my cultivator, but with wheels secured on the
inside instead of, as in Fig. 3, on the outside of
25 the frame-arms. Fig. 9 represents, on a larger
scale, the vine guard. Fig. 10 shows the wheel
and peculiar double-nutted-bolt axle. Fig. 11
shows the double-nutted bolt, and Fig. 12 is an
enlarged perspective view of my improved
30 rake.

Cultivators of this class as commonly made
when adaptable to different tools—such as hoe-
blades, plowshares, and variously-shaped cul-
tivator-tools—have a number of slots or holes
35 for the tool-standards in various places on each
side of the frame, whereby the different tools,
when secured thereto, may have their points
or edges in the proper position for the work
intended for them, this position being of
40 course necessarily different for different tools
and depending on the work to be done. In
my cultivator I employ a single slot only on
each side of the frame, the two slots being
preferably in the same line. Into these single
45 slots are adapted to be inserted, interchange-
ably, the standards of all classes of tools, the
standards being curved or twisted, so as to
bring the working-edges of the various tools
in the proper position when inserted in the
50 single slot.

My improvements are embodied in both sin-

gle and double wheel cultivators, the differ-
ence between the two being that the frame B,
Fig. 6, of the double-wheel implement has two
forwardly-projecting arms, CC, to which the 55
wheels are attached, the arms being connected
by an arch, E, enabling the operator to run the
cultivator either between the rows or with one
wheel on each side of the row, while the single-
wheel hoe-frame (best shown in Fig. 7) has a 60
single forwardly-projecting arm, C, and is
mainly intended to be run between the rows.

A A are the handle-bars, preferably of wood,
secured by nutted screws *a*, or otherwise, to
the metal frame. The rounded upper portion 65
or handle, *p*, of the handle-bar, instead of being
of the shape usual in plows, cultivators, and
most garden implements of the kind, is here
made in the shape of a pistol-handle, thereby
affording a firm grip, as it fits the shape of the 70
hand much better than the common style.

In front of the points of attachment of the
handles are the single slots F, one on each side,
in which the various tool-standards are se-
cured. These slots F in the double-armed 75
frame are connected by the arch E, Figs. 1, 2,
3, and 6, while in the single-armed frame, Figs.
4, 5, and 7, they are directly connected. The
forwardly-projecting arm C is provided at its
outer end with the flattened bearing H, having 80
preferably the series of holes *n n n*. To this
bearing is secured the axle of the wheel L,
consisting of a double-nutted bolt, T, Figs. 10
and 11. This bolt passes through one of the
holes *n*, the wheel revolving on the stationary 85
bolt and being held thereon between the head
b and nut *e*, while the bolt is securely held on
the bearing H between the nuts *e* and *d*. By
reason of the series of holes in the bearing H
the depth at which the different attachments 90
work is readily adjustable, being deeper or
shallower according to the hole in which the
axle is secured.

G is an adjustable vine-guard, preferably
made as shown in Fig. 9, having a seat, H', 95
provided with one or more holes, *n'*, and adapted
to fit against the bearing H and be secured
thereto by the double-nutted-bolt axle T. The
wheel L, as well as the vine-guard G, can be
secured on either side of the arm C. This is 100
particularly desirable in the double-wheel cul-
tivator, as the width of track can be widely

varied. In the single-wheel implement the wheel, instead of being set in the middle, as shown in Fig. 5, may, if desired, be set on the other side of the arm from that shown, and in this way both sides of a row of plants may be worked at one passage. Fig. 3 is a plan view of the implement with both the wheels and the vine-guards on the outside of the arms, while Fig. 8 shows both wheels and vine-guards on the inside of the arms.

It is obvious that various combinations may be employed for varying the width of track and the position of the vine-guard. For instance, one wheel may be on the inside and the other on the outside of its respective arm; or the vine-guards may be on the opposite side of the arm from the wheel, which is perhaps the most desirable position; or the vine-guards may, if desired, be left off altogether.

The implement is adaptable to many forms of tools—as, for instance, hoes, plowshares, rakes, and cultivator-tools of various kinds. All these tools are adjustable in the slot F, being secured therein by bolts and nuts attached to the upper ends of the variously-shaped standards. The positions of the teeth may be varied laterally by securing them in different places in the slot F, and axially by turning them at different angles on the standard-fastening bolts.

In Figs. 1, 2, and 3 the cultivator is represented as having hoe-teeth R, with curved standards K, attached thereto, while the implement shown in Figs. 4 and 5 has secured thereto my improved rake S. This rake (shown in perspective in Fig. 12) has its standard or stem *g*, located, not centrally on the tool, but nearer one end than the other, thus accomplishing several desired results. For instance, when two rakes are used, one in each slot F, as shown in Fig. 5, the teeth project farther on each side by reason of the standards being nearer the inside of the rake, thus covering over a wider space of ground with the employment of the short slot F; and if only one rake be used it can be placed centrally, or nearly so, on the frame by bolting its standard to one of the slots F.

The teeth of the rake have broad flat edges *f*, which leave the ground in a much looser condition than when the teeth are of the same shape as those of the ordinary hand-rake.

It will be noticed by reference to Figs. 3 and 8 that the hoe-blades in each pair therein illustrated have their curved twisted standards K arranged so that, although in the same slot or in slots in the same transverse line, they hold the blades one in advance of the

other and not symmetrically opposite to each other. The blades may thus be used either in the position shown in Fig. 3 or that shown in Fig. 8. In either case each tooth covers the same amount of ground on each side of the cultivator; but the shapes of the standards are such that one tooth-blade is set in advance of the other. This is to allow small sticks and stones to pass easily by, that might otherwise, if the teeth were set evenly, catch or lodge in front of them and, being then carried along, tear up or injure the plants.

I claim—

1. In a cultivator, a frame having forwardly-projecting arms and a single tool-holding slot on each side of the frame in the same transverse line, each of said arms being provided with a vertical series of holes, whereby the depth of frame may be varied, substantially as described.

2. In a cultivator, a rigid one-piece frame having two forwardly-projecting arms connected by an arch, and a single tool-holding slot at the rear of each arm, each of said arms being provided with a vertical series of holes, whereby the depth of frame may be varied, in combination with wheels having double-nutted-bolt axles, whereby the said wheels may be secured on either side of said arms, substantially as and for the purposes described.

3. In a cultivator, a detachable vine-guard, G, having a shouldered seat, H', provided with a series of holes, *n'*, whereby the said vine-guard is adjustable at different heights on either side of the perforated arm of the cultivator-frame, substantially as described.

4. The combination, in a cultivator, of a frame provided with forwardly-projecting perforated arms, adjustable vine-guards provided with perforated shouldered seats, and wheels having double-nutted-bolt axles, whereby the relative positions of said wheels, arms, and guards are interchangeable, thereby varying the width of track, substantially as described.

5. In a cultivator, a pair of adjustable curved tooth-rakes, each of which is provided with a single standard out of center, whereby the said rakes may be secured to a double-slotted cultivator-frame, substantially as and for the purposes herein set forth.

In testimony whereof I have hereunto set my hand.

SAML. L. ALLEN.

Witnesses:

EDWARD W. BURT,
OSWALD SMITH.