

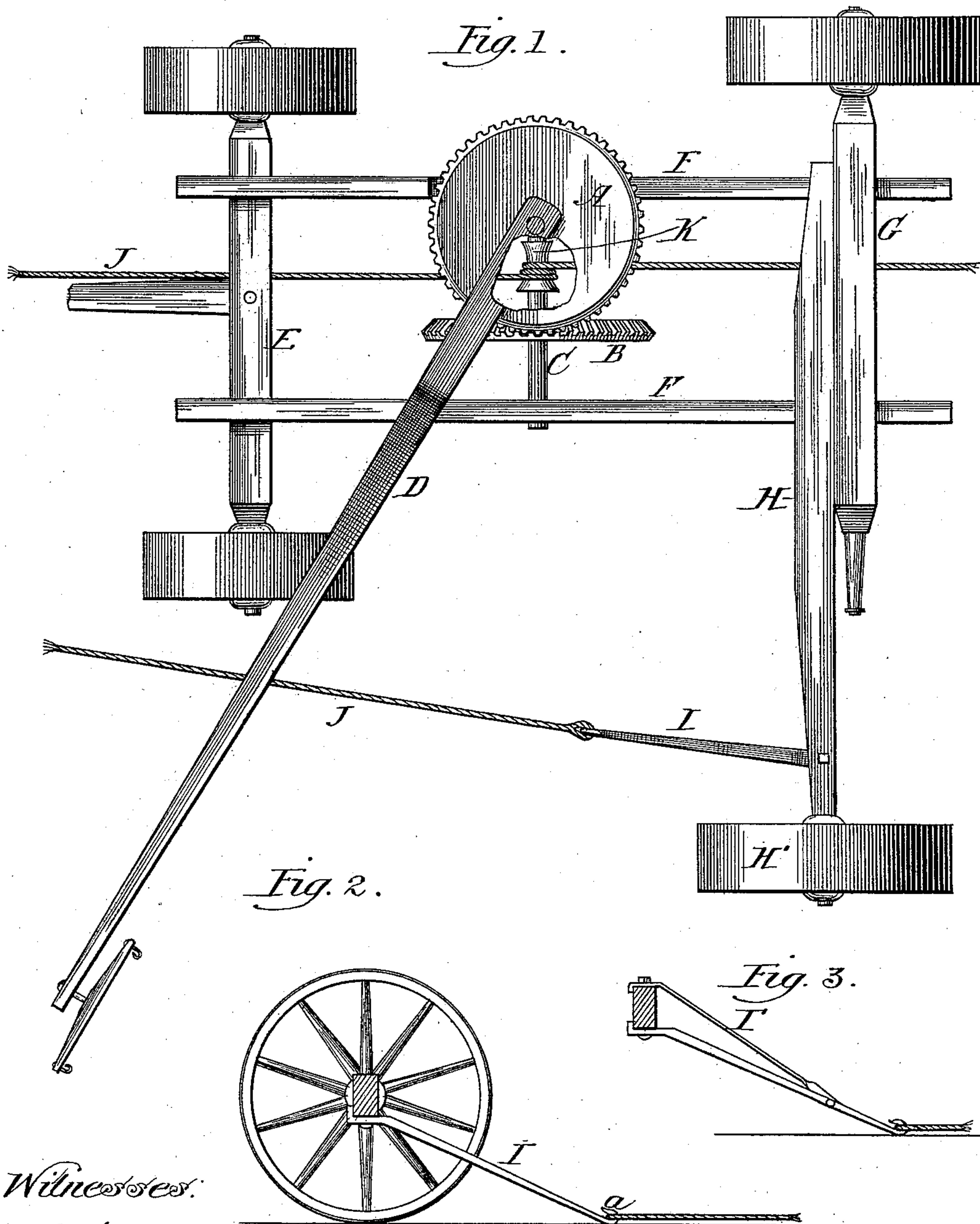
(No Model.)

U. BLICKENSDEFFER.

DITCHING MACHINE.

No. 384,419.

Patented June 12, 1888.



Witnesses:

Albert H. Adams.
Harry T. Jones.

Inventor:

Ulric Blickensderfer

UNITED STATES PATENT OFFICE.

ULRIC BLICKENS DERFER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE BLICK
ENS DERFER MACHINE COMPANY, OF SAME PLACE.

DITCHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 384,419, dated June 12, 1888.

Application filed September 21, 1887. Serial No. 250,330. (No model.)

To all whom it may concern:

Be it known that I, ULRIC BLICKENS-
DERFER, residing at Chicago, in the county of
Cook and State of Illinois, and a citizen of the
5 United States, have invented a new and useful
Improvement in Ditching-Machines, of which
the following is a specification, reference being
had to the accompanying drawings, in which—

Figure 1 is a top or plan view. Fig. 2 is a
10 section showing the side draft-bar. Fig. 3 is
a detail in section, showing the side draft-bar
and a brace therefor.

This invention relates to that class of ditch-
ing-machines in which the excavating-wheel,
15 formed of a series of buckets, is operated by
means of suitable gearing driven from a sweep
by a team traveling around the machine. The
excavating-wheel in this class of machines is
located necessarily to one side of the vertical
20 driving-shaft of the gearing, and consequently
is at one side of the power which drives the
gearing, and from such an arrangement the
application of the power produces a side draft,
or a tendency to twist the excavating-wheel
25 and to turn around sidewise in the same direc-
tion that the power or sweep is moving, and
this side draft causes the rear end of the exca-
vating-wheel to bind against the side of the
ditch being excavated. A long axle is em-
30 ployed in machines of this class in order that
the carrying-wheel may run clear of the pile
of earth thrown out by the excavating-wheel,
and this location of the carrying-wheel so far
to one side of the center of the excavating-
35 wheel still further increases the side draft. A
tow-line is employed for moving this class of
machines forward, and this tow-line runs over
a spool-shaped drum, thence back to a wind-
ing-drum, and its forward end is securely fast-
40 ened to an anchor. The spool-shaped drum
is located on the carriage of the machine, at
one side of the excavating-wheel, and in use
the effect of the tow-line is to increase still
more the side draft. The extension-axle and
45 the spool-drum are located on opposite sides
of the excavating-wheel, and were it practi-
cal to locate these devices opposite to that
which they must be located in in order to
move the machine forward and clear the ex-
50 cavated earth, it is obvious that the axle and
spool-drum would tend to counteract to a con-

siderable degree the side draft caused by the
sweep; but as the parts must be located as
stated and as shown in the drawings it is evi-
dent that they all tend to twist or turn the 55
machine around sidewise, and all operate in
the same direction, the result being that the
aggregate tendency and the side draft pro-
duced will tend to prevent a successful and
practical working of the machine. 60

The object of my invention is to overcome
the side draft produced from the causes stated,
and its nature consists in providing on the
extension or long axle a depending draft-bar,
to which one end of the tow-line is secured 65
after being passed through a pulley at the
anchor end of the line, by which arrangement
the line will counteract the tendency of the
several forces named to swing the machine
around. 70

In the drawings, A represents the horizontal
beveled driving-gear.

B is the vertical beveled driving-gear.

C is the shaft on which the excavating-wheel
is secured. 75

D is the sweep by which the driving-gear
A is driven.

E is the front axle having a spindle at each
end for the carrying-wheels; G, the rear axle
having a spindle at each end for the carrying- 80
wheels and connected to the axle E by the
bars F.

H is the extension or long axle with a
spindle at its outer end for the carrying-wheel
H', which runs outside of the deposit of earth. 85

I is a draft-bar, secured by bolts or other-
wise to the extension or long axle H, near its
outer end, and having, as shown, a downward
slant, by which its hook *a* is brought close to
the ground, so that the tow-line or rope, when 90
attached to the hook, will lie close to the
ground and not interfere with the travel of the
team for the sweep D. As shown in Fig. 2,
the draw-bar I is not braced; but, if desired,
a brace-bar, I', as shown in Fig. 3, may be 95
provided, attached to the axle at one end and
to the draw-bar at the other.

J is a tow-line the end of which is secured
on the hook *a* of the draw-bar I. This tow-
line runs forward around a pulley at its 100
anchor, (not shown,) and thence back over the
spool-drum K to the winding-drum at the rear

end of the machine, (not shown.) The draw-
bar I being located near the outer end of the
extension of the long axle H, and the tow line
or rope pulling thereon, the power applied will
5 have a tendency to pull or draw the long or
extension axle forward, and against the tend-
ency of the sweep, driving gear, and tow-line
to draw the axle backward, the result being
that the tendency to draw backward is over-
10 come by the power of the tow line, through
the draft-bar to the axle, to draw the axle
forward.

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

15 1. The combination, with a long or exten-

sion axle of a ditching machine, of a draw-
bar, I, for overcoming the side turning or
twisting of the machine in use, substantially
as specified.

2. The combination, with the long or ex- 20
tension axle of an excavating-wheel ditching-
machine, of the draw-bar I and tow-line J, for
preventing side turning or swinging of the rear
end of the wheel in use, substantially as set
forth.

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Witnesses:

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