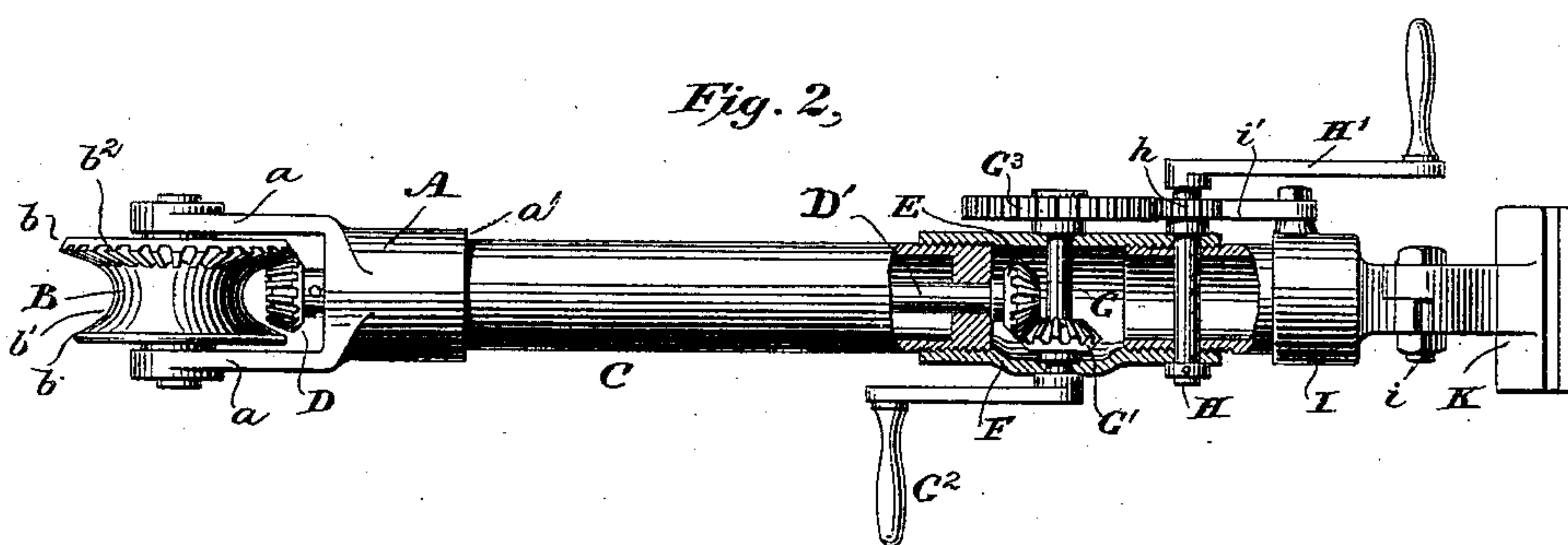
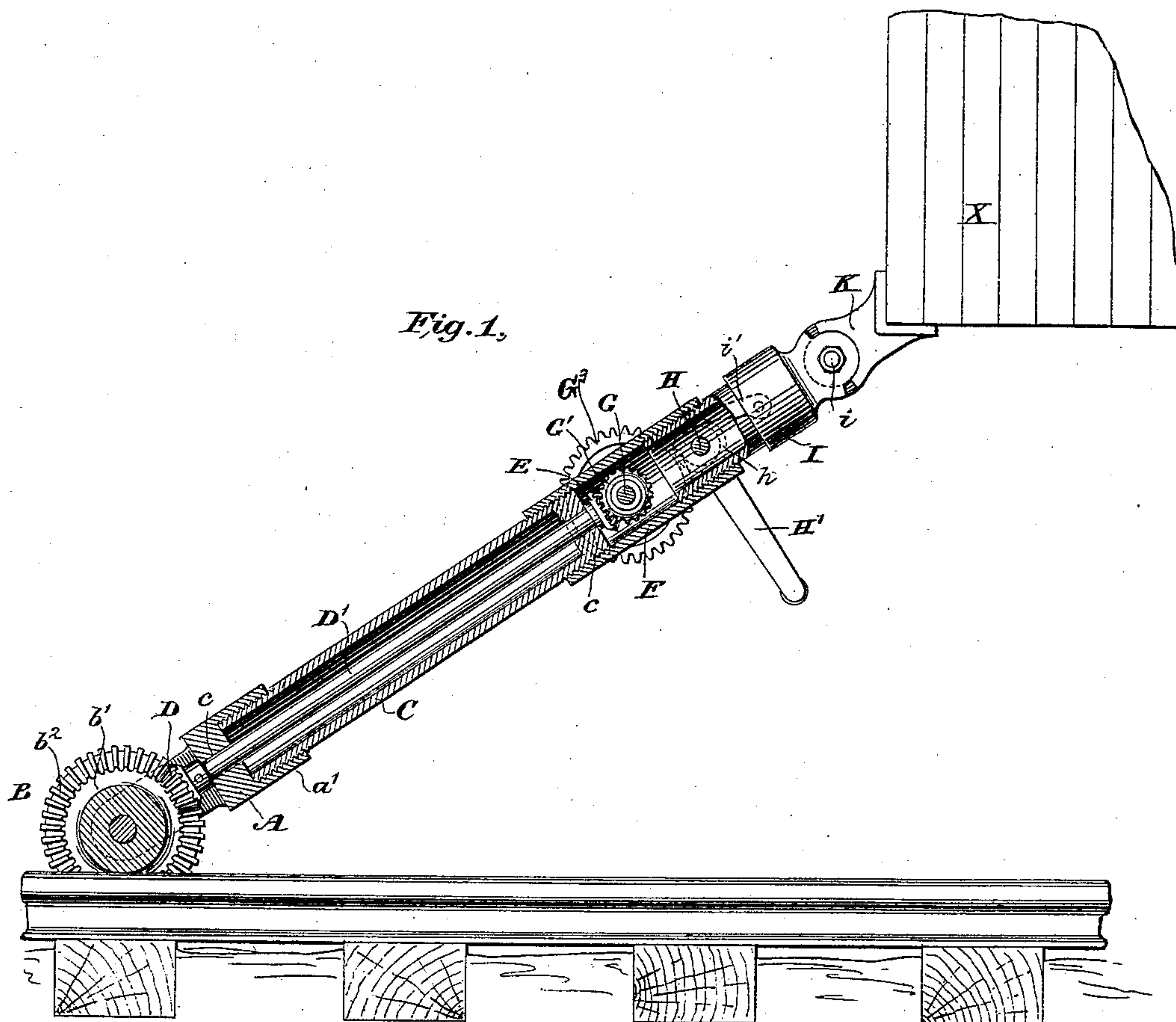


(No Model.)

C. M. KIMBALL.
CAR PUSHER.

No. 444,443.

Patented Jan. 13, 1891.



Witnesses
Geo. W. Dreck.
Edward Thorpe.

Inventor
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UNITED STATES PATENT OFFICE.

CHARLES M. KIMBALL, OF AUBURNDALE, OHIO, ASSIGNOR OF ONE-HALF TO
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CAR-PUSHER.

SPECIFICATION forming part of Letters Patent No. 444,443, dated January 13, 1891.

Application filed May 6, 1890. Serial No. 350,826. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. KIMBALL, a citizen of the United States, residing at Auburn-
dale, in the county of Lucas and State of
5 Ohio, have invented certain new and useful
Improvements in Car-Pushers, of which the
following is a specification.

My invention relates to that class of car-
pushers in which a pushing-wheel gripping
10 upon the rail is carried by a support or beam,
the upper end of which has an angular socket
for embracing the edge of the car-platform,
the pushing-wheel being driven by power ap-
plied through a crank and suitable transmit-
15 ting mechanism.

My invention comprehends an arrangement
in which the power for driving the pushing-
wheel is applied at the periphery of the wheel,
so that a greater leverage is obtained than
20 where the power is applied nearer the axle of
the wheel, as is usually the custom; also an
arrangement of double cranks, one of which
operates through a power-increasing train for
the starting of the car and the other applies
25 the power of the crank directly for pushing
the car with an increased speed when once it
is in motion. I also hinge the angular socket
for embracing the edge of the car-platform
upon the frame or stem of the car-pusher in
30 such manner as to permit of a limited piv-
oting of one upon the other, as I find that bet-
ter results are obtained by such a construc-
tion than where the entire beam is rigid.

In the accompanying drawings, Figure 1 is
35 an elevation showing a section of car-track,
the end of a car, and the pusher in position,
the latter being shown partly in longitudinal
section. Fig. 2 is a top view of the pusher,
partly in section.

40 The frame of the pusher is composed of a
casting A, having bearings *a*, in which the
pushing-wheel B is mounted, and a socket *a'*,
in which is screwed the tubular part C of the
stem. The wheel B is formed with flanges *b*,
45 that straddle the rail, the parts *b'* of the flanges
gripping the rail frictionally. One of the
flanges has formed on its inner face next its
edge bevel-cogs *b²*, with which a bevel-pinion
D gears. This pinion is fast on a shaft D',
50 mounted in bearings *c c* in the upper and
lower ends of the tubular portion C of the

stem. A bevel-pinion E on the upper end of
the shaft is inclosed within a casing F, form-
ing part of the stem. A transverse shaft G,
having its bearings in the walls of the cast- 55
ing, carries a bevel-pinion G', meshing with
the pinion E, and is also equipped with a
crank G². By the rotation of this crank the
pinion D is driven and the pushing-wheel pro-
pelled. I also provide a second transverse 60
shaft H, having a crank H', and also a small
gear-wheel *h*, meshing with a large gear G³
on the end of the shaft G. This or any other
form of power-increasing train may be em-
ployed. The upper end of the stem or frame 65
of the pusher is provided with a casting I,
pivoted at *i* to the casting K, forming the an-
gular socket that embraces the edge of the
car body or platform X. The hinge-connec-
tion, as clearly shown, permits but a limited 70
movement. When the pusher is placed in
position, as illustrated in the drawings, the
greatest power will be required in overcom-
ing the inertia of the car at rest. I therefore
in starting the car operate the crank H', by 75
which the wheel B is driven slowly but with
great power. As soon as the car is in motion
an increased speed is desirable and less power
is required, and I then operate the crank G².
Of course where there are two workmen both 80
cranks may be used at the same time.

By using the pivotal connection at *i* the
pushing-wheel starts more readily without
slipping, and when once in motion its fric- 85
tional contact with the rail is sufficient to pro-
pel the heaviest cars. The casing F might of
course be sufficiently large to accommodate
all the gearing within it.

In order to prevent the car from running
backward on a downgrade in the event of the 90
workman releasing the crank, I provide a
check or detent device, which may consist of
a pawl *i'* pivoted on the side of the casing I
and engaging the teeth on the pinion *h*, as
clearly shown. 95

I claim as my invention—

1. In a car-pusher, the combination, sub-
stantially as hereinbefore set forth, of the
frame or casing, the pushing-wheel journaled
in the lower end of the casing, a driving-shaft 100
extending through the casing and gearing
with the pushing-wheel, a transverse shaft at

the upper end of the casing, a pinion thereon gearing with the upper end of the driving-shaft, a crank for operating said transverse shaft, a second transverse shaft in the upper
5 end of the frame, a crank for operating this shaft, and power-increasing gearing between said crank-shaft and the main driving-shaft.

2. The combination, substantially as here-
inbefore set forth, of the pushing-wheel, the
10 frame or casing, the driving-shaft gearing with the pushing-wheel, a transverse shaft at the upper end of the casing, a pinion thereon gearing with the driving-shaft, the crank for
operating the transverse shaft, a large gear-
15 wheel G^3 on said transverse shaft, a transverse shaft II, a small wheel h thereon gearing with the wheel G^3 , a second operating-crank, and a pawl i' , adapted to engage with the wheel h to prevent its rotation.

3. The combination, substantially as here- 20
inbefore set forth, of the pushing-wheel, the tubular frame or casing, the driving-shaft gearing with the pushing-wheel, a crank, gear-
ing connecting the crank with the driving-
25 shaft, the castings secured to the upper and lower ends of the tubular casing, and the casting K, having an angular socket adapted to engage the under side and vertical wall of a
car-body and hinged at i to the casting at the
upper end of the frame or casing. 30

In testimony whereof I have hereunto subscribed my name.

CHARLES M. KIMBALL.

Witnesses:

WARREN SHUFELT,
CHAS. C. COOPER.