S. J. ASHLEY.

Gun Carriage.

No. 40,893. Patented Dec. 15, 1863.

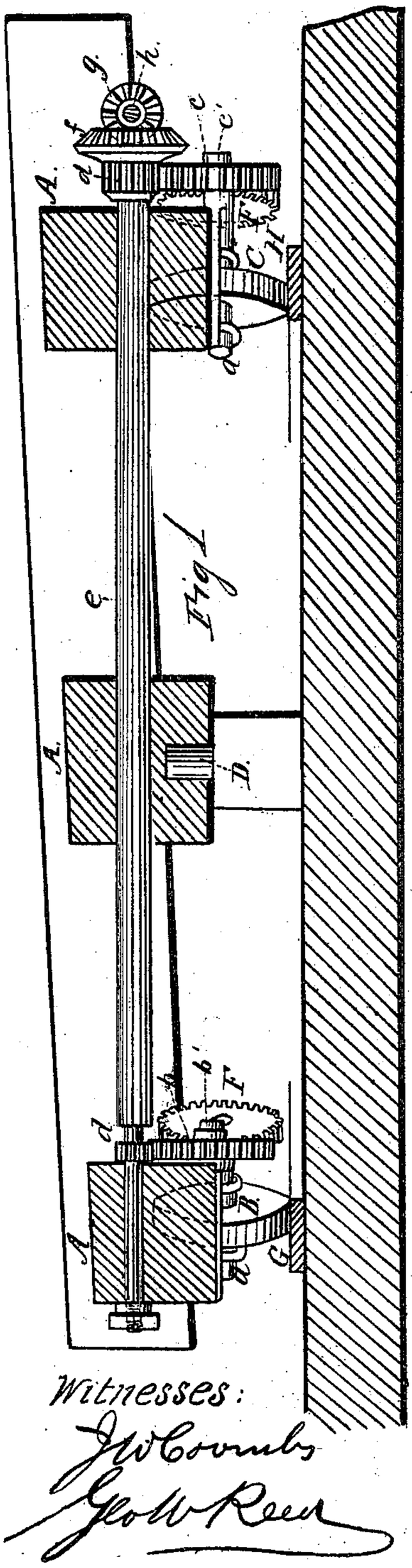

Fig 1

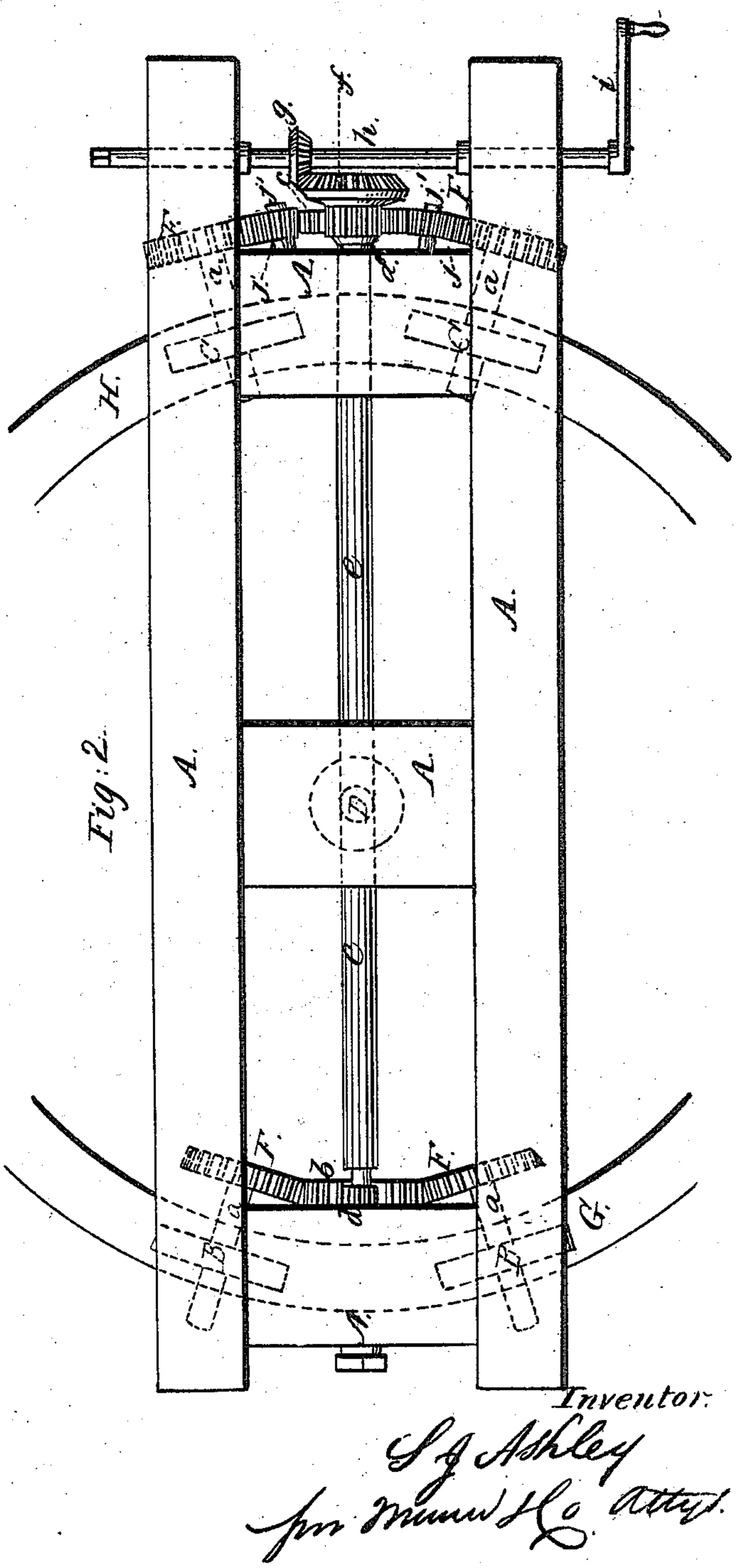

Fig: 2.

Witnesses:

J. W. Coombs

Geo. W. Reed

Inventor:

S. J. Ashley

per Munn & Co. Attys.

UNITED STATES PATENT OFFICE.

S. J. ASHLEY, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN OPERATING GUN-CARRIAGES.

Specification forming part of Letters Patent No. **40,893**, dated December 15, 1863.

To all whom it may concern:

Be it known that I, S. J. ASHLEY, of the city of San Francisco, in the county of San Francisco and State of California, have invented a new and useful Improvement in the Chassis of Gun-Carriages; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central longitudinal vertical section of a center-pintle chassis with my improvement. Fig. 2 is a plan of the same.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to chassis working on center pintles, and to the application to the traverse-wheels of such chassis of a system of toothed gearing operated by a hand-crank or its equivalent for the purpose of producing the traverse movement. In all previous applications of gearing in connection with the traverse-wheels the gearing has been applied only in connection with the wheels in the rear, or with those in front of the chassis—generally with the former—and in case of the settling of the platform, and from other causes, the wheels to which the gearing has been applied have been liable to a failure to bear upon the traverse-circles or segment-rails, in which case the gearing would be useless, and the use of handspikes would have to be resorted to to produce the traverse movement.

This invention consists in applying a system of gearing to both the front and rear sets of traverse-wheels in such a manner that both sets are caused always to operate together, so that whether both sets or only one set has a bearing on the traverse-circles or segment-rails, the gearing will not fail to produce the traverse movement.

To enable others skilled in the art to apply my invention, I will proceed to describe it with reference to the drawings.

A is the frame-work of the chassis, made of wood or iron, substantially like those of the center-pintle chassis in common use for coast defense.

D is the center pintle on which the chassis turns.

B B are the forward traverse-wheels, and C C the rear traverse-wheels, applied and arranged substantially in the usual manner.

G and H are the traverse-circles or segment-tracks upon which the traverse-wheels run. The axles *a a* of the several traverse-wheels are prolonged in a rearward direction beyond their usual length, and furnished with gears F F, which are firmly secured upon them. The gears F F of the wheels B B are geared together by an intermediate gear, *b*, which turns freely on a stud, *b'*, secured in the front transom of the chassis, and the gears F F of the wheels C C are geared together by a similar gear, *c*, which turns freely on a stud, *c'*, secured in the rear transom, and two pinions, *j j*, arranged between the latter gears, F F, and the gear *c* upon studs *j' j'*, secured in the latter transom. These intermediate gears, *b c*, cause the two wheels B B or C C of either pair or set to turn together in the same direction, and the said gears are geared with two pinions, *d d*, on a shaft, *e*, which is arranged lengthwise and centrally within the chassis in suitable bearings provided therein, and this shaft is geared by a pair of bevel-gears, *f g*, with a shaft, *h*, arranged transversely to the chassis, in suitable bearings in the rear portion thereof. This shaft *h* is furnished with a hand-crank, *i*, or its equivalent, by which to turn it, and by turning it the gearing is caused to produce the rotary motion of all the traverse-wheels, making the wheels B B rotate in one and those C C in the opposite direction, as required in the traverse movement of the carriage, so that if the wheels at either end bear upon their respective circle or track, G or H, the chassis will be caused to make the traverse movement, the direction of such movement depending on the direction in which the shaft *h* is turned.

Besides the liability of the platform to settle, and thereby cause the chassis to bear only upon those wheels B B or C C at one end, leaving it supported upon the pintle-bearing and the other set of wheels, there is always a tendency, when the gun is "in battery" and its whole weight is upon the front wheels, to relieve the back wheels of their weight to such an extent that if motion were given by the gearing to those wheels alone they might rotate without producing the traverse movement, and the application of the gearing to those wheels alone might fail to operate from this cause. This last-mentioned difficulty might be overcome by applying the gearing to the front wheels alone; but if the crank *i* or its equivalent

were applied in front of the carriage the man or men operating it would have to stand directly, or almost directly, under the muzzle of the gun, which would be dangerous; and hence it is desirable to have the power applied at the rear end of the chassis.

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

The gearing together of the front and back traverse-wheels by means of a system of gearing in such manner that the power is applied to produce the motion of both sets of wheels simultaneously by power applied through a crank-shaft or its equivalent at or near the rear end of the chassis, or in such position as may be most convenient, substantially as and for the purpose herein specified.

S. J. ASHLEY.

Witnesses:
ANTHONY GRAHAM,
J. C. HUTCHINSON.