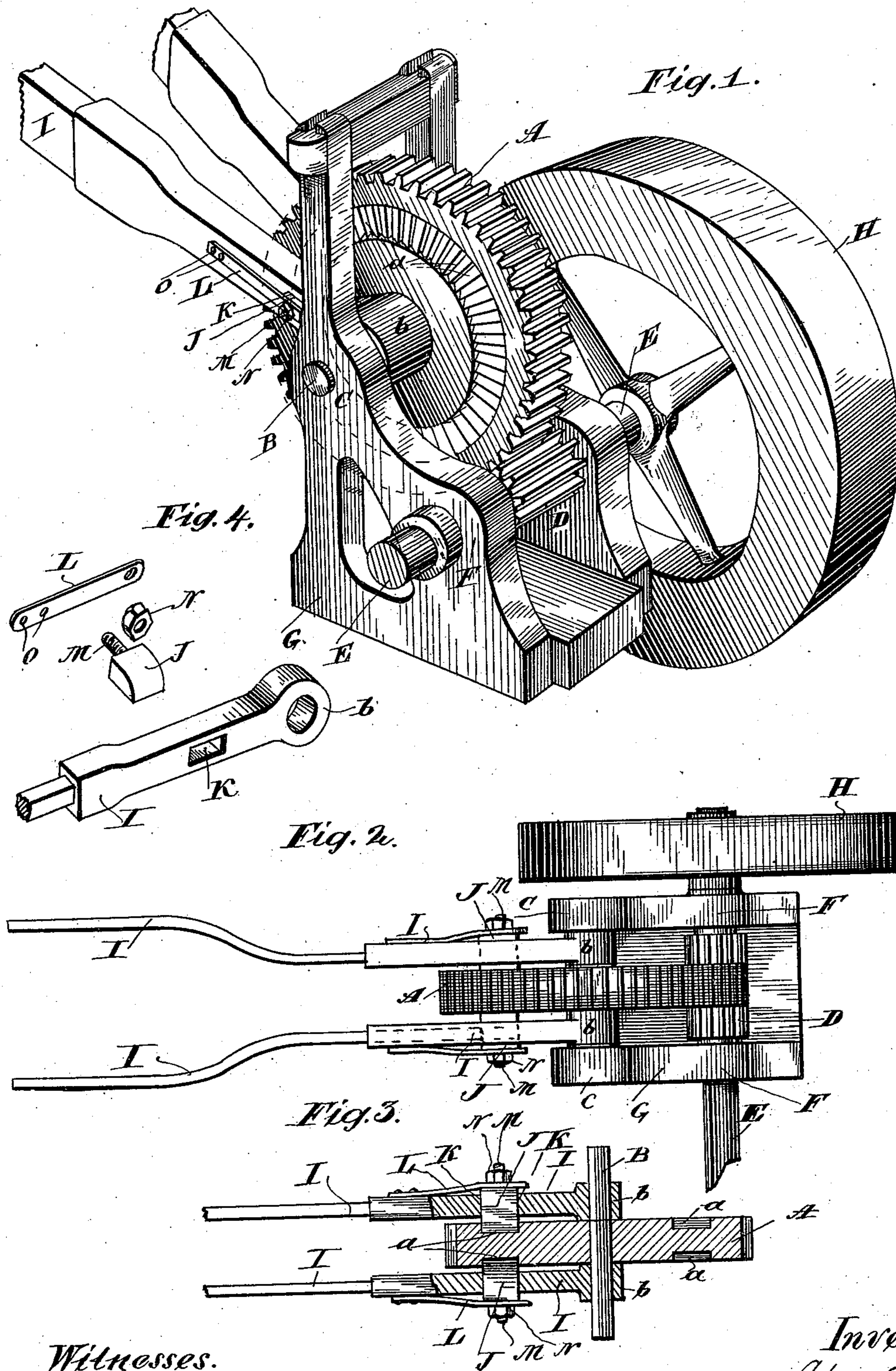


(No Model.)

A. LANG.
PROPELLING MECHANISM.

No. 504,274.

Patented Aug. 29, 1893.



Witnesses.
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PROPELLING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 504,274, dated August 29, 1893.

Application filed March 16, 1893. Serial No. 466,286. (No model.)

To all whom it may concern:

Be it known that I, ADAM LANG, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Propelling Mechanism, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

My invention relates to improvements in ratchet mechanism devoted to the purpose of the production of motive power and it is adapted to the propulsion of cars, or small vessels,
15 or can be adapted to use in machinery of any kind where hand power is employed.

My invention consists in the driving gear with double ratchet and lever mechanism as hereinafter described, shown in the accompanying drawings and more specifically pointed out in the claims.

In the accompanying drawings Figure 1 is a perspective view of the working mechanism. Fig. 2 is a plan view of the same. Fig. 3 is a horizontal central section of spur gear showing the relative position of the parts; and Fig. 4 is a view of lever with details connected therewith.

In the figures A is the ratchet spur gear
30 mounted upon the shaft B, in bearings C, and provided with radial ratchet teeth, *a a*.

D is a pinion upon the driving shaft E, mounted upon bearings F in the frame G, which also supports the shaft B. This pinion
35 may be of any length desired, to strengthen the teeth.

H is a fly wheel essential to give the necessary velocity and momentum and so perpetuate the movement of the gearing.

I, I, are the propelling levers, pivoted upon the shaft B at *b* and provided with the transversely moving pawls, J, J, which slide in the sockets K and project through the handle levers so as to make contact with the radial
40 teeth *a a*. The pawls J, J, are secured to the springs L upon the outside of the levers I by wrists M and nuts N, the spring itself being securely attached at O to the levers.

It will be obvious that by working the le-

vers alternately up and down the gears will
50 revolve as the pawls alternately slide over or engage the ratchet teeth *a a*, the fly wheel making the movement continuous. Only one lever could be employed if desired, but two levers will give greater power and more regu-
55 larity of movement. When two levers are employed, they are bent outward at their outer extremities for the convenience of two operators.

The advantages of the device are obvious
60 in its simplicity, great power and adaptation to many positions where permanent power can not well be applied or is seldom needed as in hand-cars, road machines, &c.

Having described my invention, what I
65 claim as new, and desire to secure by Letters Patent, is—

1. In a propelling device the combination of the main spur-gear A provided with annularly arranged duplicate ratchet teeth on
70 each face, and mounted upon the shaft B, the levers I pivoted upon said shaft, and pawls J J, passing through sockets in said levers, with operating springs L, secured thereto and to said levers, substantially as de-
75 scribed.

2. In a propelling device, the combination of the main spur gear A, provided with duplicate annularly and radially arranged ratchet
80 teeth *a a* on each face, a shaft B upon which said gear is mounted, operating levers I, and transverse pawls J supported in sockets K in the levers I springs L, secured to wrists M, and to the levers I, with pinion D upon shaft E, and fly-wheel H substantially as described.
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3. In a propelling device the combination of the main spur gear A provided with duplicate radial and annularly arranged ratchet
90 teeth upon each face, and mounted upon the shaft B, levers I pivoted upon the shaft B, on each side of the gear A, and provided with sockets K, pawls J moving in said sockets, adapted to engage the said ratchet teeth, and provided with projecting wrists M, springs secured to the levers at one extremity and to
95 the said wrists at the other, with the supporting frame G, for the shaft B substantially as described.

4. In a propelling device the combination
of the main spur-gear A provided with an an-
nularly arranged duplicate series of ratchet
teeth on each face, and mounted upon the
5 shaft B, the levers I pivoted upon said shaft,
pawls J, J, passing through sockets K in said
levers, operating springs secured thereto, and

to said levers, with pinion D upon shaft E,
fly wheel H and main supporting frame for
said shafts G, substantially as set forth.

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Witnesses:

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