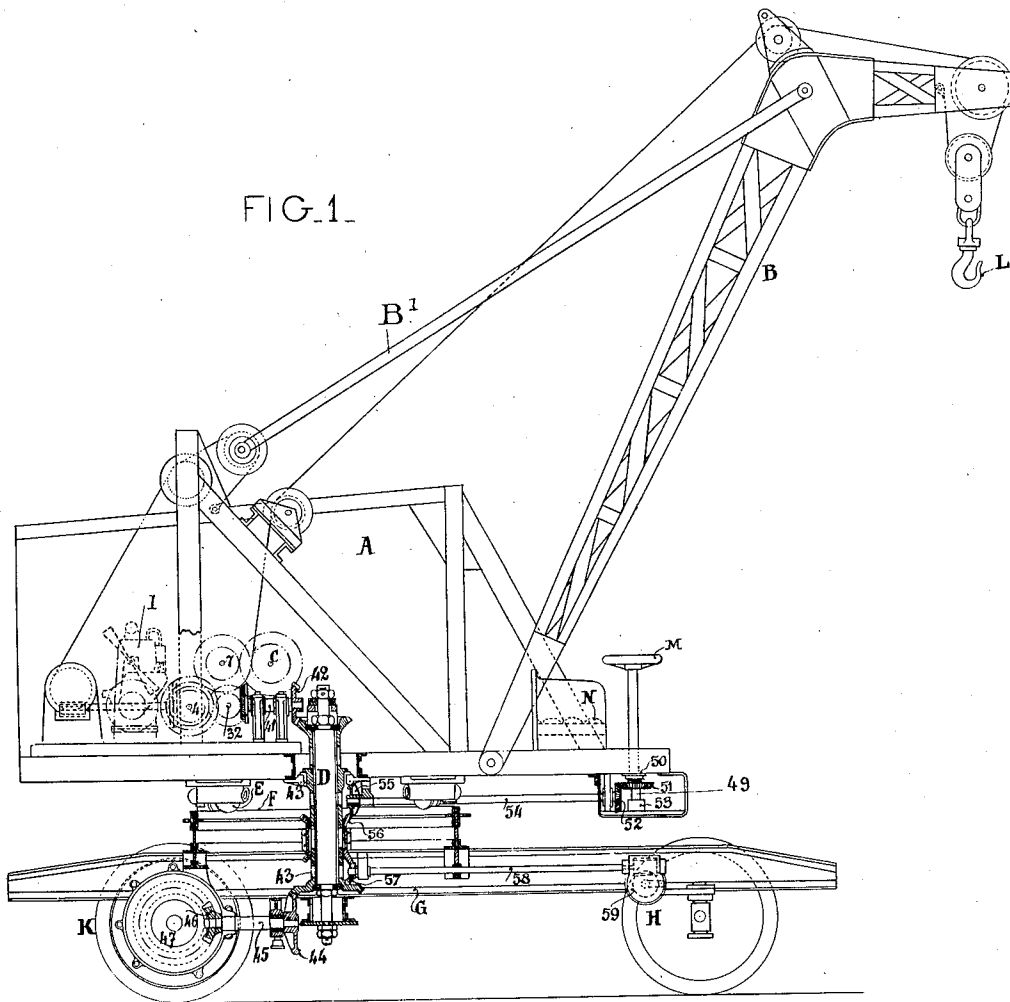


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 SELF PROPELLING TRAVELING CRANE.
 APPLICATION FILED SEPT. 30, 1919.

1,408,263.

Patented Feb. 28, 1922.
 3 SHEETS—SHEET 1.



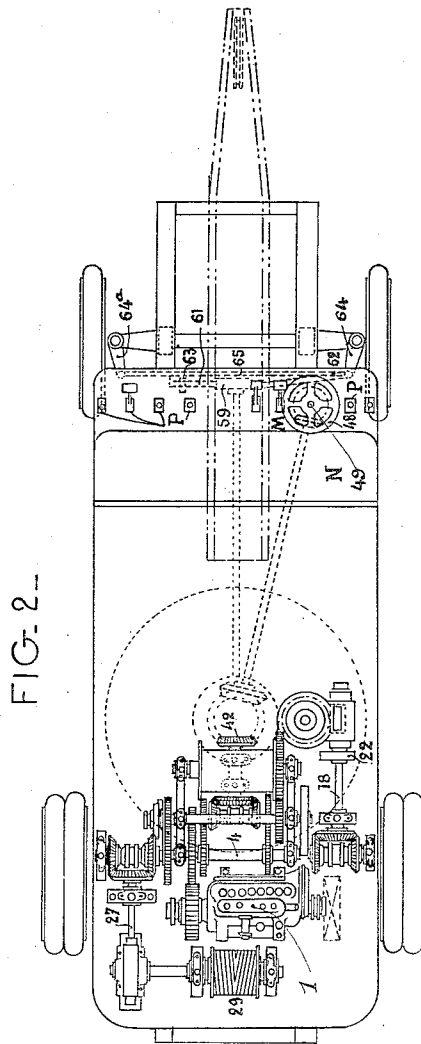
INVENTOR
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 BY *Mum & Co.*
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3 SHEETS—SHEET 3.

FIG 3

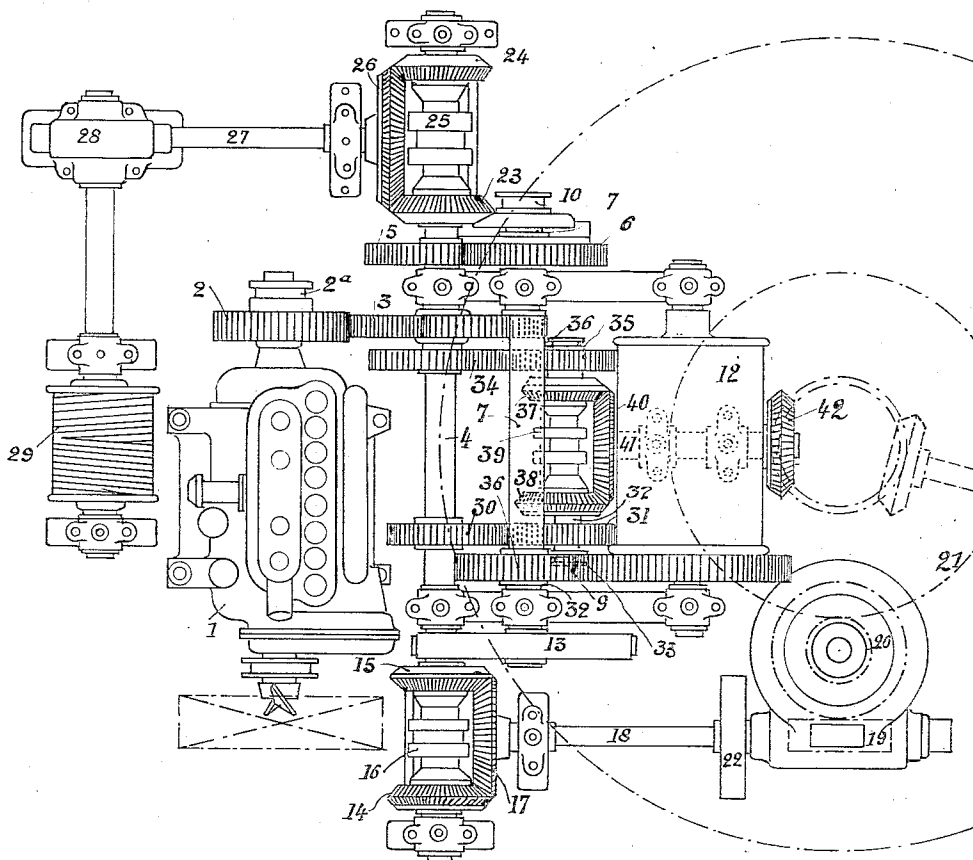
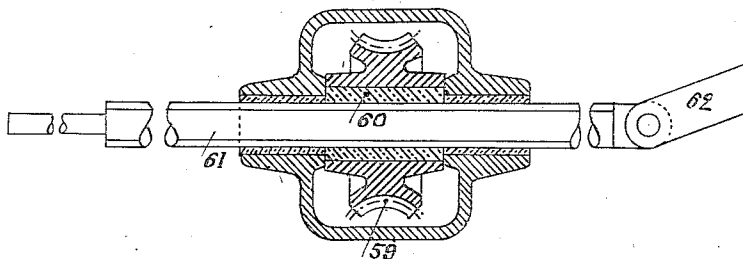


FIG 4.



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UNITED STATES PATENT OFFICE.

GAËTAN BRUN, OF PARIS, FRANCE.

SELF-PROPELLING TRAVELING CRANE.

1,408,263.

Specification of Letters Patent. Patented Feb. 28, 1922.

Application filed September 30, 1919. Serial No. 327,591.

To all whom it may concern:

Be it known that I, GAËTAN BRUN, a citizen of the Republic of France, and residing at Paris, Seine Department, No. 1 Rue Jules Lefebvre, in the Republic of France, have invented certain new and useful Improvements in Self-Propelling Traveling Cranes, (Case A,) of which the following is a specification.

10 This invention has for its object to provide an improved self-propelling crane for traveling on a road, capable of assuming all the positions that are required for the handling of loads.

15 With this object, the motor mounted on the platform of the crane and serving for lifting the load, is adapted also to drive the wheels of the platform and to turn the crane around its vertical axis, and the arrangement of the mechanism is such that the crane is 20 capable of simultaneously lifting, swinging or slewing, and transporting the load.

A constructional form of this invention is illustrated in the accompanying drawings in 25 which:

Fig. 1 is a side elevation partly in section of the improved crane.

Fig. 2 is a plan thereof.

Fig. 3 is a partial plan on a larger scale, 30 and

Fig. 4 is an axial section of a portion of the slewing mechanism.

The crane proper comprises a frame supporting a cabin A and a pivoted jib B mounted on slewing rollers E running on a circular track F. The cabin A contains a winch C whose rope passes over guide pulleys and carries a hook L. In front of this cabin is a seat N, a hand steering wheel M and a series of levers P for controlling the various devices. The whole of this arrangement is mounted on a fixed turn-post D of a carriage G resting on two wheeled axles K H; the rear wheels K being driving wheels, and the 45 front wheels H serving as steering wheels.

A petrol engine 1 provided with a radiator with fan, carries at the end of its crank shaft a pinion 2 loose on said shaft but capable of being connected thereto by means of a clutch 2^a (Fig. 3).

50 This pinion 2 meshes with a pinion 3 fixed on a shaft 4 that drives a lifting drum, a mechanism for slewing the crane, a mechanism for raising the jib, and the driving 55 wheels of the carriage.

The lifting mechanism is as follows: A

pinion 5 fixed on the shaft 4 drives a pinion 6 that is loose on an intermediate shaft 7 but capable of being connected thereto by means of a clutch 10. This intermediate shaft carries a pinion 9 driving through the medium of a toothed wheel 11 a lifting drum 12. The shaft 7 carries also a pulley 13 for braking the lifting motion.

The mechanism for slewing the crane is 65 such that it allows the crane to rotate indefinitely around the post D in either direction. It comprises: a double sleeve 16 slidable along feather-keys on the shaft 4, and capable of connecting to said shaft alternatively one or the other of two bevel wheels 14 or 15. The result is that a pinion 17 can be driven in one or the other direction. This pinion is fixed on a shaft 18 and drives through a worm 19 a pinion 20 which can 75 roll over a ring of teeth 21 fixed on the casing of the track F. A brake 22 allows of regulating this motion.

For the purpose of raising the jib, a double clutch 25 is provided which allows of connecting to the shaft 4 alternatively one or the other of two pinions 23 or 24 meshing with a pinion 26 which, through the medium of a shaft 27 and a worm 28, actuates a winch 29 that acts through a rope upon the 85 tie-rod B¹ of the jib. The actuation of the driving wheels of the carriage is effected as follows:

A first speed is given by means of a toothed wheel 30 fixed on the shaft 4 driving a toothed wheel 31 that is loose on an intermediate shaft 32 but is capable of being connected thereto by means of a clutch 33. A second speed is given by the pinions 34 and 35 and the clutch 36 in a similar way. The 95 two clutches 33 and 36 are preferably controlled by means of one lever, (not shown).

For reversing the direction of travel, the shaft 32 is provided with a double clutch similar to the clutches employed for slewing 100 and raising the jib, comprising a sleeve 39 sliding along feather-keys on the shaft 32, and capable of being moved into engagement with one of the two toothed wheels 37 or 38. A toothed wheel 40 driven either by the toothed wheel 37 or by the toothed wheel 38 serves to drive a shaft 41 and a toothed wheel 42 fixed on the said shaft. This toothed wheel drives a socket or sleeve 43 mounted on balls on the slewing post D and 110 provided with a bevel pinion by which the motion is transmitted to a pinion 44, a shaft

45, a pinion 46 and a differential 47 driving the wheels of the carriage.

Since the crane driver is carried round by the crane in its slewing motion, it is necessary that he shall be able nevertheless to steer the carriage independently of the position of the crane. For this purpose a steering wheel M with its spindle 49 is mounted by means of brackets 50 and 53 on the revolving frame. A bevel pinion 51 fixed on the spindle 49 actuates a pinion 52 that is fixed on a shaft 54 carrying a pinion 55. This pinion drives a two-part sleeve 56 mounted on balls on the socket 43. This sleeve drives in its turn a pinion 57 fixed on a shaft 58 driving a speed-reducing device 59 of the worm type fixed on the traveling carriage G. The interior of the worm wheel constitutes a nut 60 having multiple square threads actuating a screw-threaded rod 61 guided in a bracket 63. This rod carries a connecting rod 62 attached to the steering arm 64, and through the medium of the bar 65, to the steering arm 64^a, (Figs. 2 and 4).

In order to facilitate the turning of the crane and to prevent the driving of the crane from influencing the direction of travel, a disengaging device may be provided to enable the pinion 55 to be disengaged. On the other hand it may be preferred to arrange a brake on the socket 43.

In cases where it is only required to effect the slewing of the crane over a restricted angular area, the construction may be simplified by mounting the steering gear upon the traveling carriage.

Instead of a hook L, the crane may carry a grab or bucket, and be provided with all suitable accessories.

A self-propelling crane constructed according to the present invention is capable of performing all the operations of handling loads in public works, ports, and for the most varied industrial purposes. It is capable of traveling at a fast rate and is

not bulky. Its power of lowering the jib facilitates the transporting of the apparatus, and also its passage under arches, etc.

Claims:

1. The combination with a motor vehicle, a revoluble crane disposed upon the said vehicle and an engine mounted on the said crane, of a stationary centering pivot having the crane revoluble thereupon, a movable sleeve disposed upon the said centering pivot, the upper end of the said sleeve being connected with the engine by suitable power transmission means, and means connecting the lower end of the said sleeve with the driving wheels of the vehicle.

2. The combination with a motor vehicle, a revoluble crane disposed upon the said vehicle and an engine mounted on the said crane, of a stationary centering pivot having the crane revoluble thereupon, a movable sleeve disposed upon the said pivot, a steering hand wheel mounted at the front of the vehicle upon the revoluble crane, a movable sleeve revoluble upon the said first-named sleeve, means connecting the said movable sleeve on the one hand with the steering hand wheel and on the other hand with the steering wheels of the vehicle.

3. The combination with a motor vehicle, a revoluble crane disposed upon the said vehicle and an engine mounted on the said crane, of a stationary centering pivot having the crane revoluble thereupon, a sleeve movable upon the said pivot and serving to transmit the movement of the engine to the driving wheels, and power transmission means comprising a change-speed device disposed between the engine and the said sleeve.

In testimony, that I claim the foregoing as my invention I have signed my name in presence of subscribing witnesses.

GAËTAN BRUN.

Witnesses:

CHAS. P. PRESSLY,
EUGENE WATTIER.