2 Sheets—Sheet 1.

R. D. GREEN.

MOTIVE POWER.

No. 191,955. Patented June 12, 1877.

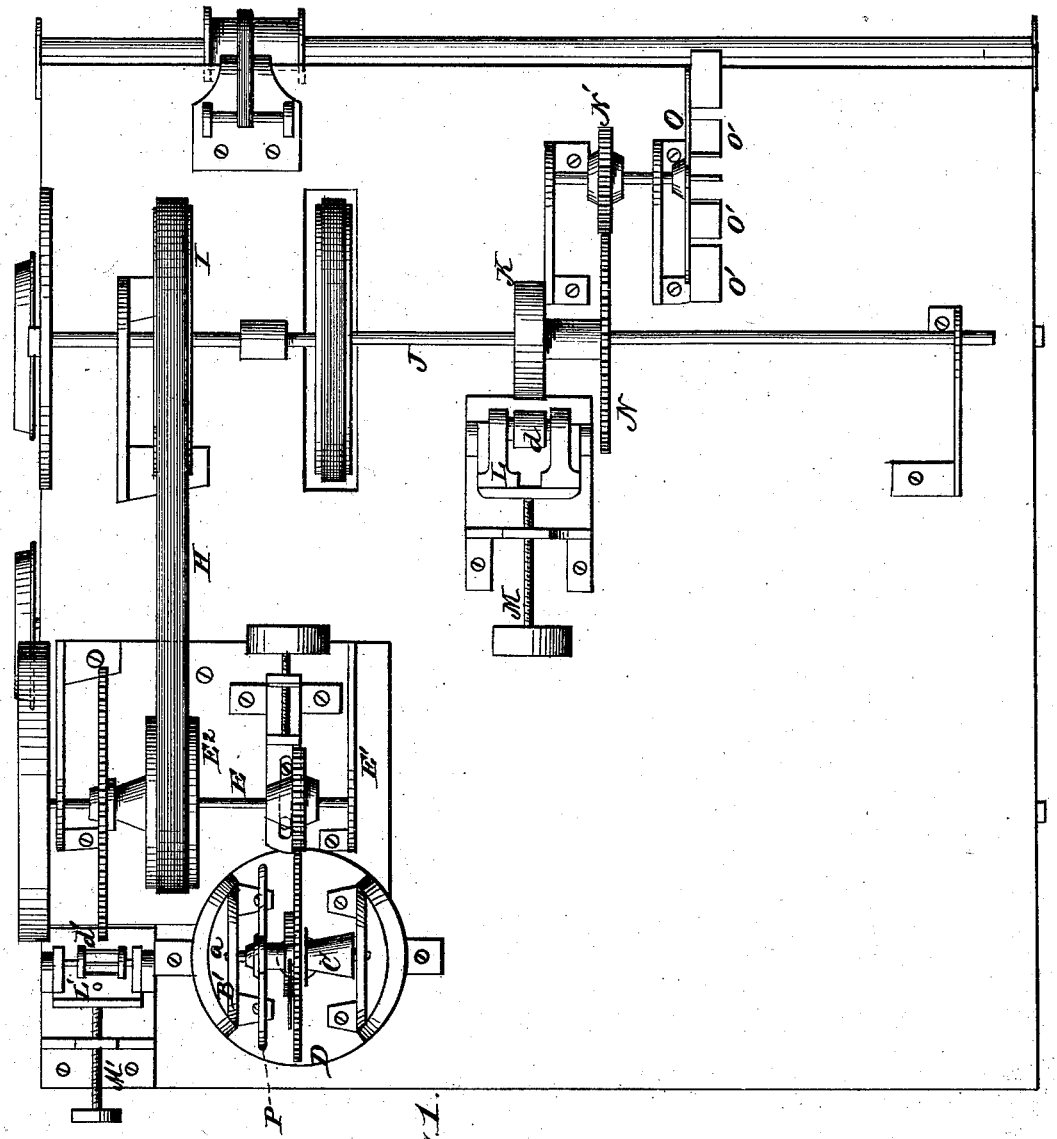

Fig. 1.

WITNESSES.
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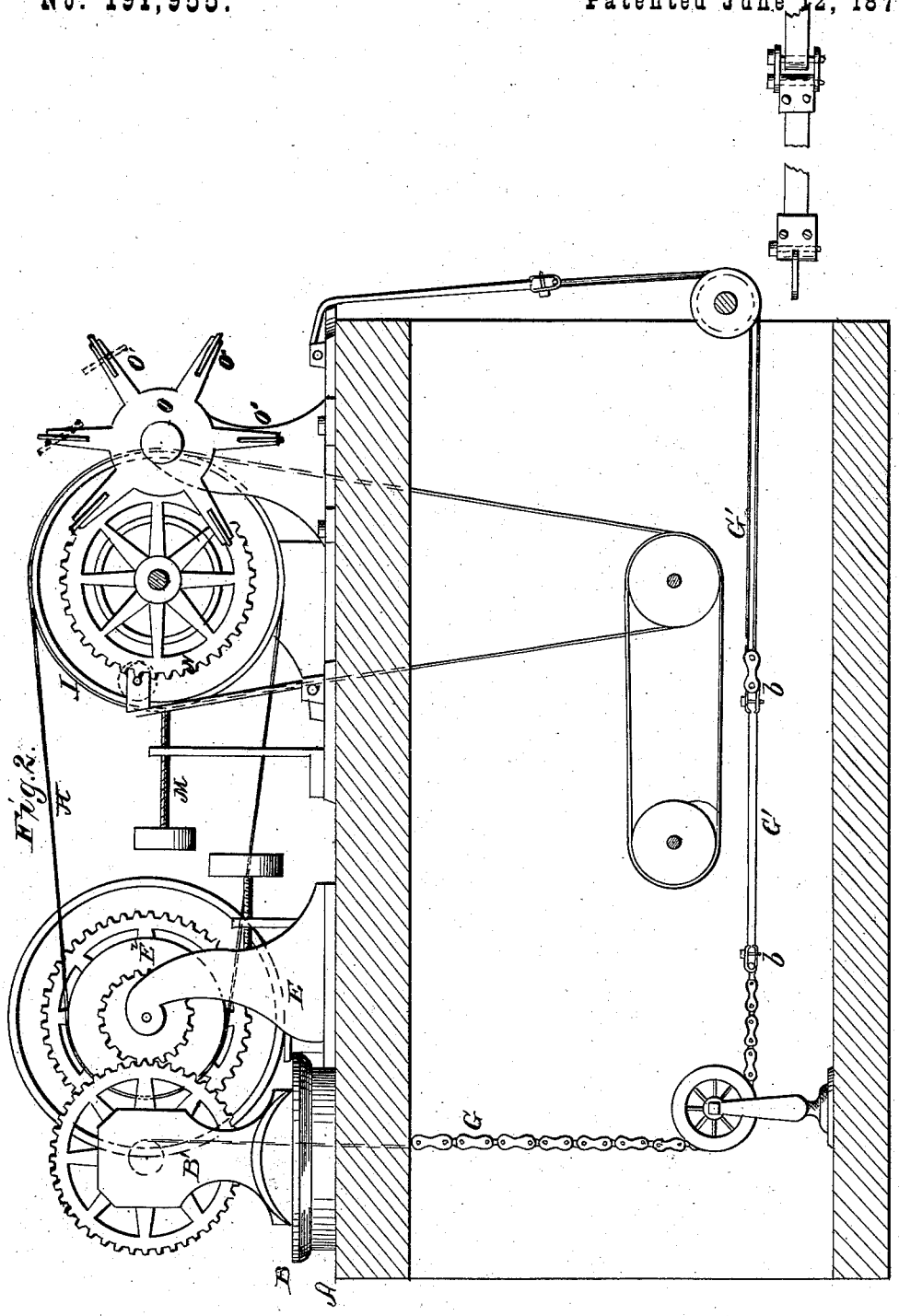

WITNESSES

Franck L. Durand

Mank Galt

INVENTOR

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UNITED STATES PATENT OFFICE.

ROBERT D. GREEN, OF COLUMBUS, MISSISSIPPI.

IMPROVEMENT IN MOTIVE-POWERS.

Specification forming part of Letters Patent No. **191,955**, dated June 12, 1877; application filed May 29, 1877.

To all whom it may concern:

Be it known that I, ROBERT D. GREEN, of Columbus, in the county of Lowndes, and in the State of Mississippi, have invented certain new and useful Improvements in Motive-Power; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to motive-powers for driving machinery of any and every kind; and it consists in one or more separate and distinct engines, each driven by an elastic rubber belt, or its equivalent, and all the engines connecting with and operating a common main shaft, from which the machinery is run, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a plan view of my invention. Fig. 2 is a longitudinal vertical section of the same.

In the drawings I have only represented one engine connected with the main shaft as, no matter how many are used, they are constructed precisely alike.

A represents a bed-plate carrying a turn-table, B, having two parallel standards, B′ B′, in which is placed a shaft, *a*, having a drum, C, secured to it. The shaft *a* also has a cog-wheel, D, placed loosely on it, and connected to the drum or the shaft by an ordinary pawl or ratchet. The drum C is made conical in form, as shown, and at its larger end is fastened a link-chain, G, which winds around the drum, and its other end is, by means of a clamp, *b*, connected to a rubber strap or band, G′, which may pass around suitable pulleys, as shown, and be anchored at any desired point, so as to get the proper tension thereon.

The rubber may be in the form of a solid strap fastened in clamps *b*, or it may be in the form of an endless band when it is to be passed around pins in the clamps. One or more of these rubber bands or straps may be connected together to form one elastic band for operating the engine.

The object of making the drum C conical is to equalize the pressure or tension of the spring, for, as the chain G is wound up on the drum and the spring-band acts thereon, the shortest leverage is when the tension is the strongest, and as the tension decreases the leverage increases in proper proportion.

The cog-wheel D meshes with and operates a train of gearing, E, mounted in a frame, E^1, and a wheel, E^2, therein is, by a belt, cog-wheels, or other devices H, connected with a wheel, I, on the main shaft J. This main shaft is to be connected by any suitable means with the machinery to be driven, and upon said main shaft is a friction-wheel, K, against which is made to operate a roller, *d*, to regulate the speed of said shaft. This roller is mounted in a frame, L, pivoted at its lower end, and adjusted to or from the friction-wheel K by a set-screw, M.

A cog-wheel, N, upon the main shaft J gears with a similar wheel, N′, which operates a fly for governing the motion of the shaft and making the same steady. This fly consists of a rotating wheel, O, with a series of wings, O′, pivoted centrally and adjusted on said centers at any angle desired to cut the air more or less, as required.

Each engine is provided with a brake consisting of a pivoted frame, L′, operated by a set screw, M′, and in the frame is mounted a pinion, *d*′, which is made to mesh with one of the cog-wheels in the train E.

The turn-table B is only to be used where the machinery is intended, at times, to be reversed, such as for running cars, vessels, &c. For stationary machinery the turn-table is not necessary, but the frame B′ may then be made stationary.

The rubber band or strap G′ is stretched by winding the chain G on the drum C, and this may be done by providing the shaft *a* or drum C with a series of radial arms, P, or in any other suitable or convenient manner.

It is intended to use a series of these engines, the number depending upon the amount of power required, each engine being driven or operated independent of the others by its

own rubber band G′, and all the engines connected with the main shaft J.

For instance, if one-hundred-horse power is required, and each engine is ten-horse power, then ten such engines are required, and they being all wound up a power equal to one-hundred-horse power is exerted on the main shaft J. The engineer can easily wind up the different engines one by one, as required, before they entirely run down, and thus keep up the power, and by means of the brakes on the various engines, as well as the brake for the main shaft, regulate the speed.

This invention may be applied to any machinery, from the smallest to the largest, and will entirely supersede the use of steam.

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

1. A series of engines, or trains of gearing, each provided with an independent winding apparatus, and each operated independently of the others by a rubber strap, belt, or band, and all connected to and operating a common main shaft, substantially as and for the purposes herein set forth.

2. The combination of the conical drum C, cog-wheel D, connected with the gearing E, link-chain G, clamps *b*, and rubber straps or bands G′, substantially as and for the purposes herein set forth.

3. The pivoted frame L′, carrying the pinion *d*′, and operated by the set-screw M, in combination with the train of gearing E, substantially as and for the purposes herein set forth.

4. In combination with the main shaft J, the gear-wheels N N′, and the fly composed of the wheel O, with centrally-pivoted and adjustable wings O′, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of May, 1877.

ROBERT D. GREEN.

Witnesses:

FRANK GALT,

H. AUBREY TOULMIN.