

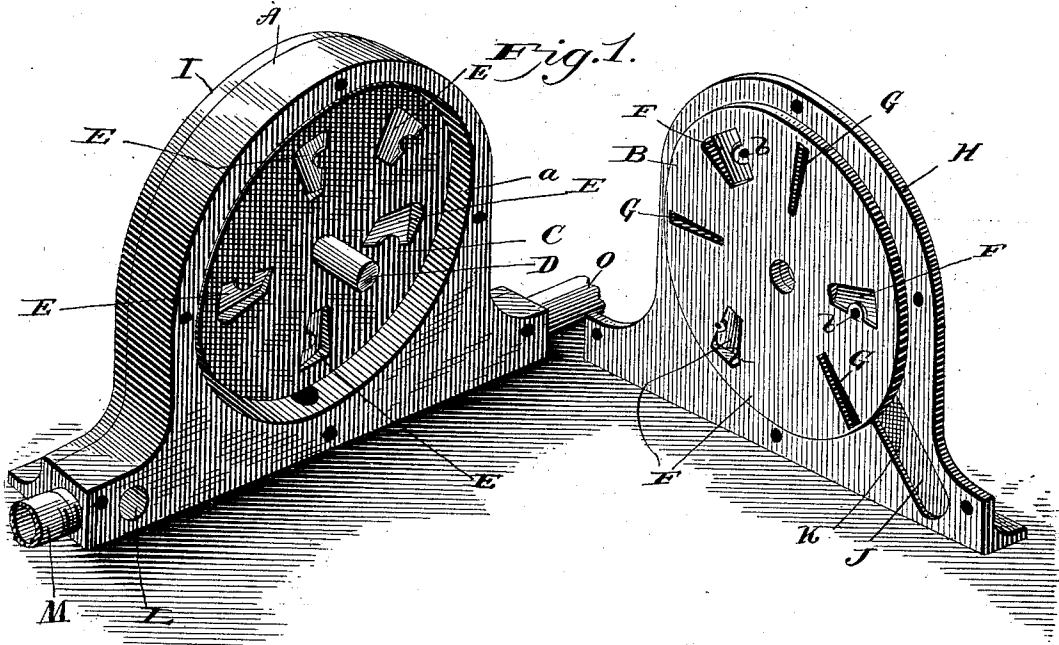
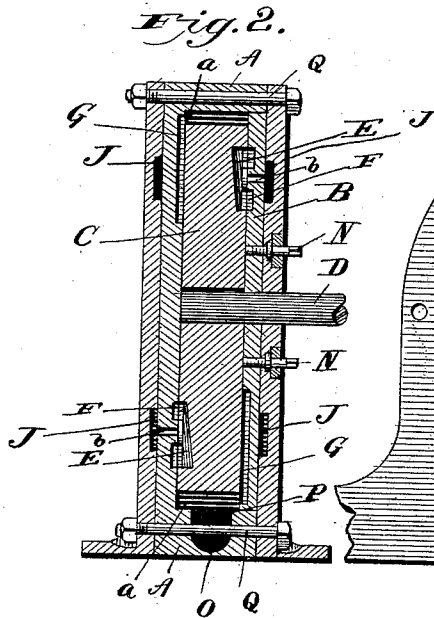
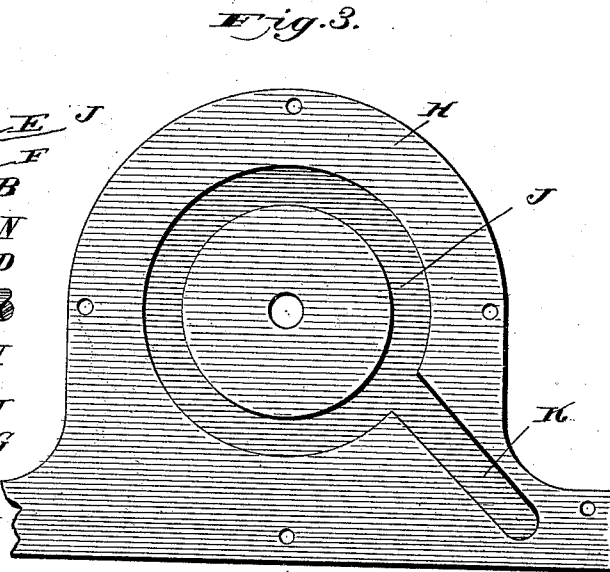
(No Model.)

2 Sheets—Sheet 1.

N. E. AUSTIN.
MOTOR.

No. 445,593.

Patented Feb. 3, 1891.



WITNESSES:

J. H. Smith
E. S. Sumner

INVENTOR

Nelson E. Austin

BY *F. W. Smith*

ATT'YS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

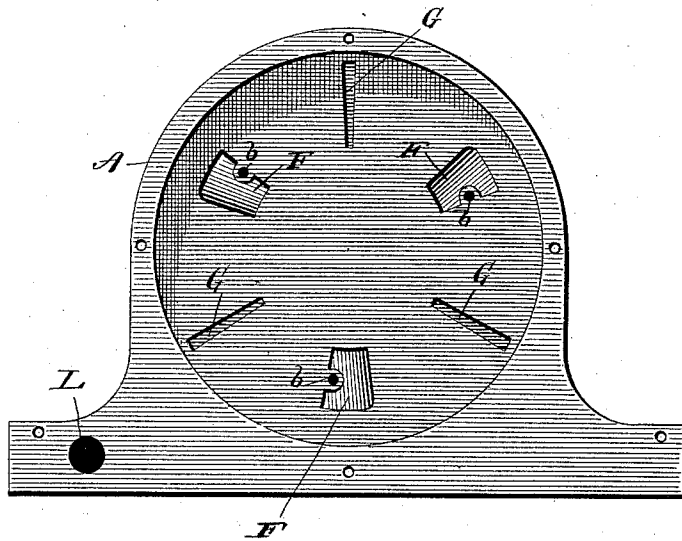


Fig. 5.

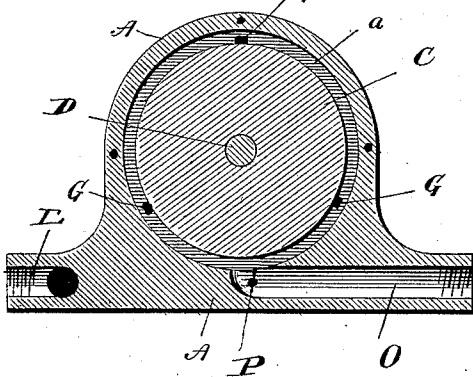
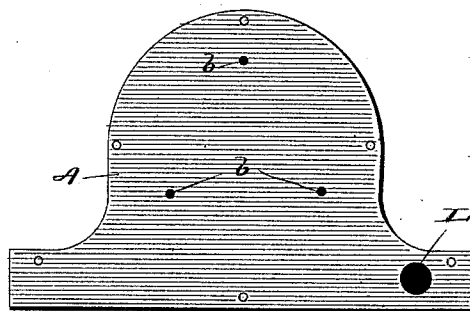


Fig. 6.



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UNITED STATES PATENT OFFICE.

NELSON E. AUSTIN, OF DANBURY, CONNECTICUT.

MOTOR.

SPECIFICATION forming part of Letters Patent No. 445,593, dated February 3, 1891.

Application filed November 4, 1889. Serial No. 329,142. (No model.)

To all whom it may concern:

Be it known that I, NELSON E. AUSTIN, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Motors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to motors such as are operated by steam, gas, compressed air, &c., and has for its object to provide a device of this description which shall operate with very little friction and be capable of exerting considerable power.

With these ends in view my invention consists in the details of construction and combination of elements, such as will be fully hereinafter set forth, and then specifically designated by the claim.

In the accompanying drawings, Figure 1 is a perspective representing my improved motor with the cap and front cheek-plates removed; Fig. 2, a central vertical longitudinal section; Fig. 3, a detail interior of the front cheek-plate; Fig. 4, an interior view of the casing with the motor-wheel removed; Fig. 5, a central vertical cross-section of my improved motor; Fig. 6, a back view of the casing with the rear cheek-plate removed.

Similar letters denote like parts in the several figures of the drawings.

A is the casing, which is closed at the rear and open at the front.

B is a cap which fits snugly within the front of the casing, so as to form the front wall thereof, and C is the motor-wheel rigidly mounted on the shaft D, the wheel being within the casing and inclosed by the cap B, while the shaft is journaled within the cap and the front cheek-plate, to be hereinafter described. The diameter of this wheel is less than the interior diameter of the casing, so that there is a space *a* between the periphery of said wheel and the casing.

Within the front and rear faces of the wheel are equidistant wedge-shaped pockets E, which are preferably five in number, and

are arranged radially from the axis of the wheel.

The interior faces of the back wall of the casing and of the cap are each provided with equidistant pockets F, similar to the pockets E, but extending in assembled position in a direction reverse to that of the latter. These pockets F are preferably three in number, and in front of each of them are ports *b*, which extend through said back wall and cap. Between said pockets F are channels G, which extend radially beyond said pockets and also beyond the circumference of the wheel C.

H I are the front and rear cheek-plates, respectively, within the inner faces of which are formed annular channels J, with which the ports *b* communicate. These channels have ducts K, which lead to and communicate with the steam-box L, which extends through the foot of the casing from side to side, and is supplied directly from the steam-pipe M.

N are adjusting-screws, which extend through the front plate H within the cap B, and by means of which the latter may be adjusted to a position in close proximity to the wheel C without exerting any friction thereon.

O is the exhaust-port, which extends through the base of the casing and opens into the interior of the latter, as seen at P. Q are bolts which secure the casing and cheek-plates together.

The operation of my improvement is as follows: Steam enters through the pipe M within the annular channels J in both plates H I, and thence through the ports *b* to the wheel. The steam will impart motion to the wheel by entering one of the pockets E and expanding against the inclined wall thereof, and as the wheel revolves the steam will successively operate on all the pockets E through the ports *b*, thus imparting a rapid revolution to said wheel. This will be readily understood when it is borne in mind that the pockets E in the wheel and the pockets F in the inner, front, and rear wall of the casing are both wedge-shaped, but arranged in reverse directions, since the oppositely-inclined floors of said pockets E F facilitate the expansion of the steam so that the resultant force of the latter will be so directed against the pockets E

as to drive the wheel. As the wheel revolves, the steam in the pockets E will be discharged into the channels G, whence it will find access to the space *a*, and thence be exhausted
5 through the opening P.

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

The combination of the casing having the
10 exhaust-port O, the steam-chest L, and the annular channels J, the wheel mounted in the casing and of a less diameter, thereby

forming an annular space *a*, communicating with the exhaust-port, and provided with steam-pockets, and the cap having steam- 15 pockets and inlet-ports communicating with the channels J, and escape-ports leading to the annular space *a*, as specified.

In testimony whereof I affix my signature in presence of two witnesses.

NELSON E. AUSTIN.

Witnesses:

JABEZ AMSBURY,
JOSEPH E. PLATT.