J. A. NOBLE.

DRIVING MECHANISM FOR JORDAN ENGINES.

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1,011,835.

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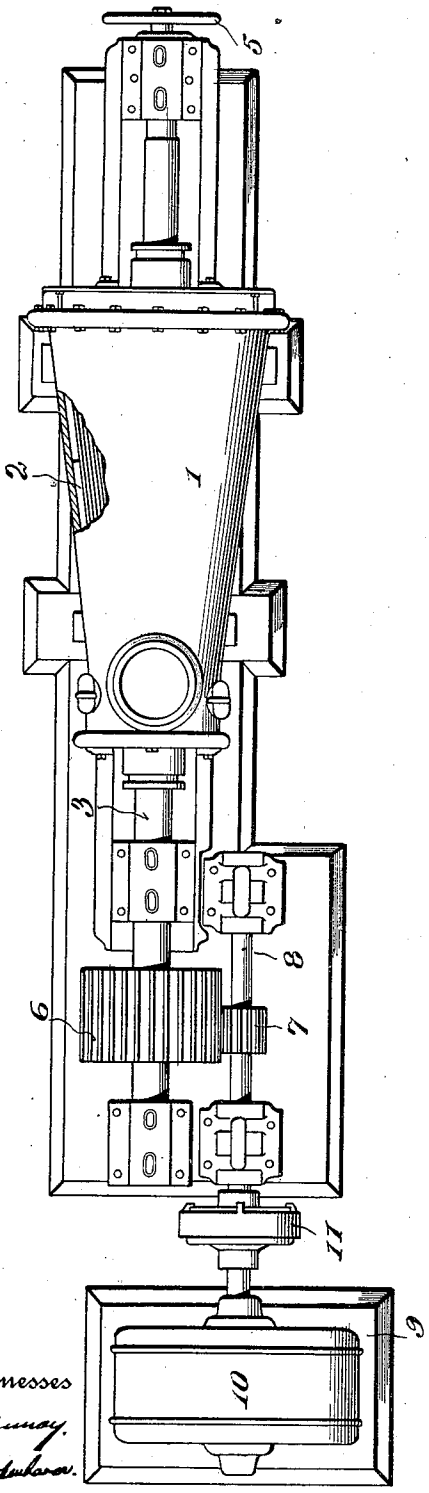

Fig. 1.

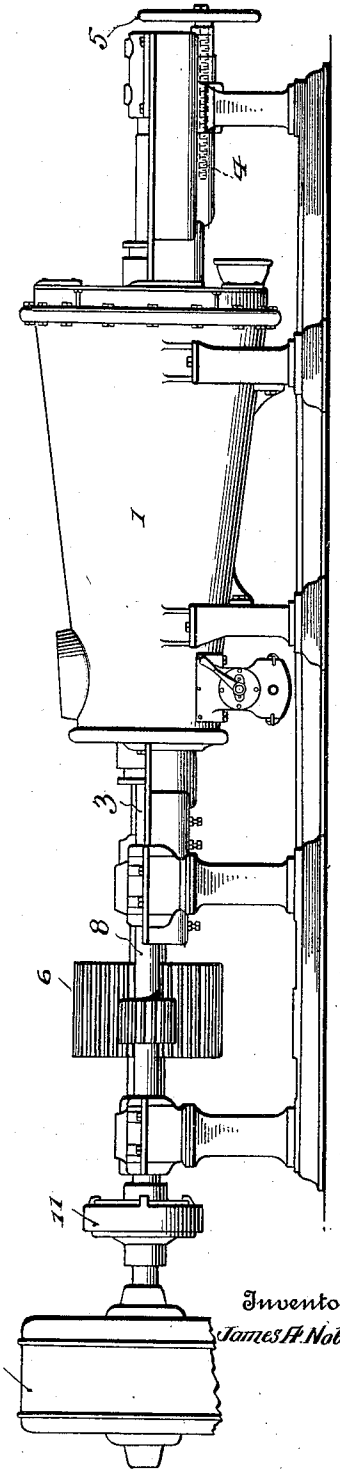

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

JAMES A. NOBLE, OF HOOSICK FALLS, NEW YORK, ASSIGNOR TO THE NOBLE & WOOD MACHINE CO., OF HOOSICK FALLS, NEW YORK, A CORPORATION OF NEW YORK.

DRIVING MECHANISM FOR JORDAN ENGINES.

1,011,835. Specification of Letters Patent. **Patented Dec. 12, 1911.**

Application filed March 20, 1911. Serial No. 615,579.

To all whom it may concern:

Be it known that I, JAMES A. NOBLE, a citizen of the United States, residing at Hoosick Falls, in the county of Rensselaer and State of New York, have invented new and useful Improvements in Driving Mechanism for Jordan Engines, of which the following is a specification.

My invention relates to improvements in paper-refining machines, known as "Jordan engines". These machines comprise a stationary shell or casing, within which is rotatably mounted a drum or plug carrying cutting knives, which co-act with knives secured to the inner periphery of the shell to cut or grind up the material or stock fed into said shell. Means are of course provided for rotating the plug and its shaft. The shell and plug are tapered in form and, as the knives wear away, the plug with its shaft has to be adjusted longitudinally within the shell to maintain the stationary and revolving knives in proper relative position. This adjustment is made by manually-operated means acting upon the plug-shaft. Usually, heretofore, these Jordan engines have been driven by a belt pulley, either secured directly on the plug shaft or else mounted upon a fixed base, in which latter case, of course, means must be provided for permitting a relative longitudinal movement between the plug-shaft and the pulley-shaft. It has also been proposed to drive the plug-shaft by an electric motor, and this form of drive offers considerable advantage, but here again, either the motor-frame must be made longitudinally adjustable with the plug-shaft or else some sliding connection must be provided between the plug-shaft and the motor-shaft.

One disadvantage of the motor-drive, as heretofore designed, has been the necessity of providing a special slow-speed motor, because the speed, at which standard motors are designed to run, is higher than the speed at which the plug-shaft can be run.

My invention consists in adapting a motor-drive for Jordan engines, in which an ordinary standard high-speed motor can be employed and in which also the motor is mounted on a fixed base and does not have to be adjusted longitudinally with the plug-shaft.

My invention is illustrated in the accompanying drawing and I will now describe it in detail with reference to said drawing.

Figure 1 is a plan view, and Fig. 2 a side elevation of a Jordan engine equipped with my improved motor-drive.

In these views, 1 represents the ordinary shell or casing of the engine, containing the cutting-plug 2, and 3 represents the plug-shaft. The means for adjusting this shaft longitudinally is here represented as a screw 4, provided with a hand-wheel 5, the screw engaging a nut secured to the plug shaft. All the parts above described are old and constitute the ordinary type of Jordan engine.

10 represents a standard electric motor, mounted upon a fixed base 9, the armature shaft of the motor being connected, by a flexible coupling 11, with a countershaft 8 mounted in bearings upon the base of the Jordan engine and arranged parallel to the plug-shaft 3. The shaft 8 carries a pinion 7, which meshes with a gear 6, carried by the plug-shaft 3, said gear having a wide face, so that it remains in mesh with the pinion 7 notwithstanding longitudinal adjustment of the plug-shaft 3.

It will thus be seen that by my invention I do away with the necessity of adjusting the motor with the plug-shaft and also enable a standard high-speed motor to be used, the gear 6 and pinion 7 constituting a reducing gearing by means of which the plug-shaft is not driven at too high a speed by the motor.

Having thus described my invention, what I claim is:—

In a paper refining machine, the combination with the usual shell, plug and plug-shaft and means to adjust the latter longitudinally within said shell, of a gear having a wide face secured to said plug-shaft, a countershaft mounted parallel to the plug-shaft and carrying a pinion meshing with said gear, and an electric motor stationarily mounted relatively to said shell and opera-

tively connected to said countershaft, whereby the plug-shaft is driven by said motor at a lower speed than that of the armature of the motor and can be adjusted longitudinally relatively to the motor and countershaft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES A. NOBLE.

Witnesses:
WALTER WERNER,
HERBERT N. HAMILTON.