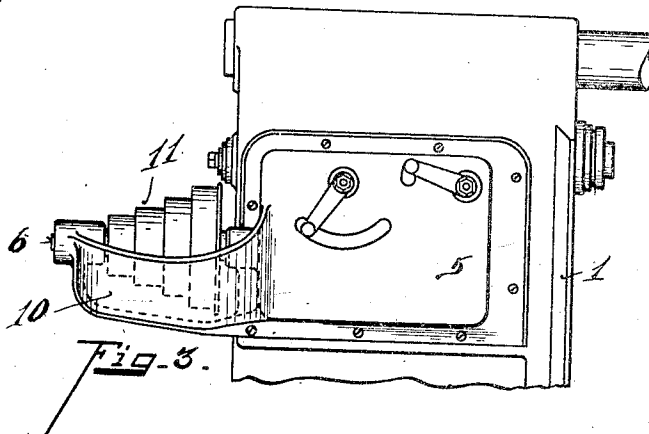
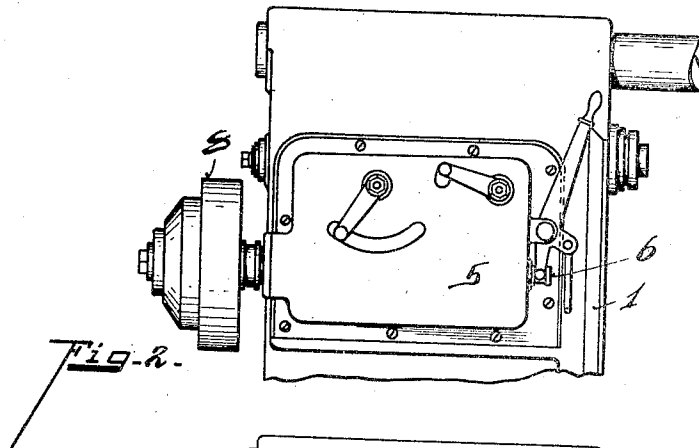
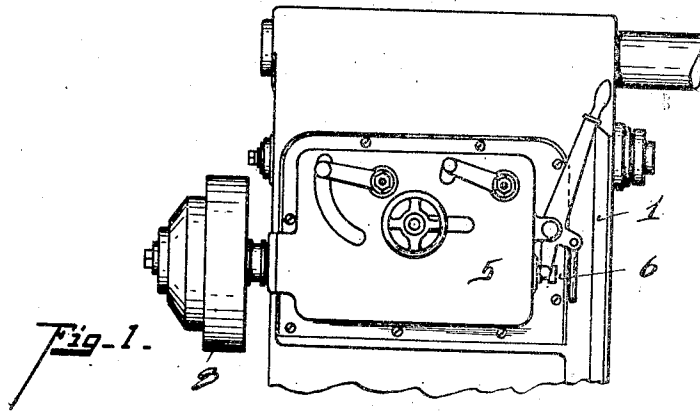


A. L. DE LEEUW.
MILLING MACHINE.
APPLICATION FILED OCT. 7, 1907.

980,614.

Patented Jan. 3, 1911

2 SHEETS—SHEET 1.



Inventor

Witnesses

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Adolph L. De Leeuw

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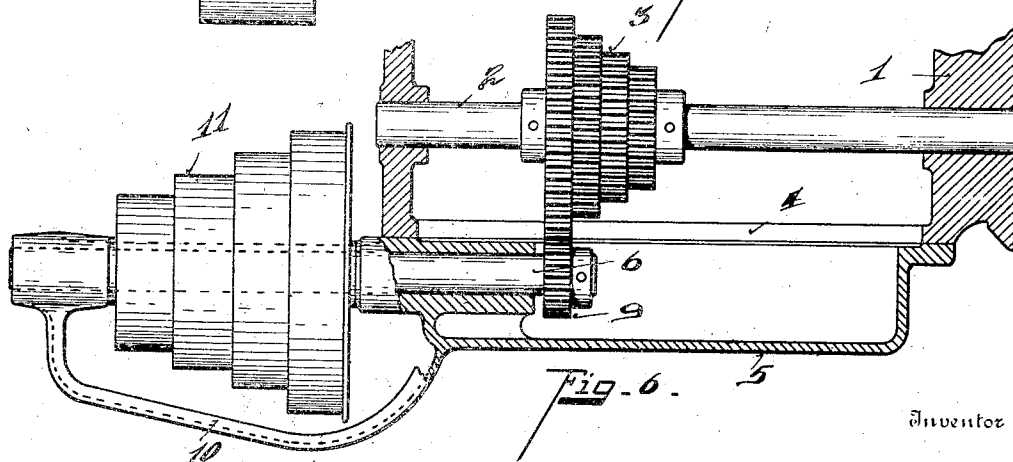
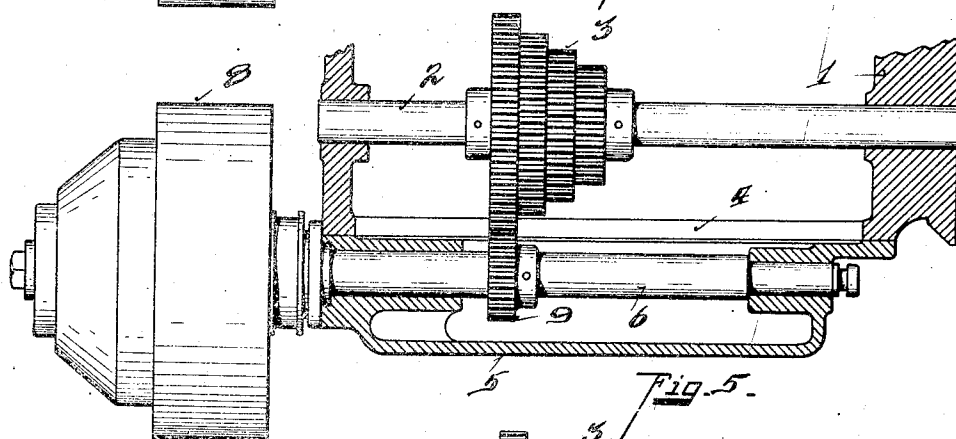
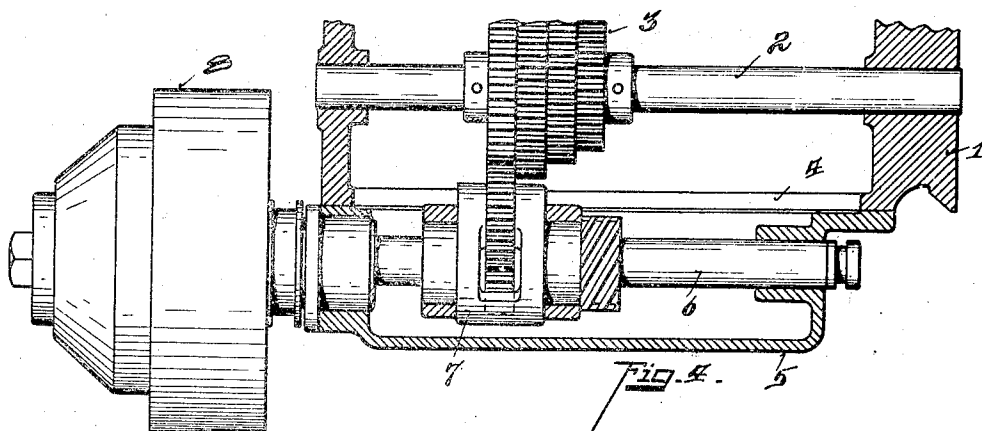
Attorneys

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2 SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

ADOLPH L. DE LEEUW, OF HAMILTON, OHIO, ASSIGNOR TO THE CINCINNATI MILLING MACHINE COMPANY, OF CINCINNATI, OHIO, A CORPORATION.

MILLING-MACHINE.

980,614.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed October 7, 1907. Serial No. 398,237.

To all whom it may concern:

Be it known that I, ADOLPH L. DE LEEUW, a citizen of the United States, residing at Hamilton, in the county of Butler and State of Ohio, have invented certain new and useful Improvements in Milling-Machines, of which the following is a specification.

My invention relates to an improved structural organization of a milling machine, having for its object the production of a single, standard main frame adapted to be interchangeably used with a plurality of auxiliary frames containing different types of driving mechanism.

The features of the invention will be more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which:—

Figures 1, 2 and 3 represent respective views showing the main and auxiliary frames in three different types of drives. Figs. 4, 5 and 6 represent corresponding sectional views through the main auxiliary frames of Figs. 1, 2 and 3 respectively.

There are three well recognized types of main drive, the first, represented by Figs. 1 and 4, consisting of a variable speed gear device, such as a cone and tumbler system, for driving the machine spindle. The second, represented by Figs. 2 and 5, is the motor drive, the speed of the motor being regulated by a rheostat. The third, represented by Figs. 3 and 6, in which the primary driving element is a belt cone. The first type is known as a constant speed drive, because the primary driving element or pulley wheel is driven at a constant speed, and the speed variations are effected by change gearing devices. The second and third types are known as variable drives, because the primary driving wheel is variously speeded by some mechanism extraneous of the machine. As milling machines have heretofore been constructed, the structure for the machines employing these various types of drives have been different one from the other.

It is my object to standardize the main frame of the machine and provide small auxiliary frames containing these different types of drive, in such manner that when a machine of a particular drive is ordered it will only be necessary to bolt to the standard frame the particular auxiliary frame containing the requisite type of drive. This is simply a matter of the final assembly, and

it therefore simplifies and unifies the construction and assemblage, cheapens the cost of production, and greatly facilitates and expedites the manufacture and disposition of the machines.

1 represents the main frame in which is the primary driving shaft 2 of the standard machine. 3 represents a cone of gears fixed thereto. The main frame is provided with an opening 4 against the marginal walls of which the auxiliary frame 5 is secured. In the first type of drive this frame would contain the shaft 6, upon which is mounted the usual tumbling gear arrangement 7, adapted to selectively engage the steps of the cone. On the outer end of the shaft 6 is secured the driving pulley 8 and may be provided with friction clutch mechanism for clutching the pulley to shaft 6. In the second and third types, the tumbler 7 is omitted and the gear 9 is fixed on the shaft 6, and intermeshed directly with one of the gears of the cone. The driving pulley 8 transmitting motion to the shaft 6, said pulley being belted with a motor, the speed of the motor being governed by a suitable controller. In the third type, the casing 10 at the end of the auxiliary frame 5 contains the cone pulley 11.

The importance of this improvement in simplifying and cheapening the manufacture of milling machines cannot be overestimated, and the strength and efficiency of the machine are likewise greatly increased by this new organization and structure. The improvement is equally advantageous to the user, who with a given machine can order from the shop any desired type of drive, all of which are interchangeable with his machine.

Having described my invention, I claim:—

1. An inclosed frame for a tool of the class described housing machine elements and formed with a side orifice, a gear to be driven exposed through said orifice, an auxiliary frame inclosed on one side and containing a selected type of driving mechanism, and a driven gear in said frame exposed on the open side and adapted to engage the gear to be driven, said frames having inter-fitting meeting surfaces, and said auxiliary frame being interchangeably secured to the main frame to form a unitary housing, whereby any one of a series of substantially like auxiliary frames containing

different types of drive may be interchangeably secured upon the side of the main frame.

2. An inclosed frame for a tool of the class described housing machine elements and formed with a side orifice, a gear to be driven exposed through said orifice, an auxiliary frame open on one side, a driving shaft having bearings in said auxiliary frame, a driving wheel on the end of said shaft outside of the frame, a driven gear on said shaft within the frame adapted to be engaged with said gear to be driven, said frames having inter-fitting meeting surfaces,

and said auxiliary frame being interchangeably secured to the main frame to form a unitary housing, whereby any one of a series of substantially like auxiliary frames containing different types of drive may be interchangeably secured upon the side of the main frame.

In testimony whereof, I have hereunto set my hand.

ADOLPH L. DE LEEUW.

Witnesses:

OLIVER B. KAISER,
LEO O'DONNELL.