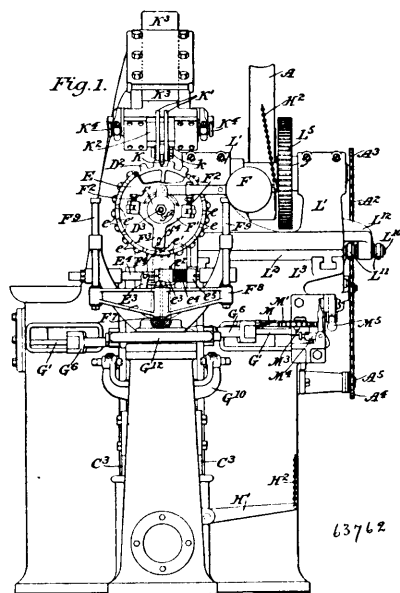


guide plates and means for securing said end portions adjustably to the vertical portions of said first named guide plates, substantially as described.

# **No. 63,762. Gear Cutting Machine.**

(Machine pour tailler les engrenages.)



Charles De Los Rice, Hartford, Connecticut, U.S.A., 5th September, 1899; 6 years. (Filed 21st November, 1898.)

**Claim.**—1st. A machine for cutting gear teeth, comprising means for supporting a master, and a gear blank to have a movement of rotation about a common axis and to have a lateral movement, a guide for contact with the master, and a weight connected to said master and gear blank to press the master against the guide with a rotative tendency. 2nd. A machine for cutting gear teeth, comprising means for supporting a master, and a gear blank to have a movement of rotation about a common axis and to have a lateral movement, a guide for contact with the master, a weight operatively connected with the master to produce one of said movements, and a cam operatively connected with the master to produce the other of said movements. 3rd. A machine for cutting gear teeth, comprising means for supporting a master, and a gear blank to rotate about a common axis and to move laterally, a guide plate the working surface of which is a true plane, and means to press the working surface of the master against the working surface of the guide plate with a rotative tendency. 4th. A machine for cutting gear teeth, comprising means for supporting a master, and a gear blank to rotate about a common axis and to move laterally, a guide plate the working surface of which is a true plane, means to press the working surface of the guide plate with a rotative tendency, and a cutter, the working surface of which is a true plane lying in the plane of the working surface of the guide plate. 5th. A machine for cutting bevel gear teeth, comprising means for supporting a master and a gear blank to rotate about a common axis and to swing about an axis intersecting the first-named axis, a guide plate the working surface of which is a true plane, lying in the plane of said intersecting axis, and means to press the working surface of the master against the working surface of the guide plate with a rotative tendency. 6th. A machine for cutting bevel gear teeth comprising means for supporting a master and a gear blank to rotate about a common axis and to swing about an axis intersecting the first-named axis, a guide plate the working surface of which is a true plane lying in the plane of said intersecting axis, means to press the working surface of the master against the working surface of the guide plate with a rotative tendency, and a cutter the working surface of which is a true plane lying in the plane of the working surface of the guide plate. 7th. A machine for cutting bevel gear teeth, comprising a holder for a master, and gear blank rotatable on its own axis, a carrier for said holder and with which it is movable about an axis intersecting the axis of the holder, a stationary guide for contact with the master and a cutter. 8th. A machine for cutting bevel gear teeth, comprising a holder for a master and gear blank rotatable on its own axis, a carrier for said holder and with which it is movable about an axis intersecting the axis of the holder, a stationary guide for contact with the master, means to press the master against the guide, and a cutter. 9th. A machine for cutting bevel gear teeth, comprising a holder for a master and gear blank rotatable on its own axis, a carrier for said holder and with which it is movable about an axis intersecting the axis of the holder, a stationary guide

for contact with the master, means to press the master in either direction against the guide, and a cutter. 10th. A machine for cutting bevel gear teeth, comprising a spindle to which the master and gear blank are secured, a carrier for said spindle and with which it is movable about an axis intersecting the axis of the spindle, a stationary guide for contact with the master, and a cutter with its working face in the same plane with the working face of the guide and said intersecting axis. 11th. A machine for cutting gear teeth, comprising a spindle to which the master and the gear blank are secured and rotatable on its own axis, a carrier having bearings for said spindle, a stationary guide for contact with the master, a cutter with its working face in the same plane with the working face of the guide and said intersecting axis, and a weight operatively connected to said spindle to impart a rotative tendency thereto. 12th. A machine for cutting gear teeth, comprising a spindle to which the master and the gear blank are secured and rotatable on its own axis, a carrier having the bearings for said spindle, a stationary guide for contact with the master, a cutter with its working face in the same plane with the working face of the guide and said intersecting axis, a step secured frictionally to said spindle, and a weight arranged to bear upon said step. 13th. A machine for cutting gear teeth, comprising a spindle to which the master and the gear blank are secured and rotatable on its own axis, a carrier having bearings for said spindle, a stationary side for contact with the master, a cutter with its working face in the same plane with the working face of the guide and said intersecting axis, a plate secured to said spindle and having two steps, one on each side of the axis of the spindle, and a weighted arm pivoted between the steps and arranged to bear on either step. 14th. A machine for cutting gear teeth, comprising a spindle to which the master and the gear blank are secured and rotatable on its own axis, a carrier having bearings for said spindle, a stationary guide for contact with the master, a cutter with its working face in the same plane with the working face of the guide and said intersecting axis, a step secured to said spindle, a weight arranged to bear upon said step, and means to lift the weight from the step. 15th. A machine for cutting gear teeth, comprising a spindle to which the master and the gear blank are secured and rotatable on its own axis, a carrier having bearings for said spindle, a stationary guide for contact with the master, a cutter with its working face in the same plane with the working face of the guide and said intersecting axis, a step secured to said spindle, a weight arranged to bear upon said step, and a cam and intermediate devices to lift the weight from the step. 16th. A machine for cutting gear teeth, comprising a spindle to which the master and the gear blank are secured and rotatable on its own axis, a carrier for said spindle, eccentric bushings for said spindle mounted rotatably on said carrier, a stationary guide for contact with the master, and a cutter. 17th. A machine for cutting gear teeth, comprising a spindle to which the master and the gear blank are secured and rotatable on its own axis, a carrier having bearings for said spindle, an adjustable friction shoe bearing on said spindle, a stationary guide for contact with the master, and a cutter. 18th. A machine for cutting bevel gear teeth, comprising a spindle in which the master and the gear blank are secured and rotated on its own axis, a carrier movable about an axis intersecting the axis of the spindle and having bearings for said spindle, a stationary guide for contact with the master, and a cutter. 19th. A machine for cutting bevel gear teeth, comprising a spindle to which the master and the gear blank are secured and rotatable on its own axis, a carrier movable about an axis intersecting the axis of the spindle and having bearings for the spindle, a stationary guide for contact with the master, a weight arranged to bear upon said spindle at one side of its axis, and a cutter. 20th. A machine for cutting bevel gear teeth, comprising a spindle to which the master and the gear blank are secured and rotatable on its own axis, a carrier movable about an axis intersecting the axis of the spindle and having bearings for the spindle, a stationary guide for contact with the master, a weight arranged to bear upon said spindle at one side of its axis, means to lift said weight, and a cutter. 21st. A machine for cutting gear teeth, comprising a holder for a master and a gear blank rotatable on its own axis, a stationary guide for contact with the master, a cutter, a work or master-controlling weight connected to said holder, indexing mechanism connected to said holder, and a connection between said weight and said indexing mechanism. 22nd. A machine for cutting gear teeth comprising a holder for a master and a gear blank rotatable on its own axis, a stationary guide for contact with the master, a cutter, a work or master controlling weight frictionally connected to said holder, indexing mechanism connected to said holder, and a connection between said weight and said indexing mechanism. 23rd. A machine for cutting gear teeth, comprising a holder for a master and a gear blank rotatable on its own axis, a stationary guide for contact with the master, a cutter, a plate secured to the holder and having a step and an arm, a weight to bear upon said step, and indexing mechanism engaged by said arm. 24th. A machine for cutting gear teeth, comprising a holder for a master and a gear blank rotatable on its own axis, a stationary guide for contact with the master, a cutter, an indexing wheel secured to said holder and having notches, a plate secured to the holder frictionally and having a step and an arm, a latch carried by said arm to engage said notches and a weight to bear upon said step. 25th. A machine for cutting gear teeth, comprising a holder for a master and a gear blank rotatable on its own axis, a stationary guide for contact