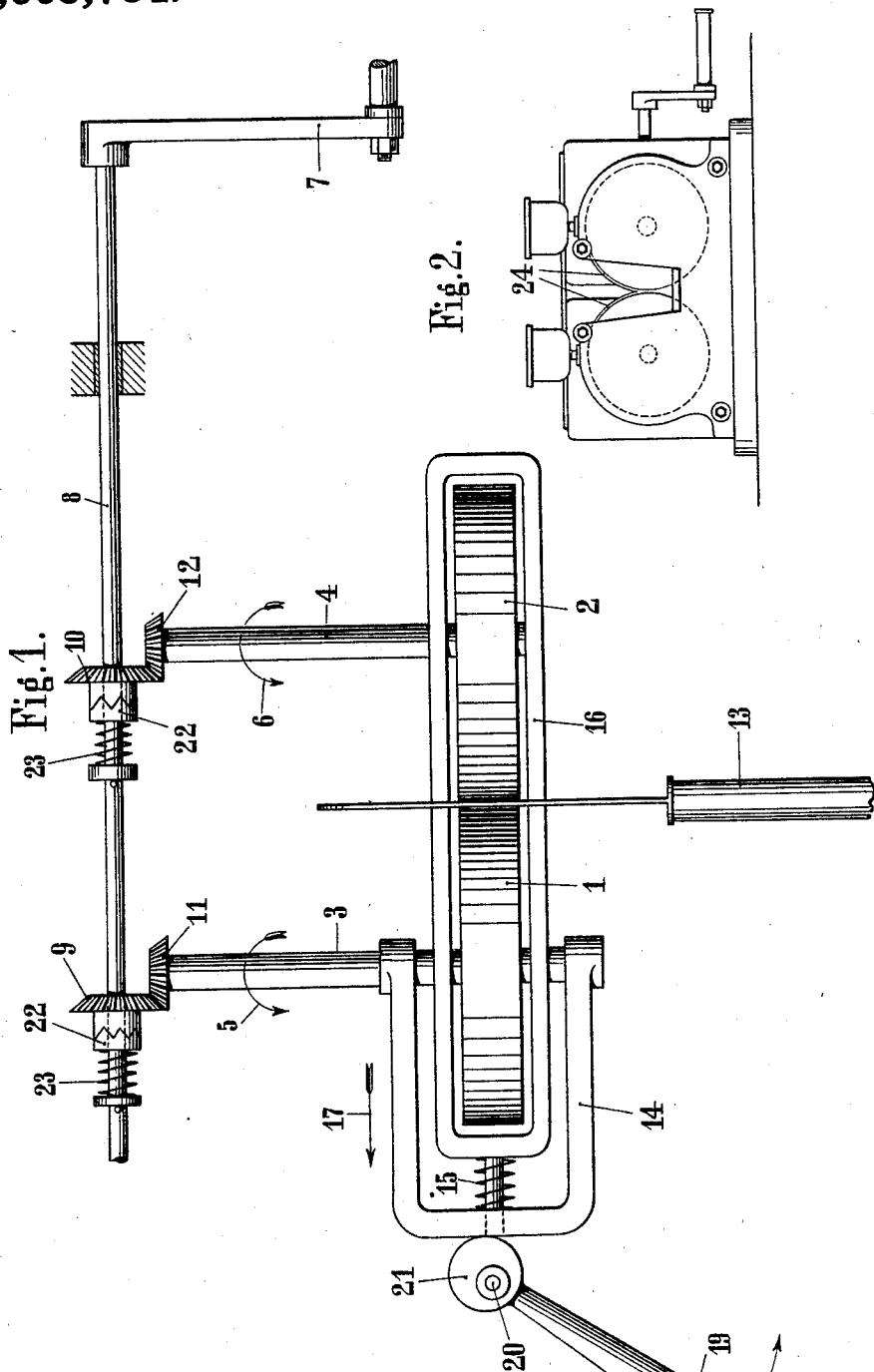


C. W. MODEL.
KNIFE CLEANING MACHINE.
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1,005,734.

Patented Oct. 10, 1911.



Witnesses:

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Inventor:
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Model
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UNITED STATES PATENT OFFICE.

CARL WILHELM MODEL, OF FEUERBACH-STUTTGART, GERMANY.

KNIFE-CLEANING MACHINE.

1,005,734.

Specification of Letters Patent.

Patented Oct. 10, 1911.

Application filed October 14, 1910. Serial No. 587,127.

To all whom it may concern:

Be it known that I, CARL WILHELM MODEL, a subject of the King of Wurttemberg, residing at Feuerbach-Stuttgart, in the Kingdom of Wurttemberg, in the German Empire, have invented certain new and useful Improvements in and Relating to Knife-Cleaning Machines; 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.

The present invention relates to that class of knife cleaning machines, in which two knife cleaning wheels, rollers or frames are provided, located symmetrically with respect to one another in a framework and having their cleaning surfaces kept pressed against one another. With knife cleaning machines of this description as at present constructed, the wheels have been driven in opposite directions, so that the knives when inserted between the surfaces of the rollers and in contact with such rollers, have been pressed around by the moving rollers, bearing heavily upon the rests provided for the backs of the knives. This tendency for the motion of the roller to carry the knives with it is so strong especially in the case of large machines, that it often happens that injury is done to the back or handle of a knife, or that the rest rapidly wears away by reason of the pressure of the back of a knife upon it. This pressure of the knife upon the rest during cleaning fulfils no useful purpose, for the cleaning depends upon the pressure of the cleaning rollers at right angles to the surface of the knife. It follows therefore that if it were possible, while maintaining the pressure of the cleaning rollers upon the surface of the knives during cleaning to prevent the motion of the rollers forcing the knives downward and pressing the blades and handles upon the rests, an important advantage would be secured.

The present invention relates to a new form of knife cleaning machine in which the aforesaid drawbacks are avoided by the special construction and mounting of the knife cleaning rollers. The knife cleaning rollers, disks or frames are driven, not as has hitherto been the case in opposite directions to one another, but in the same direction so that the knives inserted between the roughened surfaces of the rollers, disks or frames are subjected to an upward force

through the friction of one roller and to a downward force through friction of the other, and as these two forces are equal or approximately equal to one another and opposite in direction the knives when inserted in any position between the rollers bear on the rests without being carried by the rollers in the direction of their motion. With this construction of cleaning rollers provision must be made so that when the knife is removed from between the rollers the rollers can be separated from one another so that they are no longer in contact, or if they are pressed toward one another by a spring that they can be drawn apart, the object being that the motion of the rollers may not rub away the coverings at the place of contact or use up the coating of cleaning material to no purpose.

The accompanying drawing shows by way of example, one method of carrying the invention into practice.

Figure 1 is a plan of a machine showing the cleaning rollers and bevel driving gear. Fig. 2 is a side elevation of the machine drawn to a small scale.

1 and 2 are the knife cleaning rollers which are carried by the axles 3 and 4 and turn in the direction of the arrows 5 and 6, that is in the same direction to one another. The drive is effected by means of a spindle 8 which may be provided with a handle 7, through bevel wheels 9 and 10 which engage with other bevel wheels 11 and 12 on the axles 3 and 4. If the relation of the bevel wheels 9 and 10 to the wheels 11 and 12 is the same, the rollers 1 and 2 are driven with equal speed. It is, however, possible to make the relation between the wheels 10 and 12 different from that between the wheels 9 and 11 so that the roller 2 moves with a somewhat greater or less velocity than the roller 1. In the latter case the knife 13 as soon as it is inserted between the rollers 1 and 2, is pressed upon the rest for the knife with a slight force, corresponding to the difference between the forces exerted by the rollers 1 and 2, but in such a way that any strong pressure, greater than what is required for rapid cleaning or any pressure exceeding what is warranted by the circumstances and likely to lead to wearing away of the rests is avoided.

In order that when the knife 13 is removed from between the cleaning rollers 1 and 2 these rollers shall not remain pressed

against one another, the fork 14 carrying the axle 3 is mounted so as to be controlled by a spring 15, which presses against the framework 16 so that the fork is moved in the direction of the arrow 17, and the rollers 1 and 2 always have a tendency to separate from one another. When the knife is inserted the pressure can be exerted by means of a handle 19 which is in communication with a cam 21, pivoted at 20, which cam moves the fork 14 against the pressure of the spring 15 toward the framework 16.

The driving wheels 9 and 10 on the driving shaft 8 can be attached by means of one way clutches 22, so that when the momentum of rotation passes a certain point the clutching surfaces become disengaged against the pressure of the springs 23. Again, as a further improvement with my new machine and as will be seen from Fig. 2, the free cylindrical surfaces of the cleaning rollers, where they come opposite one another, are covered by means of loose strips extending partly over them, which strips are made of leather or other suitable material. These facilitate the placing of the knives in the proper positions and their adjustment. Moreover, by means of these covering strips when the feeding device for emery is placed in position, the emery is prevented scattering about in lumps, but is

evenly distributed over the whole surface of the cleaning rollers by these strips lying lightly on the surface of the rollers. The covering strips also possess the advantage that the knife can only be introduced vertically and the blade cannot be gripped by the rollers so that accidents are prevented. The covering strips are suitably attached by means of screws to the casing.

What I claim and desire to secure by Letters Patent of the United States of America is:—

A knife cleaning machine comprising in combination, a pair of rotary cleaning members having adjacent coacting peripheral cleaning surfaces, means for rotating said members in the same direction to obtain reverse direction of movement of the adjacent coacting peripheral surfaces of said members with respect to each other, and means supporting said members and exposing the side portions to permit insertion of a knife blade therebetween with the longitudinal axis of the blade in parallel relation with the axes of rotation of said members.

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

CARL WILHELM MODEL.

Witnesses:

CARL CHR. OTTO WETTER.

OTTO EPPLE.