

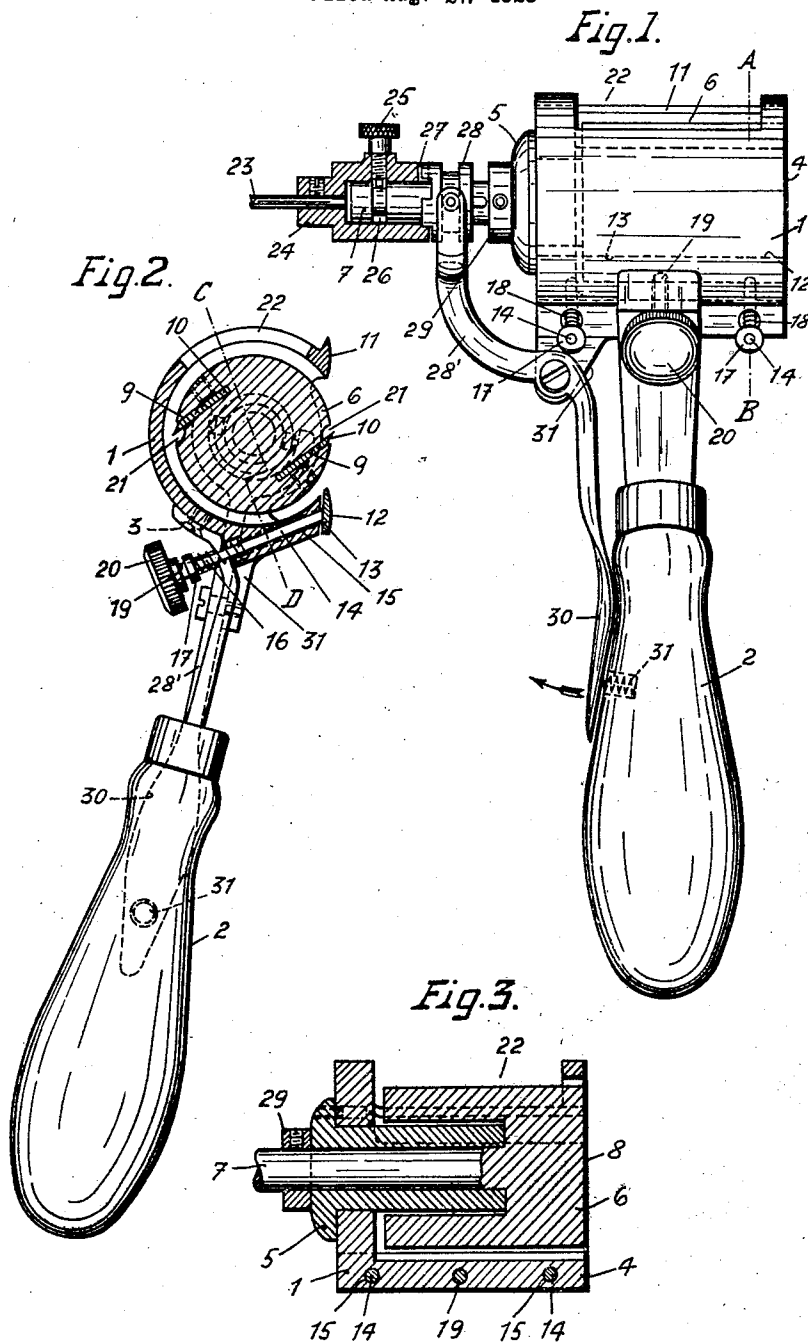
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HAND PLANING MACHINE

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HAND PLANING MACHINE.

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This invention relates to a hand planing machine which can be used for different wood work, the machine being of such shape that it can be employed for working at points of the workpiece which are not easily accessible. The hand planing machine is of very simple construction, handy and compact, so that it will certainly soon be generally adopted by turners, carpenters, coach builders, coopers and others.

The machine, according to the invention, comprises a casing with handle in which casing a knife cylinder of solid cross section is mounted so that it can be rotated from one end by means of a flexible shaft driven from a motor, the other end of the knife cylinder being flush with the corresponding open end of the casing. The casing has two bearing faces for guiding the planing machine upon the workpiece, at least one of said bearing faces being adjustable with regard to the knife cylinder in order to regulate the cutting depth.

An embodiment of the invention is shown, by way of example, in the accompanying drawing, in which

Fig. 1 is a front elevation partly in section.

Fig. 2 is a side elevation partly in section on line A—B of Fig. 1.

Fig. 3 is a longitudinal section on line C—D of Fig. 2.

The planing machine according to the invention comprises a cylinder casing 1 on which a handle 2 is fixed by means of screws 3. The casing 1 is open at one end and in the other closed end a bushing 5 is inserted. In this bushing the axle 7 of a knife cylinder 6 is journaled, said knife cylinder and said axle being made in one piece in order to obtain perfect stability. The knife casing being, with the same object in view, of solid cross section as can be seen from the drawing. The free end 8 of the knife cylinder is flush with the open end 4 of the casing 1 so that the knives 10 mounted in slits 9 of this end 8 of the knife cylinder may be utilized for their entire length.

The open end 4 of the casing 1 can be moved at the planing along a ruler or the like, and the machine can be used for planing surfaces which stand at an angle to the planing surface.

The casing 1 has two bearing faces 11, 12 standing approximately tangentially to the knife cylinder and designed to guide the machine on the work-piece at the planing. At

least one of these bearing faces 11, 12 is adjustable on the casing 1 with regard to the knife cylinder, said bearing 12 being arranged on a plate 13 which, by means of screw bolts 14 screwed into bores 15 of the casing, is adjustably mounted on said casing. On the free threaded end 16 of each of said bolts 14 a ring 17 is fixed against which bears a spring 18 the other end of which bears against a shoulder in the enlarged portion or bore 16. These springs 18 have the tendency to press the plate 13 against the casing. An adjusting screw 19 has a head 20 at the outer end, the inner end bearing against the plate 13. When the head 20 is rotated the plate 13 is moved away from the casing 1 in opposition to the action of the spring 18 and adjusted with regard to the knife cylinder or the knives 10 of said cylinder in order to regulate the depth at which the knives 10 cut into said workpiece.

The knives 10 are inserted into slits 9 of the solid knife cylinder in which cylinder grooves 21 of semi-circular cross section are arranged underneath the cutting edges of the knives. These grooves 21 are designed to collect the chips which can drop out through a segment-shaped opening 22 of the casing 1 said opening extending over the entire length of the knife cylinder.

The planing machine is driven by means of a flexible shaft 23 from a motor, said shaft being connected at the one end with the outer end of the axle 7 by any convenient means which can be easily detached. In Fig. 1 a sleeve 24 is shown which is rotatably connected with the flexible shaft 23 and on which an adjusting screw 25 is mounted adapted to engage with an annular groove 26 of axle 7.

On the inner end of the sleeve 24 claws 27 are arranged adapted to be brought in engagement with the claws of a clutch element 28 mounted on the axle 7 so that it can be moved in longitudinal direction but not rotate with said axle. The shifting of the clutch element 28 is controlled by a lever 28' pivotally mounted on an extension 31 of the casing 1 and to be operated by hand. The enlarged end 30 of said lever 28' is in contact with the handle 2. A spring 31 embedded in the handle 2 bears against said end 30 of the lever and acts upon it in the direction of the arrow. The axle 7 is thus held out of engagement with the flexible shaft 23. When the handle 2 is gripped

the clutch element 28 is automatically brought in engagement with the claws of the sleeve 24 whereby the axle 7 is coupled with the flexible shaft 23, the elements being automatically uncoupled as soon as the handle 2 is released.

Fig. 1 shows the clutch coupling in the coupling position e. g. in the position which it assumes when a pressure is exerted upon the end 30 of the lever 28'.

When the claws of the elements 24, 28 are in engagement the knife cylinder is coupled with the flexible shaft 23. With the aid of the lever 28' the knife cylinder can be coupled or uncoupled at will during the working. The flexible shaft 23 is preferably driven from an electromotor.

The handle 2 of the planing machine might be mounted on the casing 1 by means of a ball joint so that it can be oscillated with regard to said casing but secured in any adjusted position so that, for working on not easily accessible workpieces, the handle might be brought into the most favorable position and secured in this position. An adjusting collar 29 keyed on axle 7 prevents displacement of said axle in the bushing 5 in axial direction.

The planing machine or the casing of the same is of such construction that portions of workpieces which are not easily accessible or curved can be planed.

I claim:

1. A hand planing machine comprising in combination a casing open at one end, a handle on said casing, a knife cylinder of solid cross section, mounted on said casing, an axle of said knife cylinder journaled in the closed end of said casing so that its end projects from said casing, a flexible shaft driven from a suitable source of power, means for coupling said flexible shaft with said axle of the knife cylinder, two bearing faces on said casing tangentially to the same for guiding said machine on the workpiece one of said bearing faces being adjustable and consisting of a plate, bolts engaging

with said casing fixedly holding said plate on said casing, and springs acting upon said bolts to press said plate against said casing.

2. A hand planing machine comprising in combination a casing open at one end, a handle on said casing, a knife cylinder of solid cross section, mounted in said casing, an axle made in one piece with said knife cylinder and journaled in the closed end of said casing so that its other end projects from said casing, a flexible shaft driven from a suitable source of power, means for coupling said flexible shaft with said axle of the knife cylinder, two bearing faces on said casing tangentially to the same for guiding said machine on the workpiece one of said bearing faces being adjustable and consisting of a plate, bolts engaging with said casing fixedly holding said plate on said casing, and springs acting upon said bolts to press said plate against said casing, and an adjusting screw in the casing for adjusting the position of said plate.

3. A hand planing machine comprising in combination a cylinder casing open at one end and of minimum size, a handle on said casing, a knife cylinder of solid cross section, mounted in said casing so that its end is flush with the open end of said casing, an axle made in one piece with said knife cylinder and journaled in the closed end of said casing so that its end projects from said casing, a flexible shaft driven from a suitable source of power, a clutch mechanism for coupling said flexible shaft with said axle of the knife cylinder, a lever for operating said clutch mechanism, an extension of said casing in which said lever is pivotally mounted, an enlarged lower extension of said lever bearing against said handle, a spring in said handle acting upon said extension of said lever, a fixed bearing face on said casing, and an adjustable bearing face on said casing for guiding said machine on the workpiece.

In testimony whereof I affix my signature.
GOTTFRIED JEHL.