Feb. 9, 1937. E. E. OLSON 2,069,922

CHANNELING MACHINE

Filed March 14, 1936 2 Sheets-Sheet 1

Fig. 1.

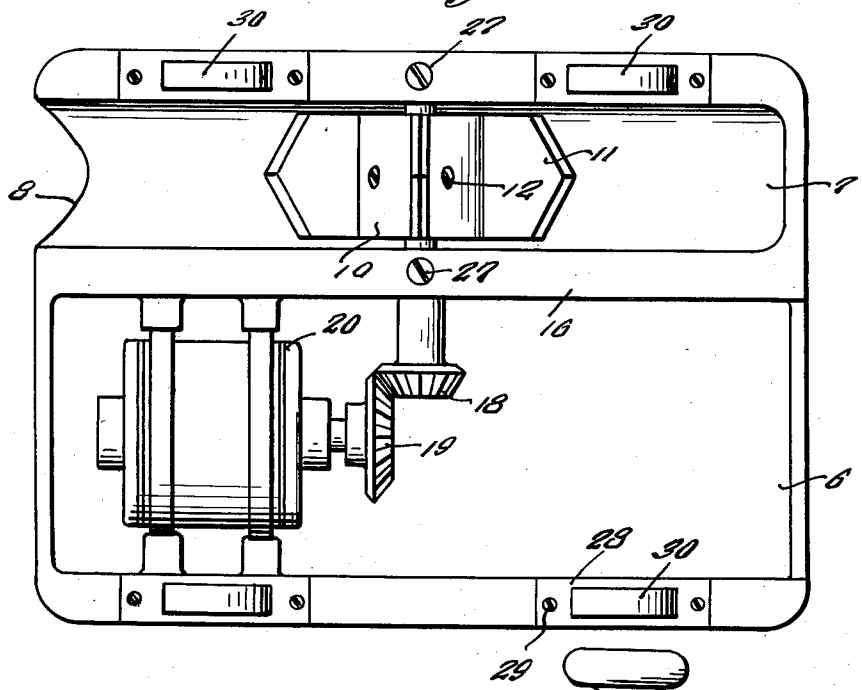


Fig. 2.

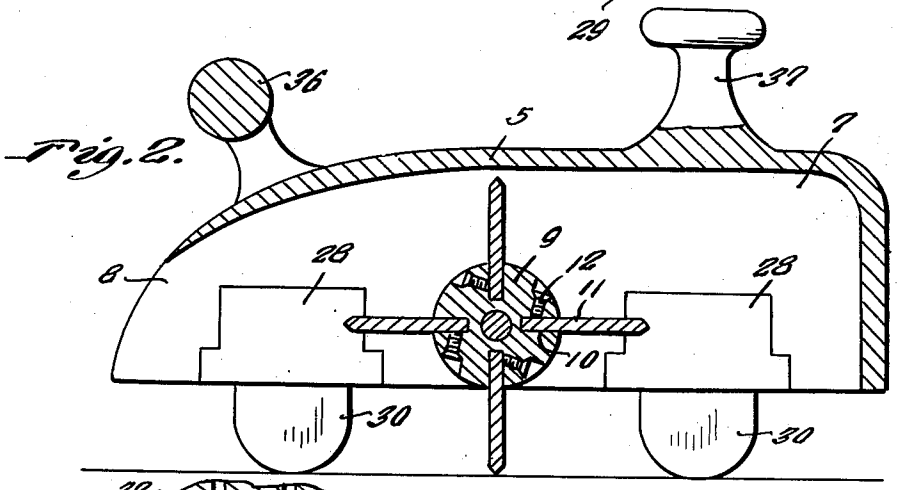
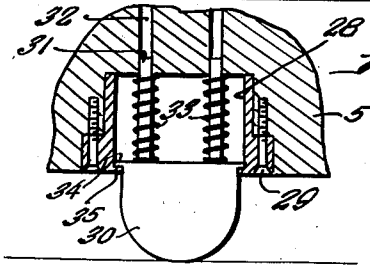


Fig. 5.



Inventor

Eric E. Olson

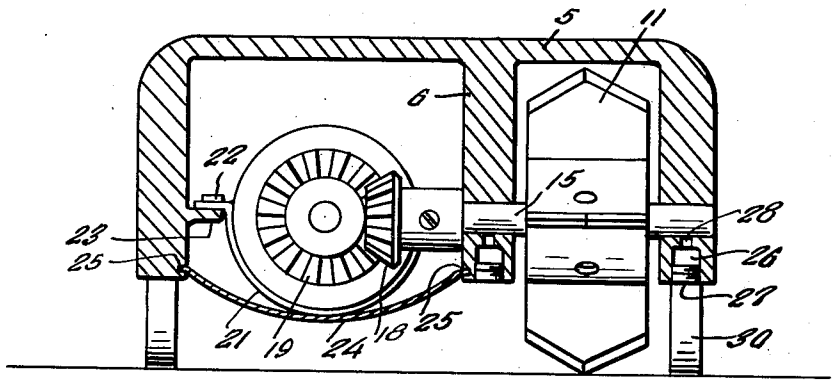
By Clarence A. O'Brien and Hyman Berman Attorneys

Feb. 9, 1937. E. E. OLSON 2,069,922

CHANNELING MACHINE

Filed March 14, 1936 2 Sheets-Sheet 2

Fig. 3.



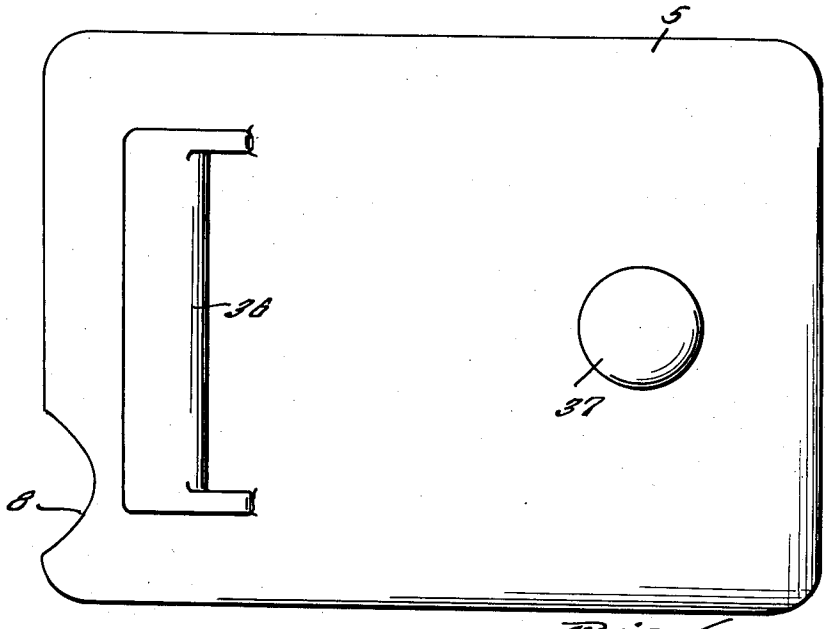


Fig. 4.

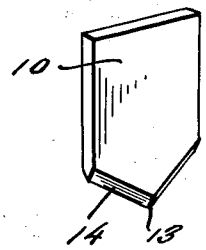


Fig. 6.

Inventor

Eric E. Olson

By Clarence O'Brien and Hyman Berman Attorneys

Patented Feb. 9, 1937 2,069,922

UNITED STATES PATENT OFFICE

2,069,922

CHANNELING MACHINE

Eric E. Olson, New York, N. Y.

Application March 14, 1936, Serial No. 68,945

5 Claims. (Cl. 262—20)

This invention relates to machines or devices for channeling work, and an object of the present invention is to provide a machine particularly designed for channeling concrete structures, building units and the like.

An object of the invention is also to provide a device for the purpose above mentioned in the form of a hand device which can be readily and easily manipulated; and further to provide in such a device means for controlling the cutting depth of the channeling blade by regulating the pressure on the tool.

The invention together with its objects and advantages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a bottom plan view of the tool with a cover plate for the motor, gearing, etc., removed.

Figure 2 is a sectional view through the device.

Figure 3 is a transverse sectional view through the device.

Figure 4 is a top plan view of the device.

Figure 5 is a fragmentary detail sectional view showing the resilient mounting for the skids forming part of the invention, and

Figure 6 is a perspective view of a cutting or channeling blade.

Referring to the drawings by reference numerals it will be seen that the device, in the preferred embodiment thereof is constructed in the form of a hand tool and comprises a casing 5 of suitable shape and dimension. The casing 5 is preferably formed from a single casting to provide a relatively wide compartment 6 and a relatively narrow compartment 7, the compartments running for substantially the full length of the device and opening through the bottom of the hood or casing.

At one end of the hood a portion thereof is removed to provide a discharge 8 for dust or the like which would otherwise tend to accumulate within the chamber or compartment 7.

Arranged within the chamber or compartment 7 is a cutting or channeling wheel which consists of a hub member 9 having radial slots 10 which receive the butt end of blades 11 that are secured to the hub through the medium of set screws 12 in a manner clearly shown. At their working ends the blades 11 are preferably sharpened to a point 13 and present cutting edges 14 that converge at the point 13 as shown in Figure 6. It will however be understood that any suitable type of cutting or channeling blade may be used.

The hub 9 of the channeling wheel is suitably secured on a shaft 15 that extends transversely of the chamber or compartment 7 and has its respective opposite ends suitably channeled in an outer side of the hood or casing 5 and the partition wall 16 common to the compartments 6 and 7.

One end of the shaft 15 extends into the compartment 6 and secured to said end of the shaft is a bevel gear 18 which is in mesh with a bevel gear 19 on the armature shaft of an electric motor 20.

Electric motor 20 is suspended within the chamber 6 through the medium of saddle straps or brackets 21 which at their respective ends are bolted or otherwise secured as at 22 to lugs or the like 23 provided on the opposed walls of the chamber 6. From the above it will be seen that drive will be transmitted from the motor 20 through the gearings 19, 18 to the shaft 15 for revolving the cutting or channeling wheel, and obviously as the wheel revolves the pointed knife edges of the blades will cut into the work for cutting a channel or groove into the work.

To protect the motor 20 and the gearing there is provided for the bottom open side of the chamber or compartment 6 a transversely curved closure plate 24 the edges of which are slidably received in grooves 25 provided therefor in the opposed walls of the compartment 6 so that the cover plate 24 may be readily slid into and out of position as will be clear from a study of Figure 3.

For lubricating purposes there are provided in the lower edges of the walls in which the ends of shaft 15 are journalled grease sockets 26 provided with closure plugs 27 and ports 28 through the latter, it being apparent, the grease passes into the bores receiving the ends of the shaft 15 for maintaining the ends in a well lubricated condition.

The outer side walls of the hood or casing 5 are notched and removably secured within the notches are frames or housings 28 secured through the medium of screws 29 as clearly shown in Figure 5.

Skids 30 have a working fit within the casings or housings 28 and at their inner ends are provided with stems 31 that work in suitable guide bores 32 provided in said side walls of the hood 5. Springs 33 are disposed about the pins 31 and act on the skids 30 to normally urge the same outwardly and into engagement with the surface of the work.

Outward or downward movement of the skids 30 is limited by reason of the projections 34 on the skids and the projections 35 that project in-

wardly from opposite ends of the frames 28 at the lower ends of the frame as also shown in Figure 5.

It will thus be seen that the skids 30 support the hood 5 above the work and at the same time will permit the tool to be easily slid along the work during the cutting or channeling operation.

Also by pressing downwardly on the tool the hood 5 and associated parts will move downwardly relative to the skids 30 and in this way the cutting depth of the blades 11 may be regulated at will and in accordance with at a hand pressure on the tool.

Also to facilitate the handling of the tool there is provided on the top of the hood 5 adjacent one end thereof the transversely extending hand grip 36, and the relatively opposite end thereof a hand grip post 37.

It will be apparent that a tool of this character can be cheaply and economically constructed and will be inexpensive to maintain and can be readily used as a hand tool for channeling work such as stone, masonry, wood, or the like.

Having thus described the invention, what is claimed as new is:

1. A channeling tool of the character described comprising a hollow hood having its open side facing downwardly, a channeling wheel rotatably mounted within the hood and having the blades thereof adapted to project outwardly through the open bottom of the hood to engage the work, a prime mover mounted within the hood, power transmission means connecting the prime mover with the wheel for driving the latter, skids supporting the hood at opposite sides of the hood, and resilient means connecting the skids and hood in a manner to resiliently support the hood for vertical movement relative to the skids to control the digging depth of the blade of the channeling wheel.

2. A channeling tool of the character described comprising a hollow hood having its open side facing downwardly, a channeling wheel rotatably mounted within the hood and having the blades thereof adapted to project outwardly through the open bottom of the hood to engage the work, a prime mover mounted within the hood, power transmission means connecting the prime mover with the wheel for driving the latter, and skids at opposite sides of the hood for supporting the latter above the work, said skids having pins projecting therefrom, and said hood at said sides having sockets receiving said pins in a manner to permit vertical movement of the hood relative to the skids to thereby control the digging depth of the cutter wheel blades.

3. A channeling tool of the character described comprising a hollow hood having its open side facing downwardly, a channeling wheel rotatably mounted within the hood and having the blades thereof adapted to project outwardly through the open bottom of the hood to engage the work, a prime mover mounted within the hood, power transmission means connecting the prime mover with the wheel for driving the latter, and skids at opposite sides of the hood for supporting the latter above the work, said skids having pins projecting therefrom, said hood at said sides having sockets receiving said pins in a manner to permit vertical movement of the hood relative to the skids to thereby control the digging depth of the cutter wheel blades, and spring devices interposed between said skids and the edges of the sides of the hood for yieldably supporting the hood in raised position with respect to the skids.

4. A channeling tool of the character described comprising a hollow hood having its open side facing downwardly, a channeling wheel rotatably mounted within the hood and having the blades thereof adapted to project outwardly through the open bottom of the hood to engage the work, a prime mover mounted within the hood, power transmission means connecting the prime mover with the wheel for driving the latter, skids at opposite sides of the hood for supporting the latter above the work, said skids having pins projecting therefrom, said hood at said sides having sockets receiving said pins in a manner to permit vertical movement of the hood relative to the skids to thereby control the digging depth of the cutter wheel blades, spring devices interposed between said skids and the edges of the sides of the hood for yieldably supporting the hood in raised position with respect to the skids, and handle means on the top of the hood to facilitate handling of the tool.

5. In a channeling machine of the class described, skids to facilitate movement of the channeling machine over the surface to be channeled, a hood, resilient means supporting the hood from the skids in a manner to permit vertical movement of the hood relative to the skids, and channeling mechanism confined within said hood; the depth of the channel being formed by said mechanism being controllable at will and dependent upon the spacing of the hood vertically with reference to the surface being worked upon.

ERIC E. OLSON.