G. F. HENDERSON.

SURFACING MACHINE FOR FINISHING METAL SURFACES.

APPLICATION FILED APR. 7, 1920.

1,370,441. Patented Mar. 1, 1921.

Fig. 1.

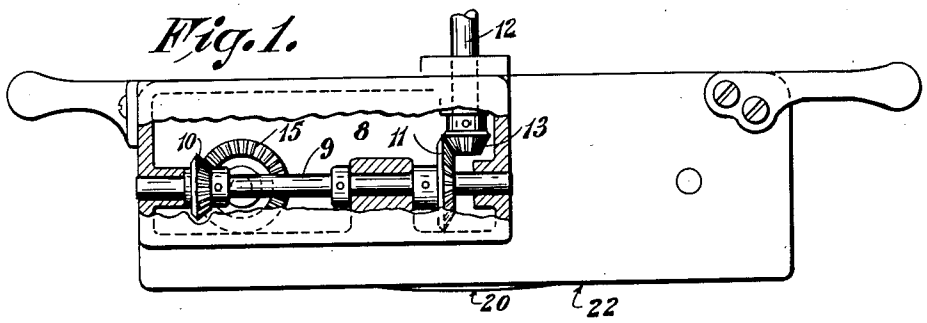


Fig. 2.

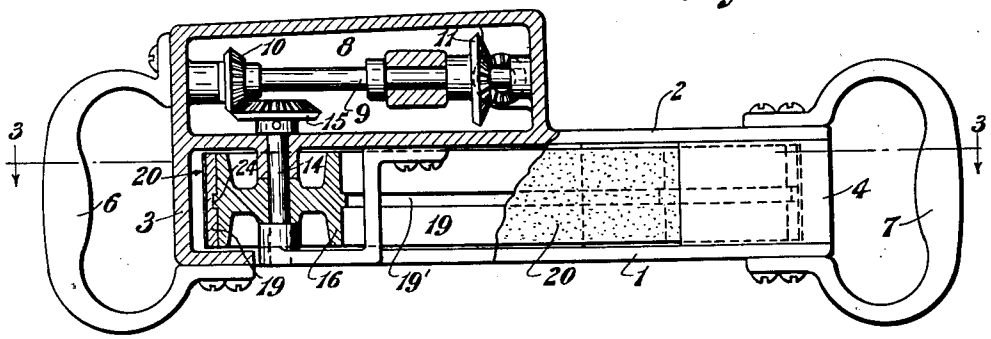


Fig. 3.

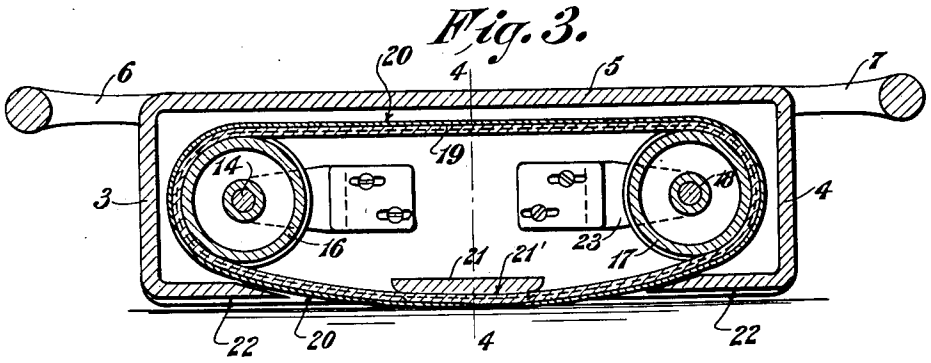
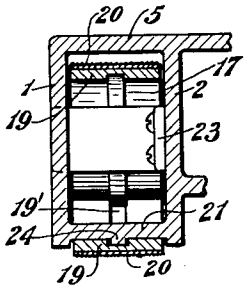


Fig. 4.



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SURFACING-MACHINE FOR FINISHING METAL SURFACES.

1,370,441. Specification of Letters Patent. Patented Mar. 1, 1921.

Application filed April 7, 1920. Serial No. 371,987.

To all whom it may concern:

Be it known that I, GEORGE F. HENDERSON, a citizen of the United States of America, residing at Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Surfacing-Machines for Finishing Metal Surfaces, of which the following is a specification.

This invention relates to improvements in machines for finishing metal surfaces, and particularly for finishing the metal surfaces of automobile bodies.

An object of the invention is to provide a machine which can be readily operated by a single person; a further object is to provide a machine which will permit the operating abrasive or grinding surface of the machine to be applied to comparatively small surfaces of the body which is being finished; a further object is to provide a structure which will cause only a short length or portion of the finishing belt to be brought into contact with the metal body. Other objects and nature of the improvement will appear in the body of the specification and will be particularly pointed out in the claims.

Referring to the drawings:

Figure 1 is a side elevational view showing a portion of the inclosing casing partially broken away to illustrate the interior driving mechanism.

Fig. 2 is a top plan view, partly broken away and showing the pulley for supporting the belt of emery cloth or sand-paper.

Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 2 showing the means for holding the belt so that it projects beyond the runners or lower surface of the inclosing casing, and

Fig. 4 is a sectional view on the line 4—4 of Fig. 3.

Referring to the drawings in detail: 1 and 2 designate the opposite sides, 3 and 4 the ends, and 5 the top of the casing. The handles for holding the machine while in use are indicated at 6 and 7. 8 designates a compartment within which is located the shaft 9 having the bevel gears 10 and 11 secured thereto. The motive power is applied by means of the shaft 12 which may be connected with any suitable source of power, as an electric motor. This shaft carries a bevel gear 13 that meshes with the gear 11 on the shaft 9. Located at the left hand end of the casing is a shaft 14 to which the bevel gear 15 is secured. On the shaft 14 is a pulley 16, and located at the opposite end of the casing is a second pulley 17 running loosely on the fixed shaft 18. A belt 19 passes around these pulleys, which belt is provided with suitable abrasive material, as emery cloth, 20, which is secured thereto by gluing or otherwise. Extending transversely of the casing and at the lower edge thereof is a fixed plate or block 21 having a curved bottom surface 21′ and against or in contact with which the inner surface of the abrasive carrying belt 19 engages for the purpose of maintaining the belt extended beyond the lower or runner surface 22 of the casing. Suitable means for adjusting the pulley 17 is provided by the supporting bracket 23.

The inner surface of the belt 19 is formed with a groove 19′ to engage a rib or projection 24 on the pulleys for holding it in place while in operation. If desired, the faces of the pulleys may have the usual crown or curvature and the belt retained in place by placing a rib on the fixed plate or block 21 to receive the groove 19′.

In operation, or use, the operator grasps the handles 6 and 7 and holds the surface of the moving emery cloth against the metal of the body to be finished or smoothed down. Since only a short length of the emery cloth projects beyond the surface 22 the operator is able to finish surfaces of small curvature. An important feature resides in the fact that only a small motive power is required since only a small cutting surface of the emery cloth is in use. A further important feature is that the belt 19 and the emery cloth cannot be bent inward when in use since the block 21 will firmly retain the belt in contact with the surface being finished.

From this description it will be seen that I have produced a portable machine for finishing and smoothing metal surfaces, as automobile bodies, and one which will effectively perform its work with the expenditure of low motive power, which is important when bodies of aluminum are to be finished since the abrasive material cuts into the soft aluminum deeper than into steel. The fiber of the aluminum renders the finishing operations difficult if large surfaces are finished at a time.

What I claim is:

1. In a machine for finishing metal sur-

faces, the combination, of a casing, pulleys therein, a compartment adjacent the casing, gearing in the compartment and connected to the pulleys, a grooved belt engaging the pulleys, and means for normally and constantly holding a short length of the belt below the bottom or runner surface of the casing, said belt having its exterior surface provided with an abrasive substance.

2. A polishing machine having in combination, an inclosing casing having a centrally disposed opening in its bottom portion, the remaining bottom portion of the casing forming runners, pulleys located within the casing and at the opposite ends of the same, adjustable brackets for supporting the pulleys, a transversely located piece extending across the opening and having a longitudinally disposed rib on its lower surface, an endless belt supported on the pulleys and formed with a groove on its inner surface to receive the rib for maintaining the belt in position, said belt having its outer surface provided with an abrasive surface, a compartment formed integral with the casing and at one side and end of the same, a longitudinally disposed shaft in the compartment, said shaft having operative connection with one of the belt supporting pulleys for operating the same.

GEORGE F. HENDERSON.