

972,548.

Fig. 1.

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Atty's

# UNITED STATES PATENT OFFICE.

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HANDLE FOR PNEUMATIC DRILLS.

972,548.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AXEL LÖVEDAHL, a citizen of the United States, and a resident of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Handles for Pneumatic Drills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in reciprocating drills and particularly to an improved handle and means for attaching the same to the body of the drills.

The object of the invention is to reduce the shock due to the action of the tool to a minimum.

As illustrated in the drawings, my improved handle is shown in connection with a valveless pneumatic drill, but it will be apparent that it may be applied to any type of reciprocating drill.

In the drawings:—Figure 1 is a side elevation of a pneumatic drill provided with my improvement showing the handle and the upper end of the drill body in section. Fig. 2 is a transverse section through Fig. 1 on the line 2—2 thereof. Fig. 3 is a cross-section through the handle on the line 3—3 thereof.

A indicates the body or barrel of the drill and B, the handle. The handle comprises a gripping member B<sup>1</sup> and attaching members B<sup>2</sup>, B<sup>2</sup> being formed integrally with the gripping member at each end thereof. The attaching members B<sup>2</sup>, B<sup>2</sup> are provided with projecting shanks C, C which are preferably cylindrical in form. Said shanks are attached to the body A of the drill by means of lugs or ears D which are formed on opposite sides of said body at the end thereof. Said ears are counterbored from either end as indicated at C<sup>1</sup>, C<sup>2</sup> to leave a shoulder d which is bored to loosely fit the shank C. The shank C is made of larger diameter near its handle end, as indicated at e, to form a shoulder d<sup>1</sup>. The part e fits loosely within the counterbore C<sup>1</sup>. Within the counterbore C<sup>2</sup> fits a collar d<sup>2</sup> which loosely engages the smaller diameter of the shank and is retained in place by a nut F secured to the end of the shank which is screw-threaded for the purpose, as indicated at e<sup>2</sup>. Within

the counterbores are located cushion members G, g which are made of cork or other cushioning material, the cushioning member G engaging between the shoulder d<sup>1</sup> on the shank and shoulder d separating the counterbores of the ear and the cushioning member g engaging between said latter mentioned shoulder and the collar d<sup>2</sup>.

It will be noted that by the construction described, the shock due to the upward thrust of the reciprocating member of the tool is taken up by the cushion member G while the shock due to the downward thrust of said reciprocating member is taken up by the cushion member g, the two together thus relieving the vibratory result of said shocks in the handle. To still further ease the action on the hand of the operator, I prefer to provide the gripping member B<sup>1</sup> with a cushioning envelop and to this end I form the gripping member of a metal web b of cross-shaped section and cast or otherwise form about this web a cushioning envelop made of soft fabric, rubber or other suitable material.

To lock the nut F in place and thereby prevent it from becoming loose under the action of the drill, a pin is passed through a hole f<sup>1</sup> in the nut and through a corresponding hole through the screw-threaded part of the shank e<sup>2</sup>. Several holes f<sup>1</sup> are provided in the nut to provide for its proper adjustment with reference to the collar d<sup>2</sup>. Any other convenient means for locking said nut in place may be adopted.

While I have shown and described herein certain details of mechanical construction, it is to be understood that they may be modified in various ways without departing from the spirit of my invention and that I do not limit myself to them except as pointed out in the appended claims.

I claim as my invention:—

1. In combination with a drill body, laterally extending ears formed at the rear end of said body, each of said ears being counterbored longitudinally from its opposite ends, an apertured ring formed rigidly with said ears, separating said counterbores, a handle for said drill body provided with longitudinally extending shanks with screw-threaded ends, one for each of said ears, each shank having a flange engaging within the counterbore at the rear end of said ear, and forward of said shoulder being adapted to

fit within said apertured ring, a cushioning member located between said apertured ring and the flange on said shank, an apertured collar surrounding the forward end of said shank and fitting within the forward end of said ear, a cushioning member located between said apertured ring and said apertured collar, and a lock nut screwed upon the threaded end of said shank and engaging the lower face of said apertured collar.

2. In a reciprocating drill, in combination with the barrel, laterally extending ears formed at the end of said barrel, each ear being provided with an opening there-through, an internally extending shoulder within said ear, a handle provided with projecting shanks, each of said shanks engaging within one of said ears on the barrel, an annular shoulder formed on each shank above the said shoulder within said ear, a collar surrounding the shank below said shoulder within the ear, cushioning members bearing respectively between said shoulders and between one of said shoulders and said collar, and means for locking said parts in position.

3. In combination with a drill body, ears formed on said body, said ears being counterbored from their opposite ends, a shoulder separating said counterbores, a handle

provided with projecting shanks, one for each of said ears, said shanks being provided with shoulders, and fitting within said ears, cushioning members surrounding said shanks and arranged one between the shoulder on the shank and the shoulder in the ear, and a second cushioning member arranged below the shoulder in the ear, a collar on the shank in engagement with said last named cushioning member, and means for locking the parts in position.

4. In combination with a drill body, ears formed on said body, said ears being counterbored from their opposite ends, shoulders separating said counterbores, a handle provided with projecting shanks, one shank engaging within each of said ears, fixed members located on said shanks above and below the shoulders in said ears, and cushioning members surrounding said shanks and engaging between said shoulders in the ears and said members fixed on said shanks.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses.

AXEL LEVEDAHL.

Witnesses:

W. H. HEALY,  
S. T. SHAFER.