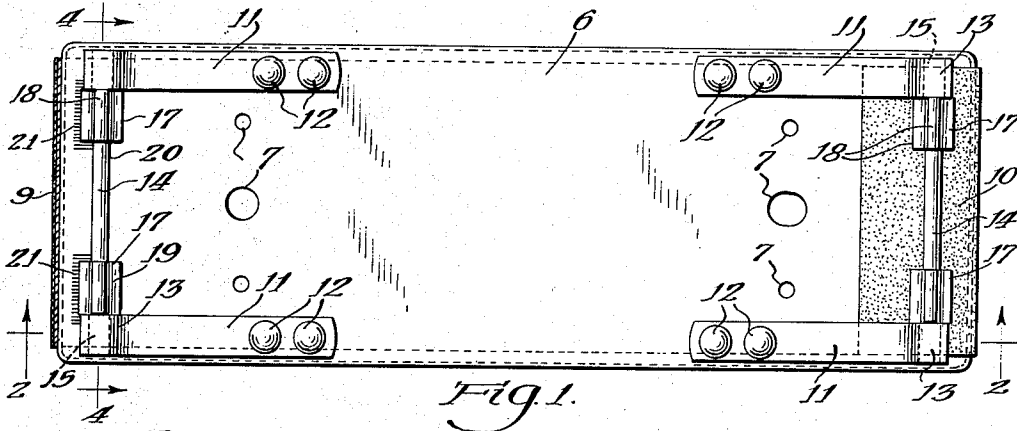
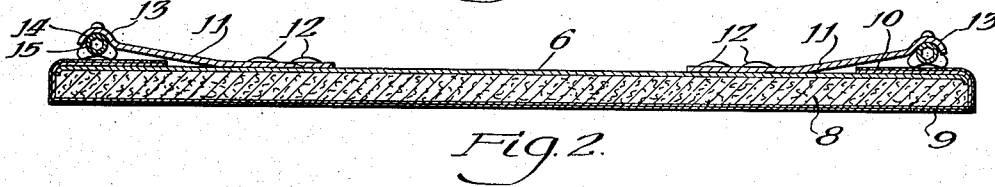
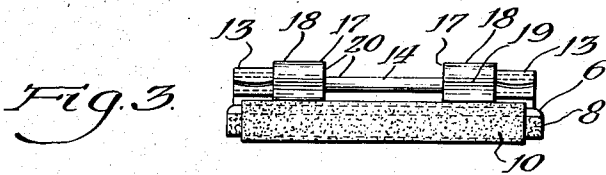
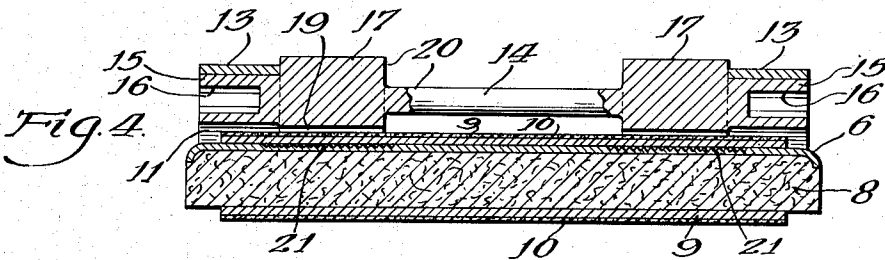
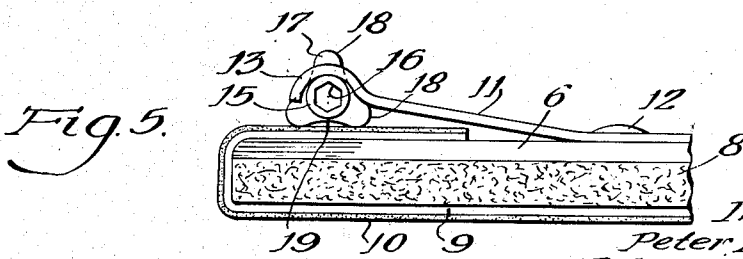


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GRIPPING AND TENSIONING DEVICE FOR
RUBBING PAD ABRADING SHEETS
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Inventors:
Peter Zasadny
Bohumil J. Zitek
By: Schneider, Meriam, Hoffman & Brady
Attorneys

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2,519,620

GRIPPING AND TENSIONING DEVICE FOR
RUBBING PAD ABRADING SHEETS

Peter Zasadny and Bohumil J. Zitek, Chicago, Ill.,
assignors, by mesne assignments, to Porter-
Cable Machine Company, Syracuse, N. Y., a
corporation of New York

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4 Claims. (Cl. 51—189)

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This invention relates to an improved gripping and tensioning mechanism for attaching a strip of flexible material, such as sandpaper or a polishing cloth, to a backing plate or base-member.

The primary object of the invention is to provide a simple, strong and easily operated gripping device which is of light weight but rugged construction.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which—

Figure 1 is a top plan view, showing the invention applied to a sanding pad; Fig. 2, a vertical sectional view, taken as indicated at line 2—2 of Fig. 1; Fig. 3, an end elevational view; Fig. 4, a transverse sectional view, taken as indicated at line 4—4 of Fig. 1; and Fig. 5, an enlarged fragmentary side elevational view, similar to Fig. 2.

In the embodiment illustrated, a base-member or backing plate 6, preferably is of metal and may have holes 7 for attaching the member to a driving machine. The pad is shown with a felt pad 8, which may be cemented to the plate 6, and serves as a resilient backing for a strip of sandpaper 9 having an abrasive coating 10.

At each end of the backing member, a pair of leaf springs 11 have their front ends secured to the backing plate by means of rivets 12, and extend cantileverwise towards the ends of the base member. The free ends of the springs have inverted U-shaped portions 13 which yieldingly press the gripping shaft 14 against the plate.

The gripping shaft has outwardly extending trunnions 15 which are engaged by the springs 11, and preferably are hollow, as indicated at 16, to receive a turning wrench. The shaft has circumferentially spaced gripping projections 17, which extend axially so that any one or two may make line contact with the strip 9. Preferably, the gripping projections are spaced 120° apart, and the arms have rounded ends, as indicated at 18, and the material is cut out between adjacent gripping projections to form a concavity, as indicated at 19. The gripping projections may extend longitudinally from one trunnion to the other, but preferably the central portion is cut away, as indicated at 20, to reduce weight and facilitate introducing the ends of the strip into engagement with the gripping projections of the shaft. Preferably, the backing plate 6 has a series of small longitudinal grooves 21 beneath the gripping portion of its shaft, as shown in Figs. 1 and 3, to prevent lateral shifting of the strip 9.

To operate the device, a wrench is placed in the socket 16 and the shaft turned until it is standing on one of the three gripping projections. The end of the flexible strip is then pressed in-

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wardly until it strikes the shaft, and the shaft is then rotated by means of the wrench until the strip is fed inwardly a desired distance. The other end of the flexible strip is then fed into the other gripping member in the same way, and either of the shafts may be turned until a desired amount of tension is applied to the strip. The springs hold the shaft snugly against the strip of material, and the irregular gripping projections of the shafts prevent their being rotated in the opposite direction until force is applied by means of the wrench.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, for some modifications will be obvious to those skilled in the art.

We claim:

1. A gripping and tensioning mechanism for a strip of flexible material comprising: a base-member to which a strip of flexible material is to be attached; a rotatable shaft having circumferentially spaced, axially extending gripping projections disposed so that two of said gripping projections may engage the strip simultaneously; and a spring yieldingly urging said shaft towards said base-member.

2. A device as specified in claim 1, in which the gripping projections are spaced 120° apart and the circumference of the shaft is undercut between said adjacent gripping projections so that any one or two of them may be rotated into line contact with the strip.

3. A device as specified in claim 1, in which the shaft is provided with trunnions extending outwardly from the gripping projections, and the spring has two leaf-type arms, each arm having one end secured to the base-member and the free end extending rearwardly cantileverwise and having an inverted U-shaped portion engaging a trunnion of said shaft.

4. A device as specified in claim 1, in which the shaft is provided with trunnions extending outwardly from the gripping projections, said trunnions being hollow to provide sockets for a wrench, and the gripping projections are divided longitudinally into two parts by a centrally disposed cut-away portion.

PETER ZASADNY.
BOHUMIL J. ZITEK.

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