

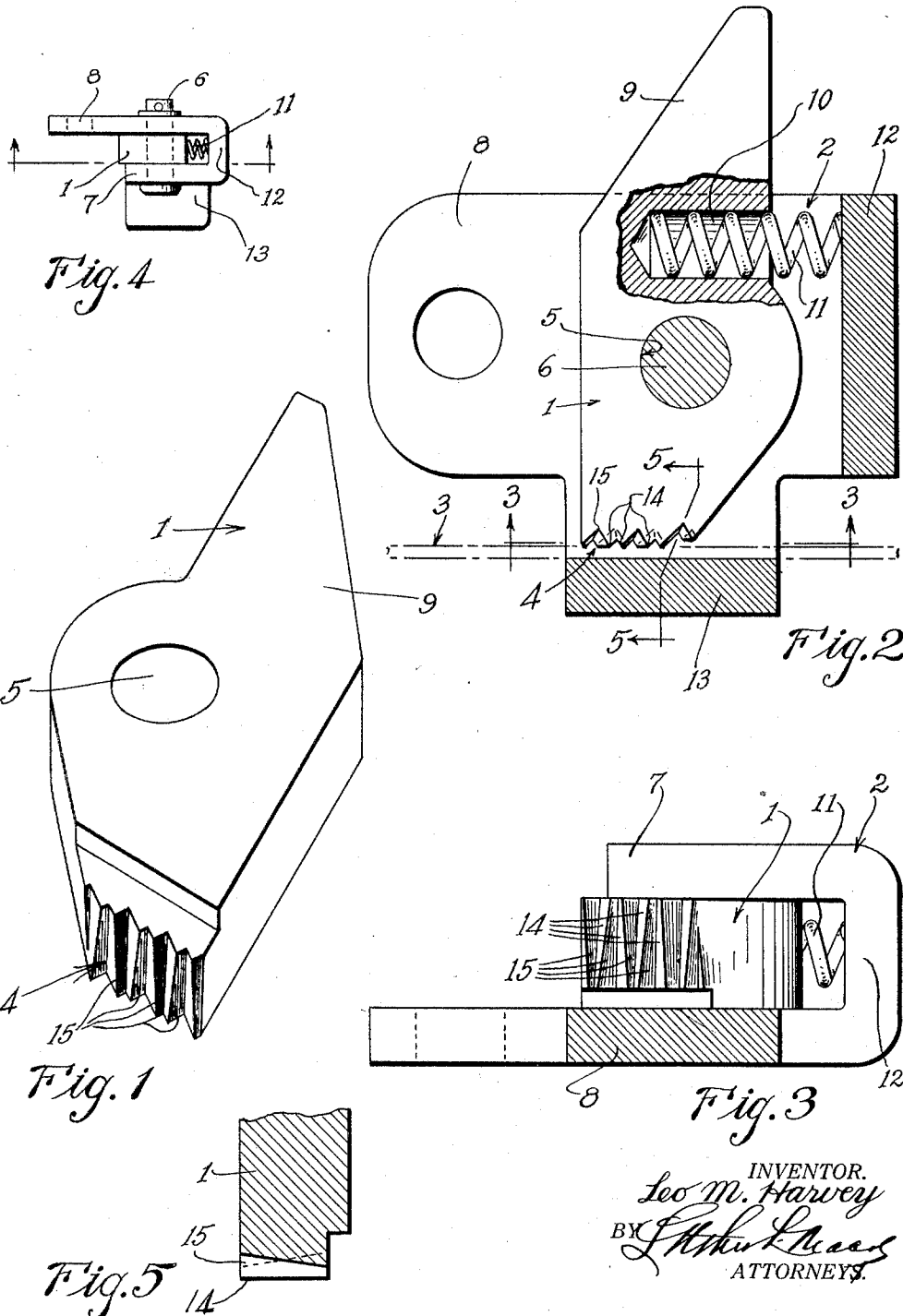
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WIRE OR BAND GRIPPING DEVICE

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WIRE OR BAND GRIPPING DEVICE

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This invention relates to and has for an object the provision of an improved gripping device for holding metal bands particularly but not necessarily of flat cross section in tension or in fixed positions for different purposes, as for instance, in a box strapping machine wherein the band is held in tension around a box or the like while the ends of the band are tied or otherwise secured together.

An important feature of my invention is in the provision of a suitably mounted member having a gripping surface with teeth arranged transversely thereof with their edges in a common plane and diagonally disposed on said surface so as to provide grooves between the teeth which are of gradually increasing width and depth from one to the other side of the gripping surface. My invention, therefore, is distinguished from grippers having teeth with edges which are inclined from one to the other ends.

Such a device is particularly useful for the purpose mentioned for the reason that the teeth being disposed at angles relative to each other and the grooves being of increasing width and depth from one to the other side, provide means whereby dirt, grit, scrapings, and the like, may not accumulate in the grooves between the teeth and thereby render the gripper ineffective.

Other objects may appear as the description progresses.

In the accompanying drawings I have shown a preferred form of invention, subject to modification within the scope of the appended claims without departing from the spirit thereof.

In said drawings,

Fig. 1 is an enlarged perspective view of a gripping member embodying my improvements.

Fig. 2 is a view of the same operatively mounted in a suitable supporting device for engagement with a metal wire or band.

Fig. 3 is a bottom view of the gripping member and a sectional view of the supporting device therefor, as seen on line 3—3 of Fig. 2.

Fig. 4 is a top plan view of the gripper

and supporting device on a substantially reduced scale.

Fig. 5 is a fragmentary section of the gripping member on line 5—5 of Fig. 2.

My improvements may be embodied in any suitable form of gripping member, as at 1, and said member may be operatively supported in any form of holder or supporting bracket, as at 2, so that the member 1 may yieldably and frictionally engage a flat metal band, as at 3, for the purpose of permitting the movement of the band 3 over the gripping surface of the member 1 in a given direction, but preventing it from being moved in an opposite direction.

While I have shown a specific form of gripping member 1 and a suitable form of holder 2, it will be understood that the form of both of said devices may be altered to meet different conditions. The device as shown, however, consists of an integrally formed member 1 made of steel and hardened and provided on one extremity with a serrated gripping surface 4. When the member 1 is pivotally mounted as shown in Fig. 2, said member may be provided with a bore adapted to receive a pin 6 forming a fulcrum for the member 1. Said pin 6 may be supported in the bracket or supporting member 2.

In the form of holder shown said pin is supported in the opposite and spaced portions 7 and 8 of a J-shaped bracket between which the member 1 is pivotally held. Said member 1 may have an upwardly extended portion 9 with a bore 10 therein adapted to receive a compression spring 11 which is held in compression between the end of the bore 10 and a transverse portion 12 of member 2. The bracket also has a horizontal portion 13 underlying the gripping surface 4 of member 1 and but slightly spaced therefrom so that the band or wire 3 may be inserted between the gripping surface 4 and the portion 13 of the bracket.

The unit composed of the gripper 1 and the bracket 2 may form a part of any machine or mechanism wherein it is necessary to grip or hold metal wires or bands 3.

As shown particularly in Figs. 1 and 3, the

gripping surface 4 is composed of a series of transverse teeth 14, 14 etc., the operative edges of which are in a common plane and alternate with a series of grooves 15, 15 etc. The adjacent teeth of the gripping surface are disposed at acute angles to each other instead of in right angular lines transversely of the gripping surface. Thus the grooves 15 between the teeth are formed of gradually increasing width and depth from one side of the gripper to the other.

Due to this peculiar arrangement of teeth and grooves in the gripping surface of the member 1, I have found that the grooves will not cake up or fill with scrapings from the metal, grit, dirt, etc., which, when combined with oil or grease, will ultimately fill grooves otherwise made and render the gripper practically useless. In my improved gripper the tendency of the foreign matter to accumulate in the grooves is reduced to a minimum, and the succeeding operations of the gripper will tend to move any accumulating matter in the grooves laterally where it will be expelled from the open ends of the grooves at one or the other sides of the gripper. The teeth engage the band 3 thruout their entire length instead of only at one or more points as when the teeth edges are inclined, and are accordingly of maximum efficiency for gripping the band 3.

The form of gripper described herein may be more readily cleaned than in other types of gripping devices.

Other advantages and benefits accruing from the use of my improvements will be readily understood by those skilled in the art.

What I claim is:

1. A gripping device having a gripping surface formed of a plurality of teeth disposed at angles with respect to each other with their edges in a common plane, and grooves alternating with said teeth of gradually increasing width from one to the other extremity thereof, said grooves and teeth being continuous from one to the other side of the gripping surface.

2. A gripping device having a gripping surface provided with a plurality of teeth with their edges in a common plane and formed so that adjacent teeth are non-parallel relative to each other, and grooves alternating with said teeth of gradually increasing width from one to the other extremity thereof, said grooves being open at the opposite sides of the gripping device.

3. A gripping device provided with a gripping surface having a plurality of transversely disposed teeth with their edges in a substantially common plane and angularly disposed with respect to each other.

4. A gripping device provided with a gripping surface having a plurality of transversely disposed teeth with their edges in a substantially common plane and angularly

formed with respect to each other, and grooves alternating with said teeth and open at their opposite extremities, for the purpose described.

5. A gripping device provided with a gripping surface having a plurality of transversely disposed teeth with their edges in a substantially common plane and angularly formed with respect to each other, and grooves alternating with said teeth and open at their opposite extremities, said grooves being of gradually increasing width from one to the other of the extremities thereof, for the purpose described.

6. A gripping device provided with a gripping surface having a plurality of transversely disposed and angularly formed teeth with their edges in a substantially common plane, and grooves alternating with said teeth and open at their opposite extremities, said grooves being of gradually increasing width and depth from one to the other end thereof, for the purpose described.

7. A gripping device provided with a gripping surface, and having a plurality of teeth transversely disposed thereon with their edges in a common plane, and alternating grooves between said teeth, adjacent teeth being oppositely inclined from a transverse median line between such pair of teeth, and grooves alternating with said teeth and open at their opposite ends.

8. A gripping device provided with a gripping surface, and having a plurality of teeth transversely disposed thereon with their edges in a common plane, and grooves between said teeth alternating with said teeth and gradually increasing in width from one to the other sides of the gripping surface.

9. A gripping device provided with a gripping surface, and having a plurality of teeth transversely disposed thereon with their edges in a common plane, and alternating grooves between said teeth, said teeth being formed with gradually increasing cross sectional areas from end to end thereof, and grooves alternating with said teeth and open at their opposite ends, said grooves being of gradually increasing width and depth from one to the other ends thereof.

10. A gripping device having a gripping surface formed of a plurality of teeth disposed transversely thereon with their edges in a common plane of gradually increasing cross section from one to the other end thereof, grooves alternating with said teeth of gradually increasing width from one to the other extremity thereof, said teeth and said grooves extending entirely across the gripping surface.

11. A gripping device having a gripping surface formed of a plurality of teeth disposed transversely thereon with their edges in a common plane of gradually increasing cross section from one to the other end there-

of, grooves alternating with said teeth of gradually increasing width from one to the other extremity thereof, and means for operably supporting said gripping device relative to the work to be gripped thereby, said teeth and grooves corresponding in length to the width of the gripping surface.

12. A gripping device having a gripping surface formed of a plurality of teeth disposed transversely thereon with their edges in a common plane of gradually increasing cross section from one to the other end thereof, grooves alternating with said teeth of gradually increasing width from one to the other extremity thereof, said teeth and said grooves being continuous from one to the other side of the gripping surface, means for operably supporting said gripping device relative to the work to be gripped thereby, and means for yieldably holding the gripping device in engagement with the work whereby the work may be moved in one direction and may not be moved in another direction relative to the gripping device.

13. A gripping device provided with a gripping surface, and having a plurality of teeth transversely disposed thereon with their edges in a common plane, and grooves between said teeth alternating with said teeth and gradually increasing in depth from one to the other side of the gripping surface.

14. A gripping device provided with a gripping surface, and having a plurality of teeth transversely disposed thereon with their edges in a common plane, and grooves between said teeth alternating with said teeth and gradually increasing in depth and width from one to the other side of the gripping surface.

LEO M. HARVEY.