Oct. 31, 1961 F. A. JOHNSON 3,006,089

RIPPER POINT ASSEMBLY

Filed July 27, 1959

Fig. 1.

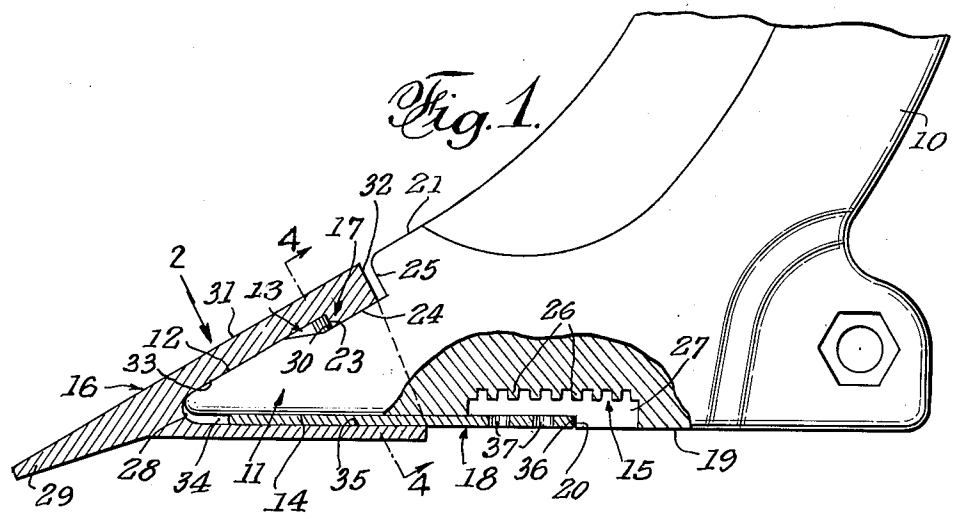



Fig. 2.

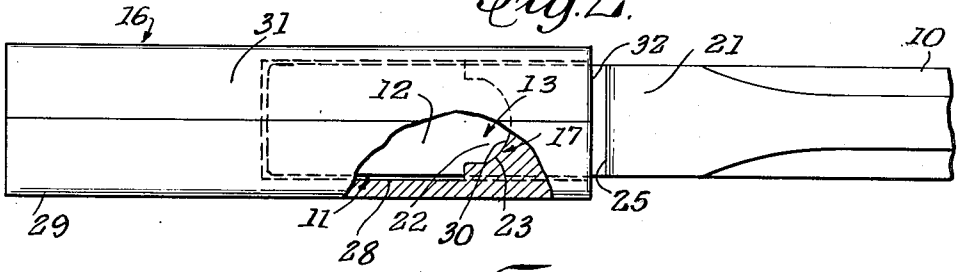



Fig. 3.

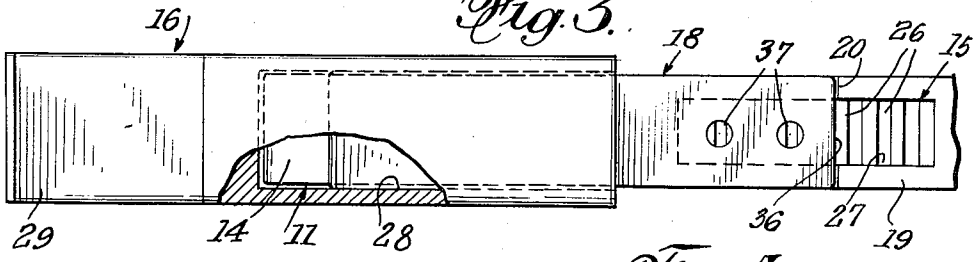



Fig. 4.

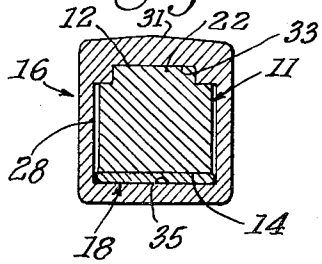
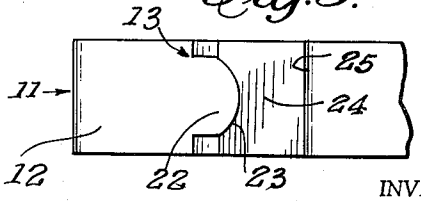



Fig. 5.




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# RIPPER POINT ASSEMBLY

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This invention relates to a ripper point assembly.

An object of the present invention is to provide a novel and improved construction for firmly, yet removably, mounting a ripper point on a ripper shank or like support whereby replacement of a point, when worn, is accomplished in a facile manner.

Another object of the invention is to provide such an assembly in which the point or tooth is automatically centered on the tine.

The invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawing merely shows and the following description merely describes, one embodiment of the present invention, which is given by way of illustration or example only.

In the drawing, like reference characters designate similar parts in the several views.

FIG. 1 is a broken side elevational view of a tine or shank provided with a replaceable tooth that is held in operative position by means according to the present invention.

FIG. 2 is an enlarged top plan view as seen in the direction of the arrow 2 of FIG. 1, parts of the structure being shown in section.

FIG. 3 is a similarly enlarged bottom plan view, partly in section.

FIG. 4 is a cross-sectional view as taken on the line 4—4 of FIG. 1.

FIG. 5 is a fragmentary plan view of that portion of the shank that is engaged with the ripper point.

The drawing shows a shank or tine 10 such as may be moved in a direction toward the left of FIG. 1. Said shank is usually mounted on and drawn by a tractor or other towing vehicle in the direction above indicated.

According to the present invention, said shank is provided with a forwardly directed projection or toe 11 of triangular form, the upper face 12 thereof being provided with ripper point locating means 13 and the lower face 14 being provided with means 15 adapted to be engaged by a prying tool, as will later be described.

The present ripper point 16 is fitted onto said triangular toe 11 and is provided with means 17 that is complementary to and has interfitting engagement with the locating means 13. A shim 18 is employed to lock the assembly of point and shank toe.

The lower face 14 of said toe 11 is upwardly offset from the lower face 19 of the shank to form a forwardly facing abutment 20. Said upper toe face 12 is offset below the normal level of the upper face 21 of the toe.

The locating means 13 is shown as a centrally disposed and integrally formed projection 22 that has an upper face that is a continuation of the face 12 and a rearwardly directed face 23 that is shown as convexly curved but which may be concavely curved or triangularly shaped so as to serve as a centering means, as will be seen. Said projection is upwardly offset from a level



24 that is below the level of face 12 and defines a shoulder 25 with the face 21.

The means 15 is shown as a set of transverse teeth or projections 26 formed in the bottom of a cavity 27 that opens partly on the lower face 14 and partly on the face 19. The abutment 20, therefore, is interrupted by said cavity and is provided on the flanking side portions of the shank.

The ripper point 16 is preferably triangular in shape and is provided with a triangular recess or seat 28 that loosely receives the toe 11 so that the earth-ripping end 29 of the point is directed forwardly of said toe 11.

The means 17 that interfits with the locating means 13 comprises a seat 30 that is complementary to and engages with the projection 22 of the toe, as may be clearly seen in FIG. 2. When so interfitted, the upper face 31 of the point 16 forms a general extension of the shank face 21. In practice, the seat 28 is of such size that the point may be placed over the toe 11 with the end face 32 of the point against the shoulder 25. Because of the loose fit, the top portion of the point may be dropped or moved so as to bring the surface 33 of the point recess 28 into flatwise engagement with the toe face 12. Now, the means 13 and 17 can be engaged to effect centering of the point on the toe by forwardly sliding said point. It will be evident that a space 34 will be formed between the toe face 14 and the face 35 of the recess or seat 28.

Now, it is a simple matter to drive the shim 18 into said space to firmly wedge between said faces 14 and 35, as shown. Said shim may advantageously comprise a flat strip of spring steel of a width to fit the seat 28 and of a thickness to wedge the parts as above explained. The length of said strip may be such that when the same is in wedging position, the rearward end 36 of the strip will fall or snap into place forward of the abutment 20. Thus, the assembly of the parts is retained.

If the point becomes worn and is required to be removed and replaced, it is a simple matter to insert a tool such as a strong screw driver between the strip end 36 and the teeth 26 above described. In this manner, the portion of said strip adjacent abutment 20 may be flexed away from the face 14 of the toe. While so flexed, a suitable bar-like tool may be inserted into one of the holes 37 in strip 18 and so engaged with said teeth 26 as to gradually pry the shim out of wedging engagement. After the shim end 36 has passed by the abutment 20, the prying operation may be continued, without the first tool, until the shim is withdrawn. Now, the loose point may be removed so that a new point may be mounted to replace the same. Removal of the shim is possible with but one prying tool, since the same may be used to flex the shim and withdrawal prying is instituted.

While the foregoing specification illustrates and describes what I now contemplate to be the best mode of carrying out my invention, the construction is, of course, subject to modification without departing from the spirit and scope of my invention. Therefore, I do not desire to restrict the invention to the particular form of construction illustrated and described, but desire to cover all modifications that may fall within the scope of the appended claims.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A ripper point assembly comprising a forwardly directed projection on a shank or the like, a ripper point having a recess in which said projection loosely extends, interengaged means on the projection and the point to center the latter on the former and to hold the point against forward displacement from the mentioned projection, a wedge shim between the projection and point

and disposed in said recess to lock together said interengaging means to lock the point on the projection, and an abutment on the projection engaged with the outer end of the shim to hold the same against retraction from wedging position.

2. A ripper point assembly comprising a forwardly directed projection on a shank or the like, a ripper point having a recess in which said projection loosely extends, interengaged means on the projection and the point to center the latter on the former, a wedge shim between the projection and point and disposed in said recess to lock the point on the projection, an abutment on the projection engaged with the outer end of the shim to hold the same against retraction from wedging position, said shim having an exposed portion between a tooth-provided recess in the projection and the point and being provided with a hole in said portion, said tooth-provided recess on the side thereof engaged by the shim adapted for a shim-prying tool to be introduced through said hole into engagement with the teeth in said latter recess.

3. In a ripper point assembly, a triangularly-shaped and forwardly projecting toe of a shank or the like, a ripper point having a triangular seat into which said toe loosely fits, said toe having an upper face on which a point-centering projection is provided, said point, in a face of the mentioned seat, being provided with a recess having a shape complementary to the point-centering projection and interfitted therewith and provided with an abutment to engage the projection to hold the point on the toe of the shank, and a wedge shim between the lower face of the projection and the adjacent face of the seat to draw the point in a direction to tightly fit the point-centering projection into the mentioned recess of the point.

4. In a ripper point assembly, a triangularly-shaped and forwardly projecting toe of a shank or the like, a ripper point having a triangular seat into which said toe loosely fits, said toe having an upper face on which a point-centering projection is provided, said point, in a face of the mentioned seat, being provided with a recess having a shape complementary to the point-centering projection and interfitted therewith and provided with an abutment to engage the projection to hold the point on the toe of the shank, and a spring wedge shim between the lower face of the projection and the adjacent face of the seat to draw the point in a direction to tightly



fit the point-centering projection into the mentioned recess of the point, said lower face of the projection being provided with an abutment in the path of retraction of the wedging shim.

5. In a ripper point assembly according to claim 4, pry-engageable teeth formed in the projection and adapted to be reached by a pry introduced through a hole in the shim for flexing the shim out of engagement with said abutment and for retracting said shim from wedging position.

6. A ripper point assembly comprising a forwardly directed triangular projection on a shank or the like, a centering projection having a rearwardly directed abutment face provided on the upper face of the triangular projection, a forwardly directed shoulder provided on said upper face of and rearwardly spaced from the centering projection, a ripper point having a triangular recess loosely fitting the triangular projection, a forwardly directed abutment in a face of said recess and in point-centering engagement with the centering projection, said point having a rearwardly directed end in proximate relation to the forwardly directed shoulder of the triangular projection, and a wedge shim between the lower face of the triangular projection and a face of the recess that is opposed to the face having the forwardly directed abutment, said shim locking together the mentioned centering projection and the forwardly directed abutment in the face of the recess, and shoulder means on the triangular projection to lock the shim against rearward retraction.

7. A ripper point assembly according to claim 6 in which the shim is made of spring metal to be flexible, is in flexed condition, when being introduced into wedging position by sliding engagement over the last-mentioned shoulder means, said wedge automatically snapping into locked position upon moving past said latter shoulder means.

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