# United States Patent

**Buske**

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## [54] PULLING POST BASE


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[21] Appl. No.: **157,505**

[52] **U.S. Cl.** ..... **72/386,** 72/705

[51] **Int. Cl.** ..... **B21d 9/14**

[58] **Field of Search** ..... 72/705, 386, 293; 52/719; 287/49, 51, 92



[56] **References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 3,340,720 | 9/1967 | Chartier | 72/389 |
| 3,050,099 | 8/1962 | Smith | 72/705 |
| 3,141,493 | 7/1964 | Textor | 72/705 |



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[57] **ABSTRACT**

For use with a pulling post of the type used for applying tension via a chain to a damaged automobile, a base having retractable rollers is formed of two V-shape sections pivoted together at their apexes. One of the sections has a post socket. The sections are spring biased to pivot relative to one another and normally form an angle. When tension is applied via the chain, the base sections pivot contra to the spring bias and flatten out against the floor. Thus, all slack is removed from the chain before strong pulling force is applied.


**11 Claims, 4 Drawing Figures**

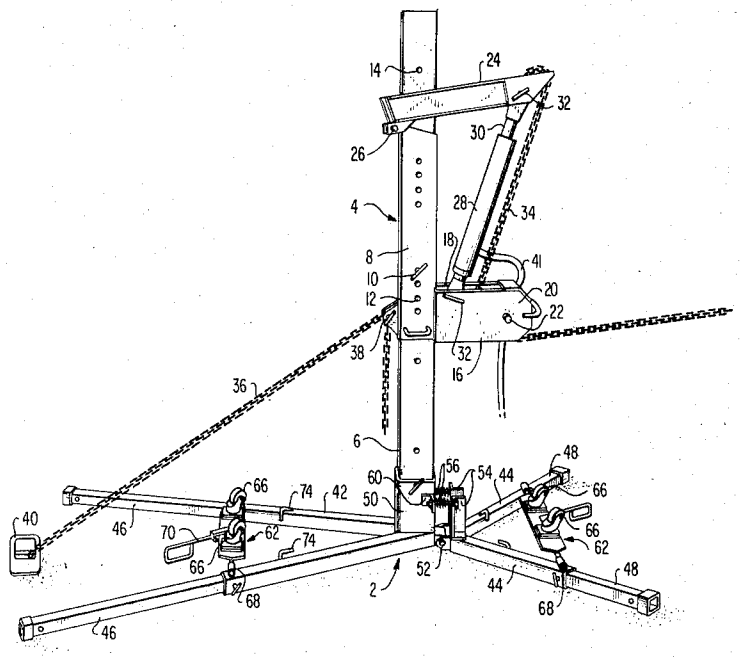


FIG. 4

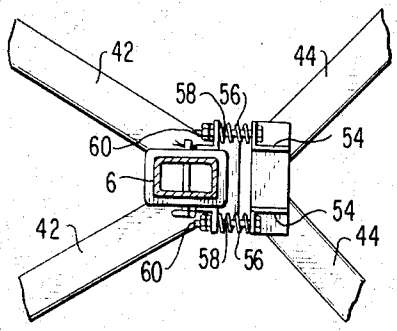



FIG. 1




FIG. 2

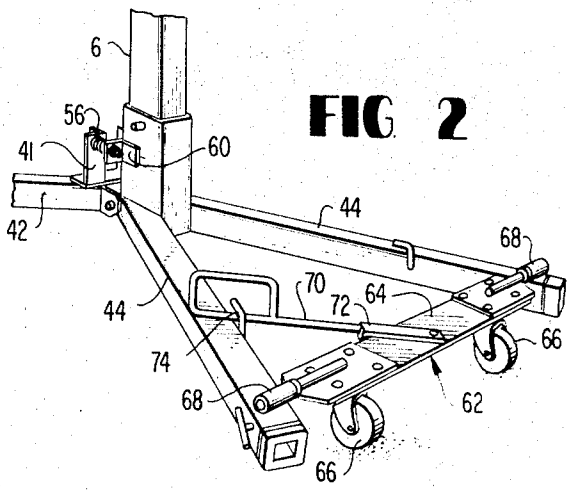
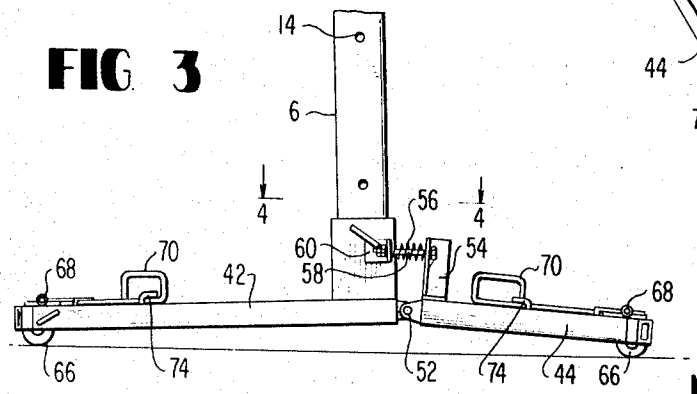



FIG. 3




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# PULLING POST BASE

## RELATED APPLICATION

Buske VEHICLE BODY AND FRAME STRAIGHTENER, Ser. No. 39,954, filed May 25, 1970, now abandoned.

## FIELD OF INVENTION

Metal Deforming, Vehicle body or frame straightener.

## PRIOR ART

Smith U.S. Pat. No. 3,050,099; Chartier U.S. Pat. No. 3,340,720.

## OBJECTS

Heretofore, pulling posts having bases with retractable casters have been devised so that the normally elevated base tends to flatten down against a floor when tension is applied to a damaged automobile. However, so far as is known, with all such prior devices, the arrangement is such that, if tension is suddenly relieved, the base tends to rise back up on its casters so that it can roll across the floor, and, since great reactive powers are at play, the post and its base can cause much damage.

A further factor to be reckoned with is that all slack should be removed from both a pull chain and a post anchoring chain before heavy pulling forces are applied, so as to avoid whipping or snapping of the chains, and also to avoid sudden re-location of the pulling post when great tension is applied.

The object now is to provide a pulling post and base, wherein the base is deformed, against the force of a spring, somewhat from its normal configuration so that the base flattens out against a floor when pulling tension is applied. Retractable casters for the base are provided, but these are rendered completely inoperative when the post is located at a pulling station. Thus, if the pull-chain breaks, the base can resume its normal configuration, but it cannot roll about on its casters.

These and other objects will be apparent from the following specification and drawings, in which:

FIG. 1 is a side elevation of the pulling post and base, with arms extended, casters retracted, and with the base flat on a floor as the result of tension applied to a pull chain;

FIG. 2 is a perspective view of one end of the base with arms retracted and casters extended;

FIG. 3 is a side elevation of the base in its FIG. 2 condition; and,

FIG. 4 is a cross-section along the line 4—4 of FIG. 3.

Referring now to the drawings, in which like reference numerals denote similar elements, the invention is concerned with the base 2 for a pulling post 4. The pulling post may be of the type described in abandoned application Ser. No. 39,954 (supra) or, in modified form as illustrated in FIG. 1, the pulling post comprising a vertical column 6 along which a sleeve 8 is adjustably retained by means of a pin 10 selectively engageable in holes 12 on sleeve 8 and holes 14 on post 6. Extending laterally from one side of sleeve 8 is a platform 16 comprised of a pair of plates 18 rigidly affixed to sleeve 8 and having near its outer end a sheave (not shown) rotatably mounted by a cross shaft 22. An arm 24 is pivoted as at 26 to the upper end of sleeve 8 and a hydraulic cylinder 28 and piston 30 connected to platform 16 and the outer end of arm 24 by means of pins 32 are provided for forcing the outer end of arm 24 upwardly. Tension is applied to a damaged vehicle by means of a pull chain 34 affixed to the outer end of arm 24 and rolling around the sheave on shaft 22. An anchor chain 36 connected to platform 16 by means of a cross pin is secured to a floor pot 40. It is essential that there be no slack in pull chain 34 or anchor chain 36 when pressure fluid is fed to hydraulic cylinder 28 via hydraulic line 41. Other types of pulling posts can be used, but essentially they all are likely to be hazardous if a strong force is applied before chain slack is taken up.



Base 2 consists in two pairs of V-shaped arms 42 and 44 respectively. The members of each pair of arms are rigidly connected at their apex and the free ends of the arms are provided with telescopic extensions 46 and 48. Over the apex of one pair of arms is affixed an upwardly open socket 50 for receiving vertical column 6. The apexes of the two pairs of arms are connected by horizontal pivot 52. Extending upwardly from arms 44 are uprights 54. Compression springs 56 surround loose bolts 58 which engage through uprights 54 and through angles 60 on socket 50. Springs 56 are under compression so as to force uprights 54 away from angles 60 and thereby cock the pairs of arms 52 and 44 at slight angles to one another. This causes the apexes of the arm pairs to lift upwardly from the floor, and the heads and nuts on the bolts limit the extent to which the arms can pivot.

Caster assemblies 62 are provided for the free ends of each pair of arms. Each assembly consists of a plate 64 on which casters 66 are mounted. The ends of the plates are pivoted as at 68 to the arms so that the casters 66 may be disposed either in the downwardly extended position of FIGS. 2 and 3 or in the upwardly retracted position of FIG. 1. Retaining rods 70 engaging in sockets 72 on the plates are engageable with hooks 74 on the arms for holding the plates 64 in the position to extend casters 66 downwardly.

In operation, when the assembly is to be moved from one location to another, telescoping arm extensions 46 are retracted and casters 66 are extended in their FIG. 2 and FIG. 3 positions, and the assembly is rolled on the floor to a working station. There the telescoping extensions 46 of the arms are pulled out, retaining rods 70 are unhooked and the plates 64 are pivoted so as to swing casters 66 up to their FIG. 1 positions. Anchor chain 36 is hooked onto anchor pot 40, and the free end of pull chain 34 is connected to the part of the vehicle to which tension is to be applied. However, at this point, there is normally slack in one or both the pull chain 34 and/or anchor chain 36. Some pressure fluid is then introduced via hydraulic line 41 into cylinder 28. As preliminary tension is applied via the chains, post 6 swings to the right as seen in FIG. 1, thereby compressing springs 56 and thus causing the V-shaped arm pairs 42 and 44 to flatten out against the floor. Thus, the slack is taken out of the chains before great pulling forces are applied.

I claim:

1. A base for a pulling post, comprising,

a first pair of arms having a connection at one end and having free ends extending generally in one direction,

a second pair of arms having a connection at one end and having free ends extending generally in the opposite direction,

said arms being adapted to rest upon a floor, means for supporting a pulling post on one of the pairs of arms,

horizontal pivot means connecting the connection between the respective pairs of arms,

and spring means for biasing said pairs of arms to pivot about said pivot means whereby, when said arms are disposed on a floor, the connected ends thereof tend to rise above the floor, and when a horizontal pull is applied in one direction to the post, said pairs of arms rotate about said horizontal pivot means contra to the bias and flatten out against the floor.

2. The combination claimed in claim 1, and retractable casters on said pairs of arms.

3. The combination claimed in claim 2, the arms in each pair being in V-configuration and the connections therebetween being at the apexes of the V's.

4. The combinationed claimed in claim 2, the retractable casters being disposed between the free ends of the arms.

5. The combination claimed in claim 4, said casters being retractable from an extended position in which they support the free ends of the arms on the floor to a retracted position in which the casters are supported entirely free of the floor.

6. The combination claimed in claim 3, and telescopic extensions for the free ends of the arms.



7. A base for a pulling post, comprising

a first pair of arms disposed in V-configuration rigidly connected at the apex of the V,

a second pair of arms disposed in V-configuration rigidly connected at the apex of the V,

said pairs of arms being adapted to be disposed on a floor with the free ends of the arms in one pair extending oppositely from the free ends of the arms of the other pair, and with the apexes of the V's disposed adjacent one another,

an upwardly open post socket rigidly affixed on one pair of arms adjacent the apex thereof, a horizontal pivot connecting the pairs of arms at the apexes thereof,

and spring means engaged between the pairs of arms for biasing the pairs of arms to pivot in a direction tending to cause the apexes thereof to rise above the floor.

8. The combination claimed in claim 7, and means for limiting the spring-biased movement of the arms.

9. The combination claimed in claim 7, and retractable caster means for supporting the free ends of the arms.

10. The combination claimed in claim 9, said retractable caster means comprising a plate disposed across the free ends of the arms, casters on one side of the plate, and pivots connecting the ends of the plate with the free ends of an arm pair, whereby the casters can be swung between a downwardly extended position in which they engage the floor and an upwardly extended position in which they are entirely free of the floor.

11. The combination claimed in claim 10, and telescopic extensions for the free ends of the arms.

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