Dec. 29, 1953 L. M. CARPENTER 2,663,929

RADIATOR BENCH

Filed March 27, 1952

2 Sheets-Sheet 1

Fig. 5.

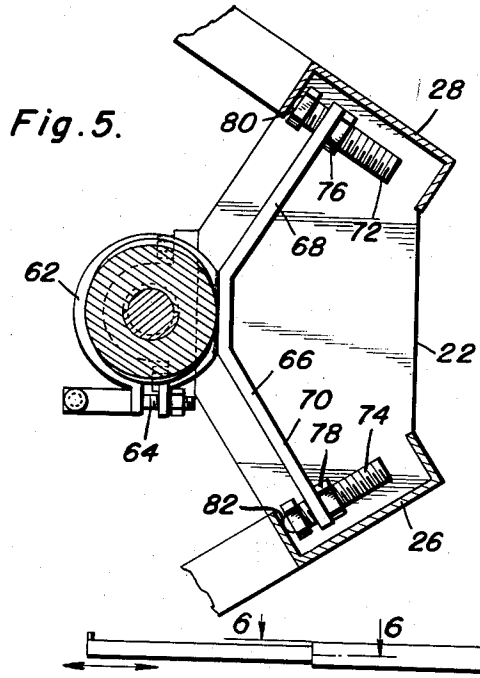
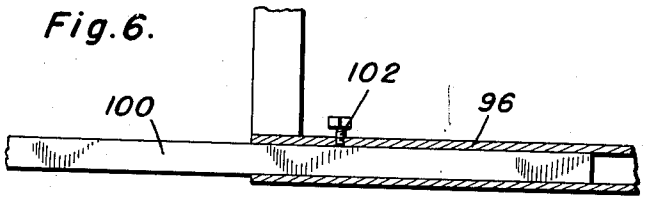


Fig. 1.

Fig. 6.



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Fig. 2.

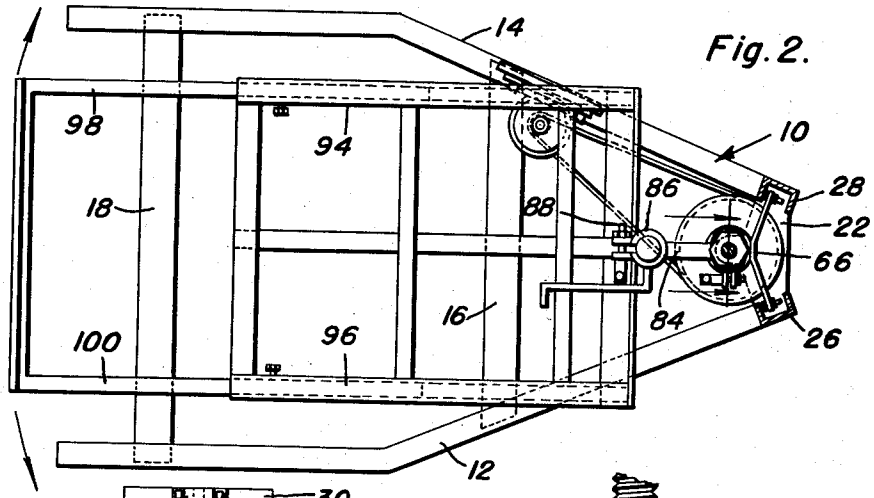


Fig. 3.

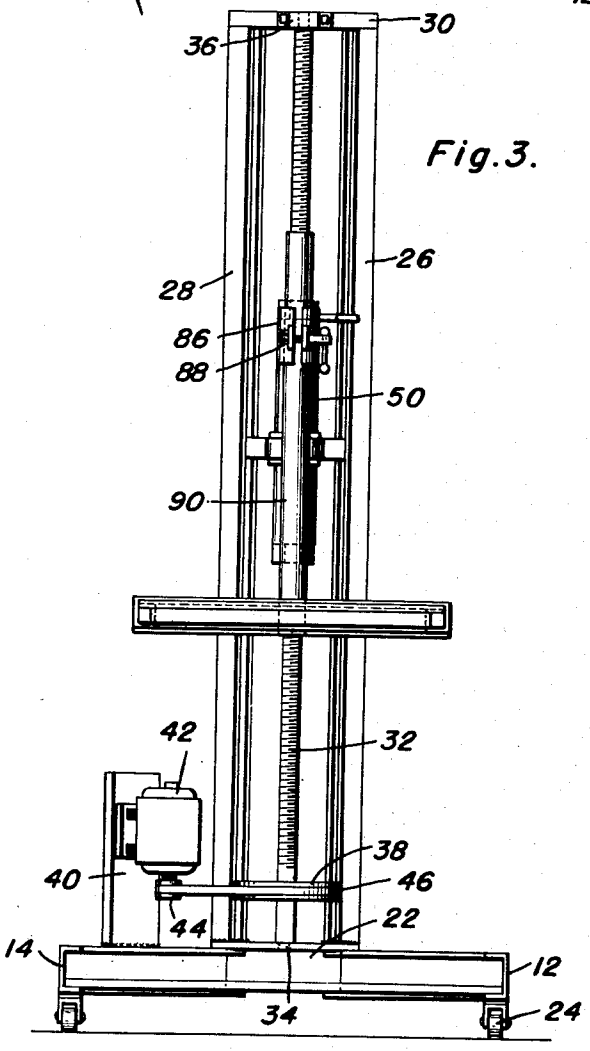
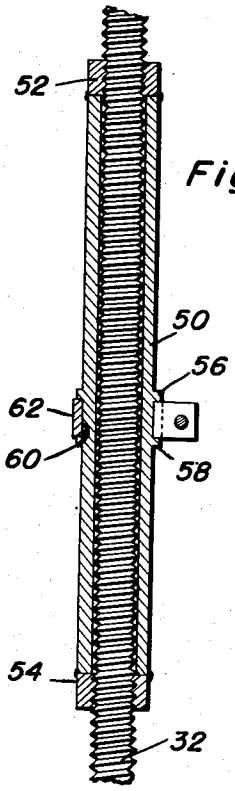


Fig. 4.



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RADIATOR BENCH

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7 Claims. (Cl. 29—290)

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This invention relates to a radiator bench and particularly to a bench for adjustably supporting a radiator during construction or repair work thereon.

In the construction, maintenance and repair of radiators it is frequently desired to support the radiator in various different positions as well as to immerse it in a tank of water or other liquid for testing for leaks, or for other purposes.

Radiators are quite heavy and awkward to handle so it is almost impossible for repairmen to properly position and maintain the radiator in position during testing and repair purposes.

The present invention provides a supporting bench on which a radiator may be placed and elevated or lowered or otherwise adjusted to various positions so that the repairman or constructor may work with ease at the various portions of the radiator as well as lower it in a tank of testing fluid or for any other reason he may wish to elevate or lower the device.

The present invention is accomplished by means of a stand having a base with an elevator screw and guide rails adjacent the screw, with a motor for driving a housing along the screw while the weight of the housing is supported by the guide rails and an elevator platform mounted on the housing and adjustable with respect thereto.

It is accordingly an object of this invention to provide a radiator repair stand.

It is a further object of this invention to provide a bench for supporting a radiator in any desired position.

It is a still further object of this invention to provide a bench which may be elevated to any desired position or adjusted to any desired angular relation thereto.

Other objects and many of the attendant advantages of this invention will be apparent from the following detailed description taken in conjunction with the accompanying drawings, in which:

Figure 1 is a side elevation of the elevator bench;

Figure 2 is a cross section, taken substantially on the plane indicated by the line 2—2 of Figure 3 and showing the guide support mechanism for the platform;

Figure 3 is a front elevation of the radiator bench;

Figure 4 is an enlarged sectional elevation of the drive screw connection and taken substantially on the plane indicated by the line 4—4 of Figure 2;

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Figure 5 is an enlarged cross section taken substantially on the plane indicated by the line 5—5 of Figure 1 and showing the bracing and locking mechanism therefor; and,

Figure 6 is a longitudinal section of the platform adjusting means taken substantially on the plane indicated by the line 6—6 of Figure 1.

According to the exemplary embodiment of the invention, the bench comprises a base 10 having side members 12 and 14 preferably constructed of channel members. The base 10 has channel members 12 and 14 arranged in A-formation with a cross brace 16 and laterally extending portions having a cross brace 18. The converging portions of the side members 14 and 12 are joined together by a means of a head plate 22. Preferably castors 24 are placed on the base 10 so that the base may be readily moved about.

Guide rails 26 and 28 are mounted on the base 10 and preferably are connected to the head plate 22. Guide rails 26 and 28 extend parallel to each and terminate in a cap plate 30, a drive screw 32 has a thrust bearing 34 in the head plate 22 and extends parallel to the guide rails 26 and 28 and has a guide bearing 36 in the top plate 30. The drive screw 32 is threaded throughout substantially its length except for the lower portion on which a sheave 38 is rigidly fixed. An upstanding bracket 40 on the base member 14 supports a driving motor 42 which has a drive sheave 44 over which a belt 46 is entrained connecting the sheaves 38 and 44.

A carrier housing 50 is mounted on the drive screw 32 and has threaded connections 52 and 54 at each end thereof. A motor 42 through the drive connection turns the screw in either direction so that the housing 50 may be driven in either direction along the drive screw 32.

The carrier housing 50 is provided intermediate its length with a pair of upstanding collars 56 and 58 providing an annular seat 60 about the housing. A split collar 62 is mounted on a seat 60 and is provided with a clamping screw 64 for locking the collar 62 with respect to the housing 50. A brace member 66 is rigidly connected to the collar 62 and has extending arms 68 and 70 having the ends thereof provided with adjusting screws 72 and 74. The screws 72 and 74 being adjustably secured in apertures in the ends of the arms 68 and 70 and locked thereto by means of lock nuts 76 and 78. The screws 72 and 74 terminate in roller bearings 80 and 82 which are in contact with the inner surfaces of the guide rails 26 and 28 respectively.

An arm 84 is rigidly mounted on the housing

50 and extends laterally therefrom. The split collar 86 is mounted on the end of the arm 84 and is provided with a clamp screw 88 by which the collar 86 may be clamped on a supporting shaft 90. The shaft 90 can be adjusted either angularly or longitudinally in the collar 86 by opening the clamp screw 88. A radiator supporting platform 92 is rigidly supported on the lower end of the shaft 90 and includes a pair of side rails 94 and 96 in which are slidably supported extension frame members 98 and 100, which can be locked in adjusted position by means of set screws 102.

In the operation of the device according to the invention the radiator to be inspected, repaired or otherwise treated, will be mounted on the platform 92 and the platform will be adjusted to any desired position by means of the pair of adjusting clamps 62 and 86. The platform can be adjusted to any desired angular relation with respect to the collar 86 and also the shaft 90 may be longitudinally adjusted as is desired through the collar 86. Likewise the housing 50 may be adjusted to any desired angular relation by means of the split collar 62 and the clamp screw 64. The reversible motor 42 will drive the carriage 50 in any desired direction along the screw 32 and the weight of the carriage and the radiator thereon will be carried by the brace member 66 through the contacts with the guide members 26 and 28. The entire bench can be moved about as desired by means of the castors 24.

It will thus be seen that the present invention provides a bench which is readily adjustable to any desired position and for any desired operation on a radiator and which may be readily moved about as desired by the workman.

While the exemplary embodiment of the invention has been shown and described according to the best present understanding thereof.

It will be apparent, to those skilled in the art, that many changes and modifications can be made herein without departing from the true spirit of the invention.

Having described the invention, what is claimed as new is:

1. A radiator bench comprising a base, a pair of guide rails rigidly secured to said base, a drive screw journaled in said base, a guide bearing mounted on said guide rail, said drive screw being received in said guide bearing, a carrier housing mounted on said drive screw, a split collar mounted on said housing, a clamp securing said collar on said housing, a brace mounted on said collar, said brace having sliding contact with said guide rails, an arm rigidly mounted on said housing, a split collar rigidly mounted on said arm, a supporting shaft extending through said collar, a clamp adjustably positioning said shaft in said collar, a platform rigidly mounted on said shaft.

2. A radiator bench comprising a base, a pair of guide rails rigidly secured to said base, a drive screw journaled in said base, a guide bearing mounted on said guide rail, said drive screw being received in said guide bearing, a carrier housing mounted on said drive screw, a split collar mounted on said housing, a clamp securing said collar on said housing, a brace mounted on said collar, said brace having sliding contact with said guide rails, an arm rigidly mounted on said housing, a split collar rigidly mounted on said arm, a supporting shaft extending through said collar, a clamp adjustably positioning said shaft in said collar, a platform rigidly mounted on said shaft, adjusting screws between the ends of said brace and said guide rails.

3. A radiator bench comprising a base, a pair of guide rails rigidly secured to said base, a drive screw journaled in said base, a guide bearing mounted on said guide rail, said drive screw being received in said guide bearing, a carrier housing mounted on said drive screw, a split collar mounted on said housing, a clamp securing said collar on said housing, a brace mounted on said collar, said brace having sliding contact with said guide rails, an arm rigidly mounted on said housing, a split collar rigidly mounted on said arm, a supporting shaft extending through said collar, a clamp adjustably positioning said shaft in said collar, a platform rigidly mounted on said shaft, adjusting screws between the ends of said brace and said guide rails, said adjusting screws including roller bearings contacting said guide rails.

4. A radiator bench comprising a base, a pair of guide rails rigidly secured to said base, a drive screw journaled in said base, a guide bearing mounted on said guide rail, said drive screw being received in said guide bearing, a carrier housing mounted on said drive screw, a split collar mounted on said housing, a clamp securing said collar on said housing, a brace mounted on said collar, said brace having sliding contact with said guide rails, an arm rigidly mounted on said housing, a split collar rigidly mounted on said arm, a supporting shaft extending through said collar, a clamp adjustably positioning said shaft in said collar, a platform rigidly mounted on said shaft, a sheave fixed on said drive screw, a motor mounted on said base, a driving connection between said motor and said sheave.

5. In an adjustable work bench having a base and a work receiving platform, bench adjusting means comprising a pair of upright spaced apart parallel guide rails rigidly mounted on said base, a guide bearing mounted on said guide rails, a drive screw journaled on said base and retained in said guide bearing, said drive screw being mounted in parallel to said rails, a carrier housing threadedly mounted on said screw, an annular seat on said housing, a split collar journaled in said seat, brace arms rigidly secured on said split collar and slidably engaging said rails, clamping means for locking said split collar on said seat to inhibit motion between said housing and said collar.

6. In an adjustable work bench having a base and a work receiving platform, bench adjusting means comprising a pair of upright spaced apart parallel guide rails rigidly mounted on said base, a guide bearing mounted on said guide rails, a drive screw journaled on said base and retained in said guide bearing, said drive screw being mounted in parallel to said rails, a carrier housing threadedly mounted on said screw, an annular seat on said housing, a split collar journaled in said seat, brace arms rigidly secured on said split collar and slidably engaging said rails, clamping means for locking said split collar on said seat to inhibit motion between said housing and said collar, a laterally projecting arm rigidly fixed on said housing, a platform supporting shaft adjustably secured on said arm.

7. In an adjustable work bench having a base and a work receiving platform, bench adjusting means comprising a pair of upright spaced apart parallel guide rails rigidly mounted on said base, a guide bearing mounted on said guide rails, a

drive screw journaled on said base and retained in said guide bearing, said drive screw being mounted in parallel to said rails, a carrier housing threadedly mounted on said screw, an annular seat on said housing, a split collar journaled in said seat, brace arms rigidly secured on said split collar and slidably engaging said rails, clamping means for locking said split collar on said seat to inhibit motion between said housing and said collar, adjusting screws between said arms and said guide rails.

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