June 8, 1926. 1,587,682

J. F. SIEGFRIED ET AL

MOTOR HOLDING DEVICE

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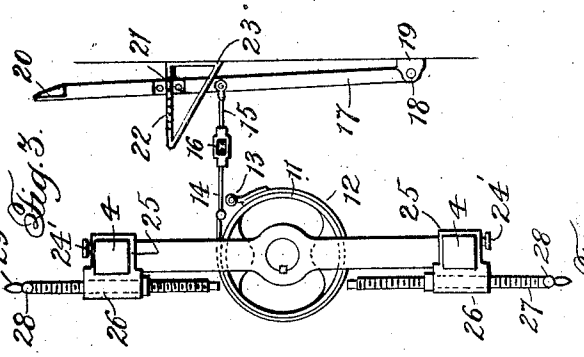


Fig. 3.

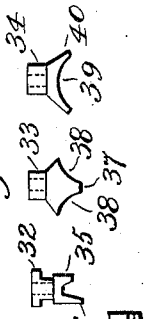


Fig. 5.

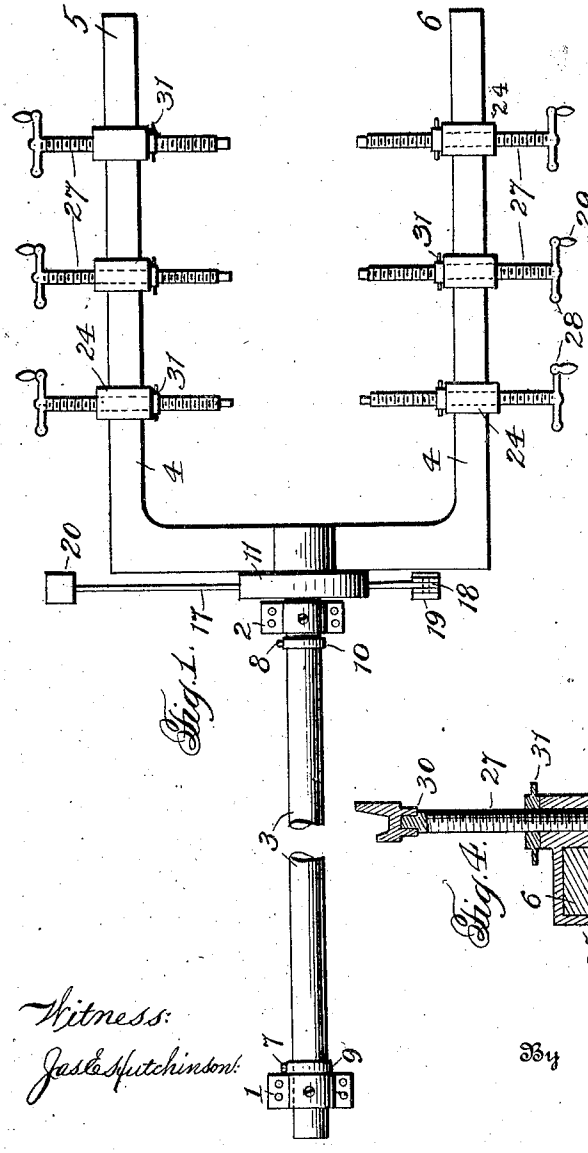


Fig. 1.

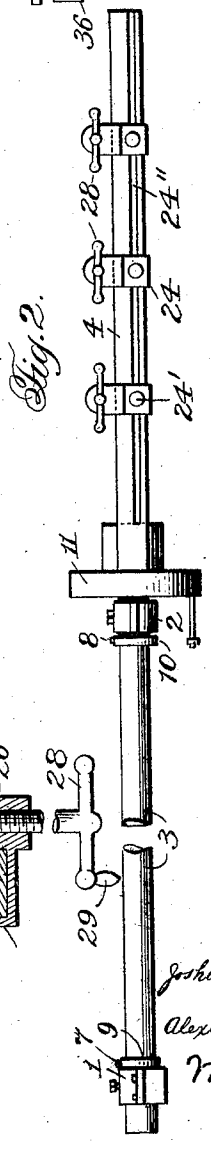


Fig. 2.

Fig. 4.

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Fig. 6.

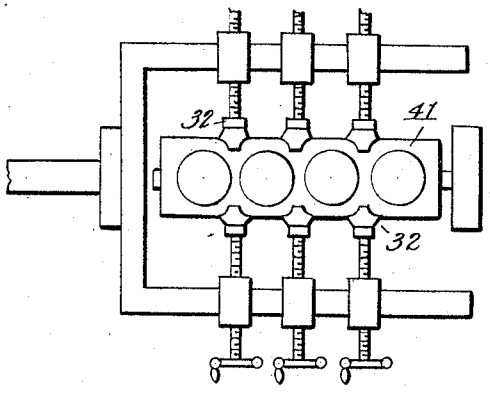


Fig. 7.

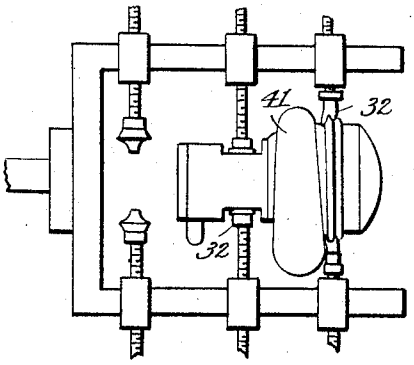


Fig. 8.

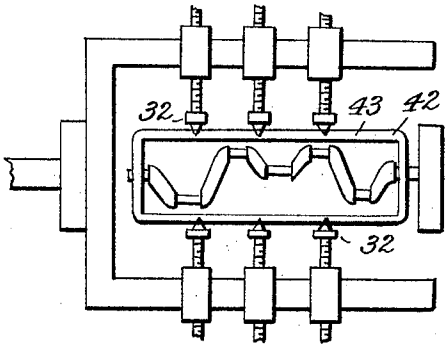
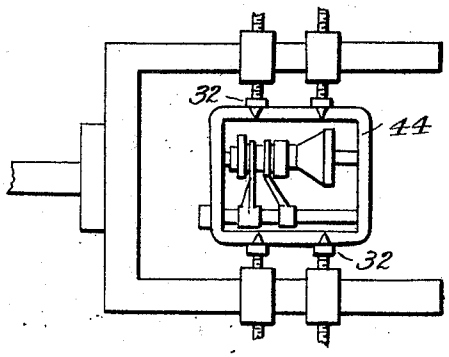


Fig. 9.



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UNITED STATES PATENT OFFICE.

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MOTOR-HOLDING DEVICE.

Application filed September 11, 1924. Serial No. 737,101.

Our invention relates to new and useful improvements in a motor handling device and more particularly to a device for holding motors or engines so that they may be easily operated upon for repairing or assembling, the principal object of the invention residing in the provision of such a device which is easily adjustable so that the parts of the motor or engine may be positioned conveniently for operation thereon.

Another object of the invention consists in providing a supporting frame which is rotatably mounted upon a suitable support, the frame carrying a plurality of adjustable clamps which engage the motor or engine for supporting the same relative to the frame, said clamps being of such a construction as to allow adjustment of the motor or engine supported thereby without adjustment or rotation of the frame itself.

A further object resides in the provision of novel means for holding the supporting frame in its adjusted positions, said holding means being operable by the foot of the operator so that his hands will be free for manipulation of the frame and motor or engine carried thereby.

With the above and other objects in view, which will appear as the description proceeds, our invention consists in the novel details of construction and arrangement of parts, described in the following specification and illustrated in the accompanying drawings, and while we have illustrated and described the preferred embodiments of the invention, as they now appear to us, it will be understood that such changes may be made as will fall within the scope of the appended claims.

In the drawings:

Fig. 1 is a top plan.

Fig. 2 is a side elevation.

Fig. 3 is an end view.

Fig. 4 is a vertical section through one of the adjustable slides showing in elevation one of the clamping rods and clamps carried thereby.

Fig. 5 is a detail showing a group of clamps adapted to be used.

Fig. 6 is a top plan showing a motor supported in the frame.

Fig. 7 is a top plan showing a motor supported in the frame with one end thereof uppermost.

Fig. 8 is a plan showing a crank case of a motor supported in the frame, and

Fig. 9 is a plan showing a transmission housing or casing supported in the frame.

In the drawings 1 and 2 indicate bearings which are adapted to be secured to a work bench or other suitable object and rotatably support the horizontal shaft 3 on one end of which is secured or formed the substantially U-shaped frame indicated generally at 4 the frame providing the spaced arms 5 and 6 which are preferably square in cross section but which may be of any other desired irregular shape for a purpose which will later appear. Secured upon the shaft 3, in longitudinally spaced relation, by means of the set screws 7 and 8 are the collars 9 and 10, the collar 9 engaging the inner face of the bearing 1 and the collar 10 engaging the inner face of the bearing 2 to prevent longitudinal movement of the shaft 3 relative to said bearings but allowing a rotatable movement thereof.

Secured upon the frame 4, preferably between the end thereof and the bearing 2, is the ring or drum 11 and around this ring or drum extends a brake band 12 one end of which is secured to the work bench or other object by the bolt 13 and the opposite end of which is secured to the rod 14 which in turn is secured to the rod 15 by the turn buckle 16. The lower end of the rod 15 is pivotally connected to the lever or treadle 17 which is pivotally connected at 18 to a bracket 19 which in turn is secured to the floor. The outer or free end of the treadle or lever 17 is provided with the foot engaging portion 20 and secured to the lever or treadle intermediate its ends is a flanged plate 21 which is adapted to engage the teeth 22 of the bracket 23 secured to the floor. The engagement of the flanged plate 21 with the teeth 22 of the bracket will hold the lever or foot treadle 17 in its adjusted positions. It will be appreciated that the shaft 3 may be rotated in the bearings 1 and 2 when the brake band 12 is released but when the brade band is tightened around its drum or ring the shaft will be held against rotation. The brake band is adjusted by the foot treadle or lever 17 and when tightened to hold the shaft against rotation the flanged plate 21 will engage the teeth 22 of the bracket 23. When the brake band is to be

released it is only necessary to disengage the flanged plate 21 from the teeth 22 and this allows the lever or treadle to raise and loosen the band.

Carried on each of the arms 5 and 6 of the frame are the slides 24, there being preferably three of these slides on each of the arms. The slides are held in adjusted positions upon the arms by the set screws 24' which engage in the longitudinally extending grooves 24'' formed in the outer faces of the arms. The slides have the openings 25 corresponding in shape to the cross sectional shape of the arms and also have the transversely extending threaded openings 26 in which operate the threaded rods 27 having a bar 28 formed on one end with a handle 29 and the opposite end reduced and rounded as shown at 30 to form a bearing for the clamp which engages the motor or engine. A locking collar 31 is carried on each of the threaded rods 27 and when adjusted to engage the end of the slide will hold the rods 27 against rotation to release the clamps from the motor or engine.

In Fig. 5 we have illustrated three slightly different forms of clamps to engage the motor or engine these being shown at 32, 33 and 34 the clamp 32 being shaped to provide the projected portions 35 and 36, the portion 36 being somewhat longer than the portion 35. The clamping member 33 has the projection 37 and the curved portions 38 whereas the clamping member 35 has the concaved face 39 forming the end projections 40. The clamp 32 is adapted for engaging the flanges which are formed on the engine block or crank case and the clamps 33 and 34 are so shaped as to engage the cylinder block, the clamp 33 having its projection 37 extending into the space between the rounded portions thereof and the clamp 34 having the rounded face 39 engageable with the rounded or cylinder portion of the block.

In Fig. 6 we have illustrated the frame as supporting a motor indicated generally at 41 and in Fig. 7 we have also illustrated the frame as supporting the motor but in this instance the motor is swung so that one end projects uppermost. In these figures of the drawings we have shown the clamp 32 as being used but it will be understood that the clamp 34 might equally as well be used.

In Fig. 8 we have illustrated the frame as supporting a crank case indicated generally at 42 and in this figure the clamp 32 is illustrated as being used and engaging the flange 43 of the case. When first positioning the crank case within the frame the projections 36 will extend uppermost or over the top of the flange but the frame will be rotated so that the projection 36 will be lowermost, thereby forming a greater bearing surface for the support of the casing.

In Fig. 9 we have shown the frame as supporting a transmission casing or housing indicated generally at 44 and in this figure we have also illustrated the clamp 32 as being in use.

From the above detail description it is thought that the construction of our invention will be clearly understood and we will now endeavor to give a little further description of the operation or manner of use. When mechanics are working upon motors or engines it is desirable that some means be provided for supporting them in such a position that the parts being worked upon are easily accessible and it is also desirable that some means be provided whereby the motor or engine may be swung into different positions. With the construction which we have illustrated the supporting frame itself is adapted for swinging or rotatable movement on its longitudinal axis and at the same time we have provided novel forms of clamping means, for supporting the motor relative to the frame, so that the motor or engine itself may be adjusted relative to the frame without adjusting the frame itself. The motor or engine is secured in the frame 4 by adjusting the screw rods 27 and the clamps carried on the ends thereof will engage the motor or engine and then when the locking collars 31 are adjusted they will be held against accidental displacement. The clamping members 32, 33 and 34 are received on the reduced portions 30 of the screw rods 27 and are rotatable thereon for a purpose which will later appear. The frame with the motor or engine supported therein may be swung or rotated relative to its longitudinal axis by releasing the brake band 12 through the foot lever or treadle 17 and the shaft 3 rotates in the bearings 1 and 2. When the frame has been positioned as desired the free end of the foot treadle or lever 17 will be engaged and the lever swung downwardly to thereby tighten the brake band 12 upon its ring or drum 11 and the lever or treadle will be held in its adjusted position by the flanged plate 21 engaging the teeth 22 of the bracket 23. Thus the frame is held against rotatable or swinging movement and the mechanic may work upon the engine as he desires. The slides 24 being adjustable upon the arms 5 and 6 of the frame may be positioned as desired by the operator. At times it may be desired to swing the motor or engine independently of the frame and when this is desired the two end screw rods 27 on each of the arms 5 and 6 are operated to release the clamping members from the motor or engine while the center rods are held in their clamping positions. The clamping members 32, 33 and 34 being rotatable on the ends of the screw rods the engine may thus be swung into the desired position and then one or

both of the end rods on each of the arms may be adjusted so that their clamps will engage the motor or engine. In Fig. 7 of the drawings we have illustrated tht motor as having been swung relative to the frame with one of the end rods on each of the arms adjusted for engaging the clamp with the motor or engine.

It will be appreciated that in addition to supporting the entire motor or engine the frame is equally as well adapted for supporting separate portions thereof such as the crank case independently of the cylinder block or the cylinder block independently of the crank case and may also be used for supporting the transmission casing or housing or other parts of a motor vehicle.

Having fully described our invention what we claim as new and desire to secure by Letters Patent is:

1. A support of the character described, including a frame mounted for bodily swinging movement on its longitudinal axis and having parallel spaced arms adapted to receive the member to be supported therebetween, a plurality of slides adjustably mounted on each arm and adjustable one relative to the other, and a clamping member carried by each of the slides and extending transversely of the arms for engagement with the member to be supported.

2. A support of the character described including a frame mounted for bodily swinging movement on its longitudinal axis and having parallel spaced arms adapted to receive the member to be supported therebetween, a plurality of slides adjustably mounted on each arm and adjustable one relative to the other, threaded rods carried by the slides and extending transversely of the arms, and clamping members rotatably carried by the rods and adapted to be engaged with the member to be supported.

3. A support of the character described including a frame mounted for bodily swinging movement on its longitudinal axis and having parallel spaced arms adapted to receive the member to be supported therebetween, a drum carried by the frame, a band encircling the drum, means for tightening the band to hold the frame against swinging movement, a plurality of slides adjustably mounted on each arm and adjustable one relative to the other, and a clamping member carried by each of the slides and extending transversely of the arms for engagement with the member to be supported.

In testimony whereof we hereunto affix our signatures.

JOSHUA FLOYD SIEGFRIED.
ALEXANDER SIEGFRIED.