

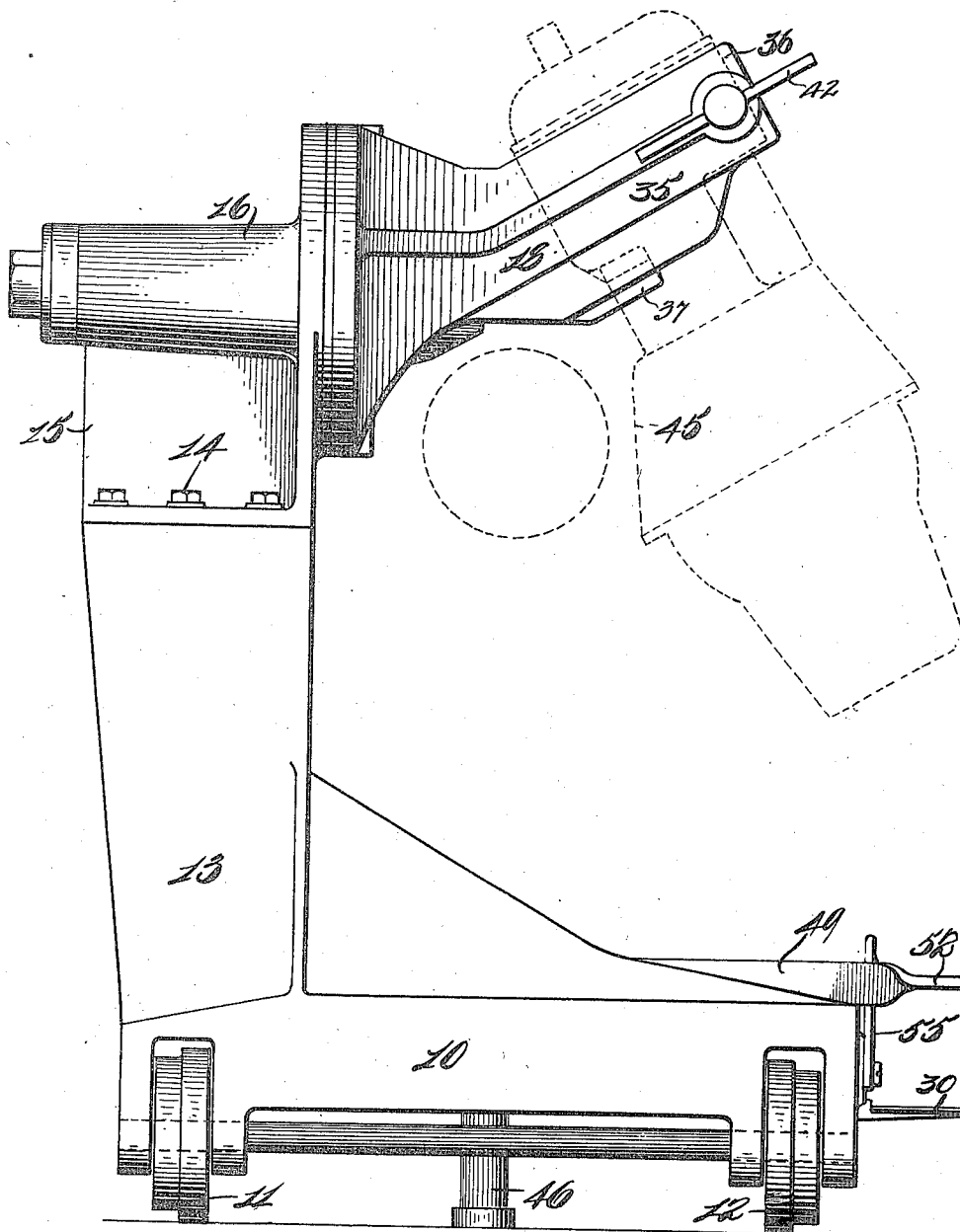
J. F. & H. E. DODGE.
 TRUCK OR STAND USED IN ASSEMBLING MOTORS.
 APPLICATION FILED AUG. 31, 1915.

1,216,552.

Patented Feb. 20, 1917.

5 SHEETS—SHEET 1.

Fig. 1.



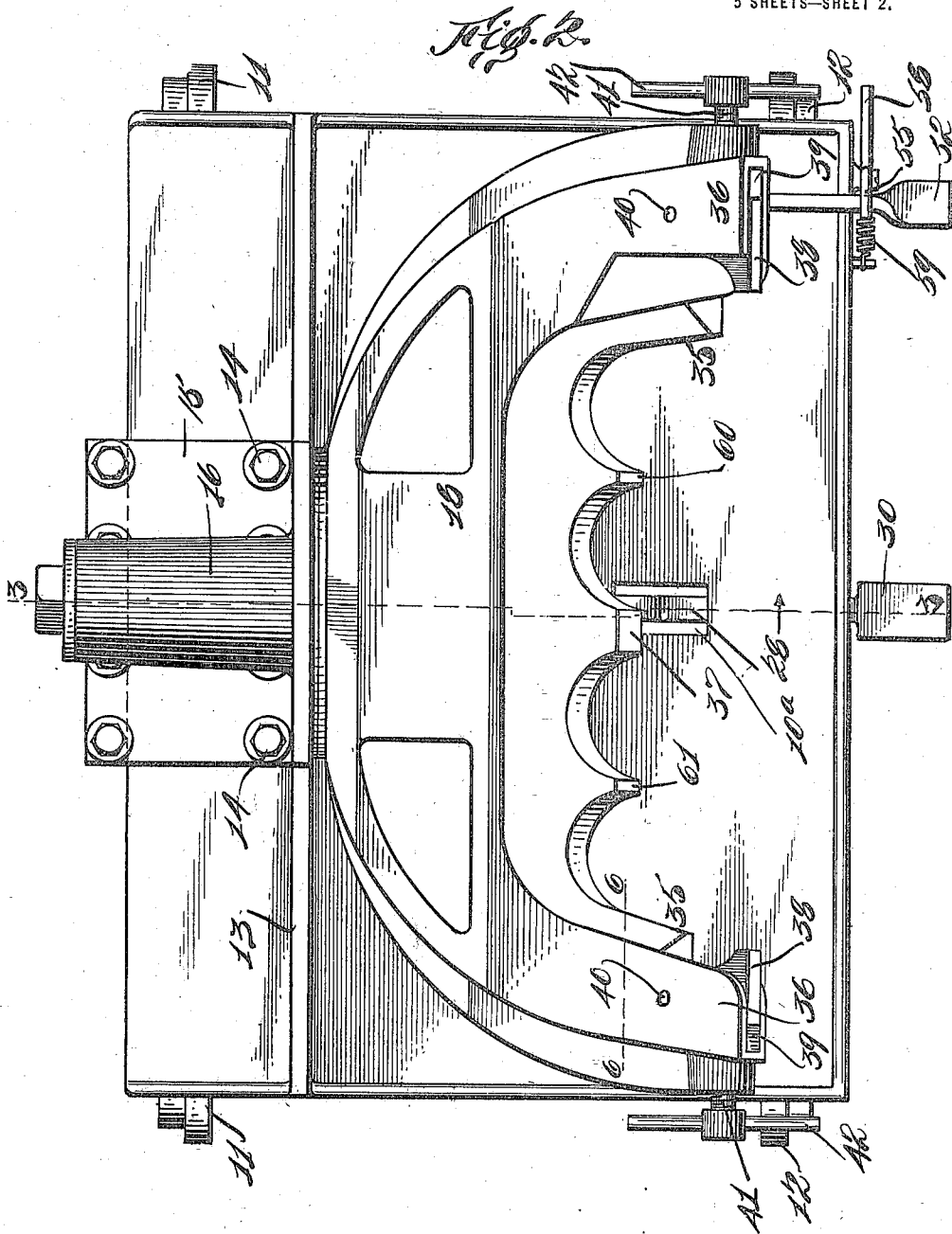
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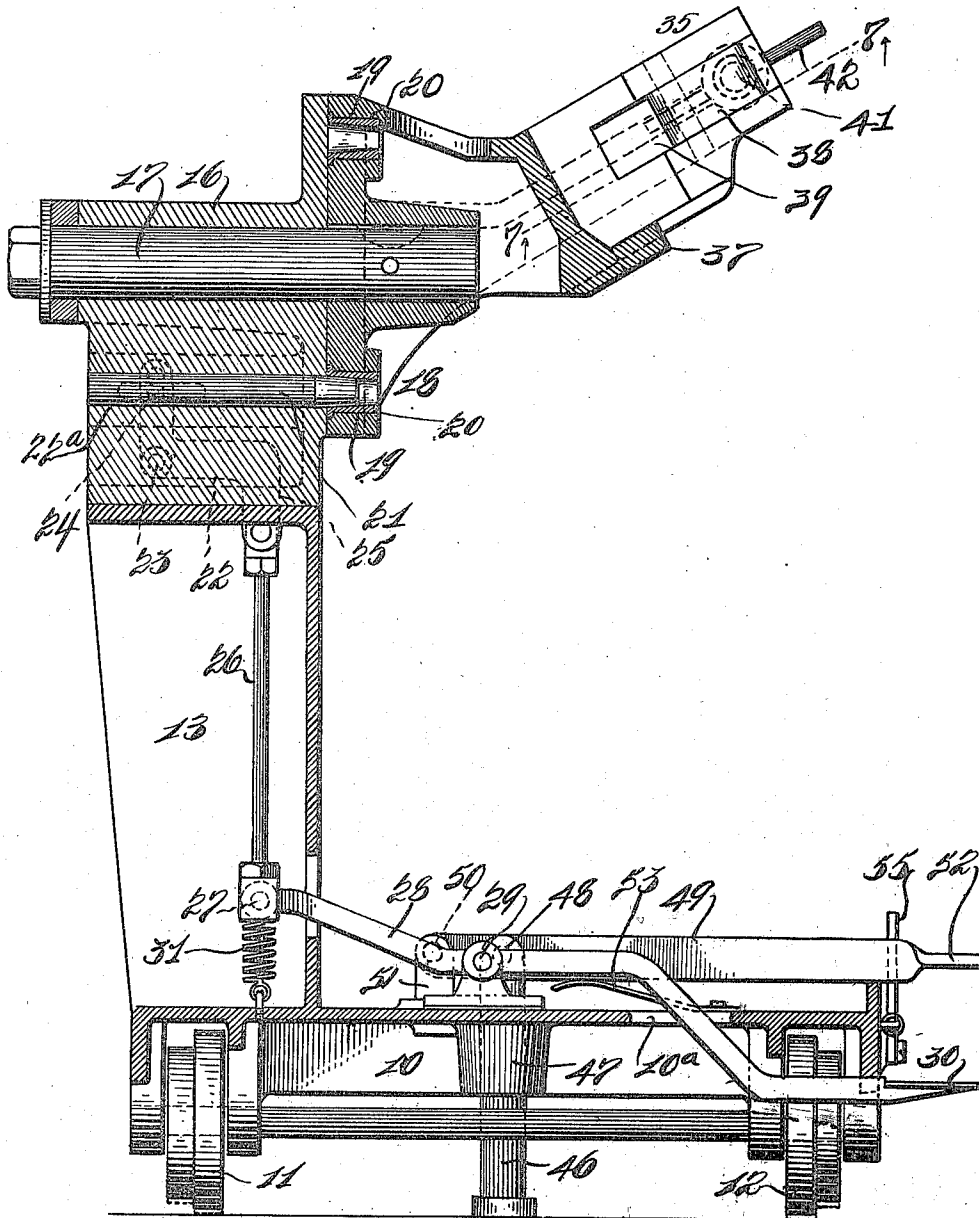
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5 SHEETS—SHEET 3.

Fig. 3.



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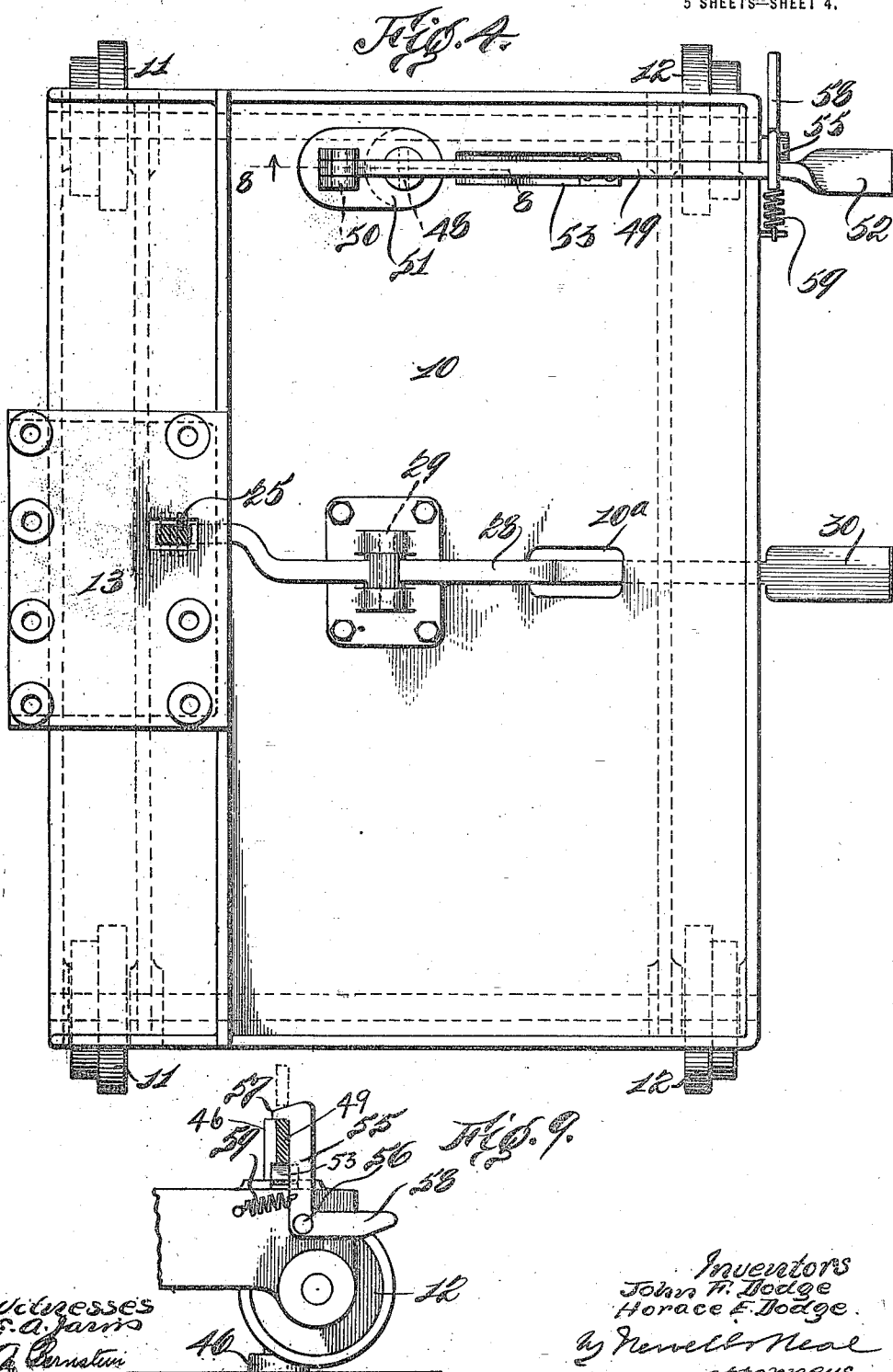
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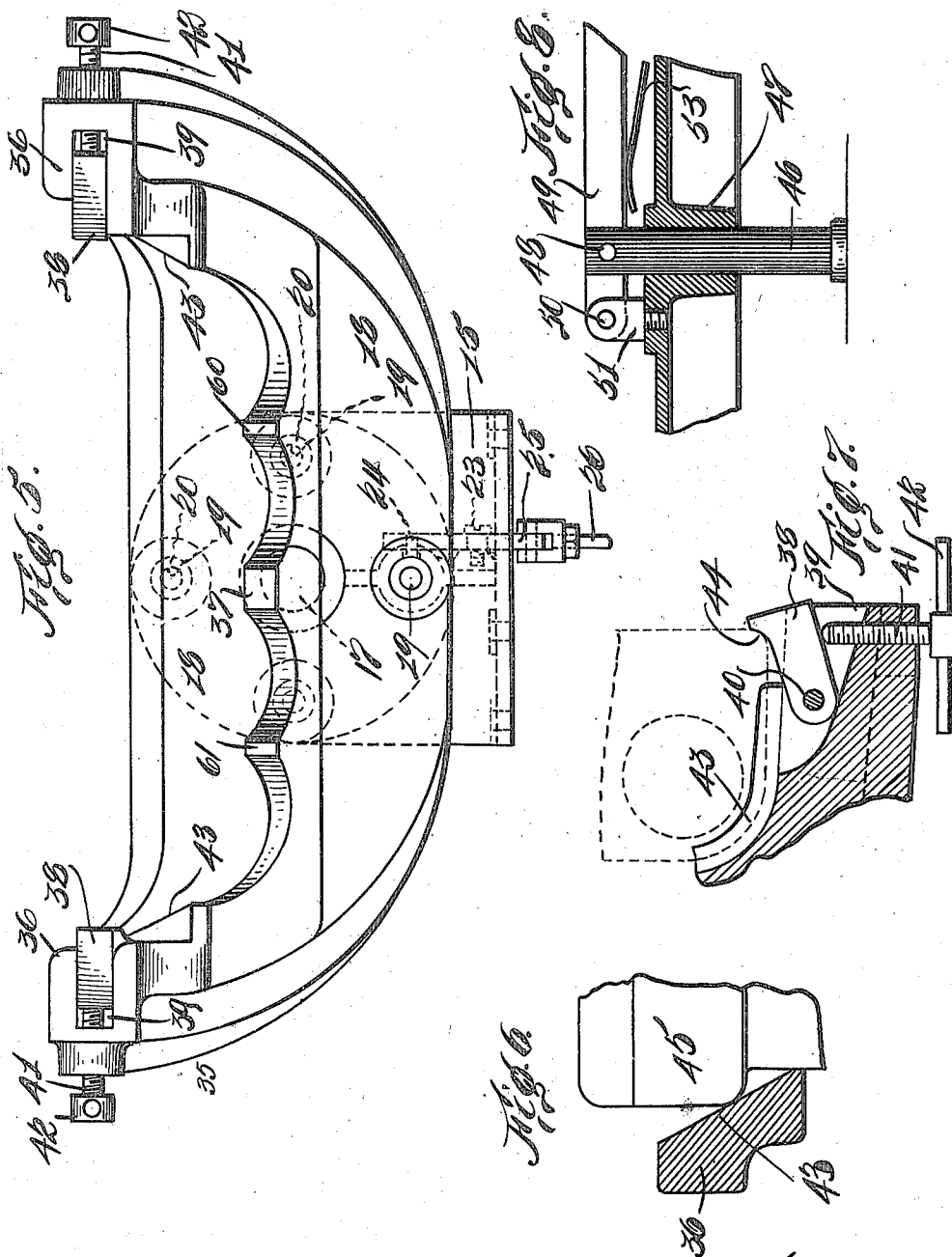
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 5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

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TRUCK OR STAND USED IN ASSEMBLING MOTORS.

1,216,552.

Specification of Letters Patent.

Patented Feb. 20, 1917.

Application filed August 31, 1915. Serial No. 48,189.

To all whom it may concern:

Be it known that we, JOHN F. DODGE and HORACE E. DODGE, citizens of the United States, residing at Detroit, Michigan, and Grosse Pointe, Michigan, respectively, have invented certain new and useful Improvements in Trucks or Stands Used in Assembling Motors, of which the following is a clear, full, and exact description.

This invention relates to trucks or stands adapted to be used in assembling motors, such for instance as are used in driving an automobile. Among the objects of the invention are the provision of means whereby the assembling of the various parts attached to the motor is not interfered with; the provision of means for temporarily supporting the cylinder casting of a motor until the same is firmly secured in position; the provision of improved means for clamping the cylinder casting in position; the provision of a swiveling arrangement which permits the motor to be rotated about a horizontal axis and to be locked in any one of a plurality of different positions; and the provision of means enabling the stand or truck to be elevated off of its wheels so that it will remain stationary while the motor is being assembled. Other objects are to provide a simple, practical and efficient stand or truck for facilitating the assembling of the parts of a motor.

These being among the objects of the present invention, the same consists of certain features of construction and combinations of parts to be hereinafter described and then claimed with reference to the accompanying drawings illustrating a suitable embodiment of the invention having the above and other objects in view, in which drawings

Figure 1 is a side elevation of a stand or truck according to the present invention, the same showing in dotted lines the parts of a motor in process of being assembled;

Fig. 2 is a plan of the stand or truck;

Fig. 3 is a vertical central section on the line 3—3 Fig. 2;

Fig. 4 is a plan of the base of the stand or truck with its concomitant parts;

Fig. 5 is a front elevation of the yoke and clamping portions of the device;

Fig. 6 is a detail section on line 6—6

Fig. 2, showing an arm of the supporting yoke and in elevation a portion of a cylinder casting;

Fig. 7 is a detail section on the line 7—7 Fig. 3, showing the construction of one of the clamping devices;

Fig. 8 is a section on the line 8—8 Fig. 4, showing a portion of the means for elevating one end of the stand or truck; and

Fig. 9 is a broken detail view illustrating a latching device involved herein.

Referring to Figs. 1 to 4 inclusive, the base 10 of the stand or truck is provided at each end with a pair of wheels such as 11, 12, whereby the stand or truck is adapted to be wheeled from place to place. Intermediately of one side of said base there is located an upwardly extending support 13 upon the upper end of which there is secured as by means of bolts 14 an auxiliary supporting member 15, which is provided with a horizontal hub 16 having a bearing for a shaft or swivel 17, which carries at its front end a head or disk 18 which backs up against a relatively large flat bearing surface 15^a. Said head or disk is provided preferably with four equidistant holes as 19, which are arranged around the axis of said head and are preferably reinforced as by bushings or thimbles 20. The head 18 and the parts supported thereby and to be described later, are adapted to be set in various angular positions with respect to the axis of the swivel 17, through the medium of a locking bolt 21 which is guided in a bore 22^a in the supporting member 16 and which is parallel with the swivel 17. Suitable means are provided for retracting the said bolt against the projecting action of a spring 31, such means preferably comprising an angle lever or bell crank 22 which is pivoted to the supporting member 13 at 23 and the upper end of which is connected by pin and slot connection at 24 with said bolt. Said lever has a downturned end 25 which by means of a downwardly extending rod 26 is pivotally connected at 27 with a bolt retracting lever 28 which is pivoted intermediately of the base 10 at 29, said lever having at its outer end at one side of said truck a treadle 30. Preferably the said lever extends at its outer end through an

opening 10^a in the base of the stand or truck, so that the said treadle is located below the top of said base. It will be seen that by pressing the foot upon said treadle, the bolt 21 may be retracted, the head 18 then rotated to the desired position, and when the treadle is released the spring 31 will project the bolt into the registering opening 19 in the head 18, so that said head may be secured in any desired rotated position provided by the plurality of openings 19.

The rotary head 18 carries a yoke 35 shown clearly in Figs. 1, 2, 3 and 5, and the arms or forks 36 of said yoke are preferably inclined upwardly from the horizontal, so that when a cylinder casting such as 45 is secured in the opening or recess of said yoke, the parts of the motor will be supported in the most favorable position for assembling them. There extends from said yoke midway between its arms inclined supporting lugs 37, 60, 61, the function of which is to enter the spaces between the cylinder barrels of the cylinder casting, below the water jacket, and to prevent the same from slipping down while the casting is being secured rigidly in position. Said yoke is thus provided with a formed seat on which said casting rests. Each of the arms of said yoke carries clamping means, further illustrated in Fig. 7, and which preferably comprises a clamping arm or finger 38, which is adapted to be moved into or out of a recess 39 in said arm, while the inner end of said clamping arm or piece 38 is pivoted to the yoke arm at 40, at a distance from the end of said yoke arm, so that the outer end of the clamp is adapted to swing for a suitable distance about the pivot 40. There will therefore be provided opposing clamping devices on the yoke adapted to be set and fixed rigidly upon the cylinder casting, as indicated in dotted lines in Fig. 7. To this end each clamp 38 is adapted to be set in outward position by means of a bearing screw 41 which engages a screw-threaded opening in the corresponding yoke arm, its inner end bearing against the back of the clamp, while its outer end is provided with a hand-lever 42. Said clamps 38 need have but a slight backward movement relative to the formed seat of the yoke 35, so that the cylinder casting can be seated in said yoke and be then clamped by a slight forward movement of said clamps. The opposing faces of the arms of the yoke have a contour as at 43 which corresponds to the contour of the surface of the cylinder casting to be clamped while the opposing faces of the clamps also have a contour as at 44 to correspond with the surfaces of said casting to be engaged by the clamps. It will be seen that when the cylinder casting 45 is clamped in position, it will be inclined with respect to the vertical axis of the truck and will be in a favorable position for assembling the

other parts of the motor thereupon. This inclined position of the motor is indicated in dotted lines in Fig. 1.

As shown more clearly in Figs. 2, 3, 4, 8 and 9, the stand or truck is provided with means for lifting one of its wheeled ends from off the supporting surface for the device, so that the same will be held stationary. Such means preferably involve the use of a sort of jack and comprise a lifting member 46, which is guided through the base 10 of the truck at 47, at a point intermediately between the wheels at one end of the truck. Said lifting member extends upwardly through the base 10 and its upper end is pivoted at 48 to a power lever 49 which is pivoted at 50 to a bracket 51 secured to the truck base. Said lever 49 extends outwardly beyond one side of the truck and is provided with a treadle 52, so that by pressing the foot upon the latter, said lever will act upon the corresponding end of the truck so as to lift the same, upon the pivot 48 as a fulcrum. This action compresses a preferably leaf spring 53 which acts on the lifting lever 49 at a point between the truck base and said lever, and when the depression action of lever 49 is relieved, said spring acts to restore the parts to normal position. In order to lock the lever 49 in its depressed position, a suitable latch 55 may be provided, said latch being pivoted to the truck base at 56 and having a nose or lug 57 adapted to engage over and hold the lever depressed, while the lower end of said latch is provided with an arm 58 adapted to receive the pressure of the foot so as to unlatch said lever, and to oppose the tension of a spring 59 connected with the truck base and latch and which acts to automatically latch the said lever down when it is moved to a point below the nose 57 of the latch.

It is obvious that the invention is susceptible of modification as parts may be omitted, added and substituted without departing from the spirit and scope of the invention as claimed.

What we claim as new is:—

1. In a device of the class described, the combination of a support, means on said support having a formed seat in which an object may be engaged, said engaging means being rotatable into any desired position around a substantially horizontal axis, said formed seat being inclined to said horizontal axis, and the horizontality of said axis being maintained in all rotated positions of said engaging means, means on said engaging means for clamping such object in said seat, and means for setting said engaging means in the desired rotated position.

2. In a device of the class described, the combination of a support, means bearing substantially vertically on said support and

having a formed seat in which an object may be engaged and clamped, a substantially horizontal swivel connection between said support and said engaging means, said formed seat being inclined to said swivel connection, means on said engaging means for clamping such object in said seat, said engaging means being rotatable on said swivel connection, and means for setting said engaging means in rotated position.

3. In a device of the class described, the combination of a support, an embracing yoke having a seat extending from between the arms of said yoke along the adjacent surfaces of said arms, for receiving and engaging a cylinder casting of a motor, said seat having the approximate contour of such a casting, and said yoke being swiveled on said support, means having a limited movement relatively to said seat of said yoke for clamping such casting thereto while seated therein, whereby said casting may be seated upon the bottom of said seat and be engaged, at the opposite sides, by said arms and clamping means, and means for setting said yoke in a rotated position.

4. In a device of the class described, the combination of a support, an embracing yoke having a seat extending from between the arms of said yoke along the adjacent surfaces of said arms, for receiving and engaging an object to be supported, said seat having the approximate contour of the object to be held, and said yoke being swiveled on said support and inclined to its swivel, said swivel being substantially horizontal, means movable relatively to said seat of said yoke for clamping such object thereto while seated therein, said yoke being rotatable on its said swivel for one complete rotation with such object supported thereon, and means for setting said yoke in a rotated position.

5. In a device of the class described, the combination of a support provided with a yoke having a seat extending from between the arms of said yoke along the adjacent surfaces of said arms, for receiving and embracing an object, said seat having the approximate contour of the object to be held, clamps extending longitudinally of and pivoted at their inner ends to the respective arms of said yoke and movable relatively to said seat, said clamps facing and operable toward each other and normally guarded within parts of said arms, and set screws carried by said arms for operating said clamps as stated to grip such object.

6. In a device of the class described, the combination of a support provided with a swiveled yoke having a seat extending from between the arms of said yoke along the adjacent surfaces of said arms, for receiving and embracing an object to be supported, said seat having the approximate contour of

the object to be held, clamps pivoted to the respective arms of said yoke and having a limited movement relatively to said seat, said clamps facing each other, and said arms with said clamps being inclined with respect to the axis of the swivel of said yoke, and means for operating said clamps to grip such object whereby said object may be seated upon the bottom of said seat, and be engaged, at the opposite sides, by said arms and clamps.

7. In a device of the class described, the combination of a support provided with a swiveled yoke for embracing an object, exemplified by a cylinder casting of a motor, and which yoke is inclined to the axis of said swivel, said swivel being substantially horizontal, clamps pivoted at one end to the arms of said yoke and freely movable toward each other at the outer ends of said arms, and means carried by said arms in engagement with said clamps for operating them.

8. In a device of the class described, the combination of a support provided with a yoke for embracing an object exemplified by the cylinder casting of a motor, and which yoke is inclined to the horizontal, clamps pivoted at one end to the arms of said yoke and freely movable toward each other at the outer ends of said arms, and means carried by said arms in engagement with said clamps for operating them, the opposing faces of said arms and clamps providing a seat having the approximate curved contour of the said object to be grasped.

9. In a device of the class described, the combination of a support provided with a yoke for embracing the cylinder casting of a motor to be assembled, a lug projecting from said yoke into the space between its arms and adapted to enter between the cylinder barrels, and means for clamping said cylinder casting to said yoke.

10. In a device of the class described, the combination of a support provided with a yoke for embracing the cylinder casting of a motor to be assembled, a lug projecting from said yoke into the space between its arms and adapted to enter between the cylinder barrels, and means for clamping said cylinder casting to said yoke, said yoke and said lug being inclined upwardly from the horizontal, and the contact faces of said yoke, and clamping means being shaped to provide a seat having the approximate curved contour of said cylinder casting.

11. In a device of the class described, the combination of a support, a head horizontally swiveled to said support, means for removably securing an object in inclined position on said head, and means for fixing said head in different rotated positions with respect to the axis of said swivel.

12. In a device of the class described, the

combination of a support, a head horizontally swiveled to said support, means for removably securing an object in inclined position on said head, and a locking device 5 guided in said support, said head being provided with a plurality of recesses located around its swivel and engageable by said locking device.

13. In a device of the class described, the 10 combination of a support having a vertically disposed bearing surface, a head horizontally swiveled to said support and backed up against said bearing surface, permanently spaced arms carried by said head 15 and having between them a seating surface provided with an outwardly projecting lug, whereby a seating surface conformed substantially to the cylinders of a cylinder casting is provided, said lug being adapted 20 to enter between the cylinder barrels, and clamping means on said arms for holding such casting upon said arms.

14. In a device of the class described, the 25 combination of a support, a head horizontally swiveled to said support, permanently spaced arms carried by said head and having between them an outwardly projecting lug, whereby a seating surface conformed substantially to the cylinder barrels 30 of a cylinder casting is provided, said lug adapted to enter between the cylinder barrels, and clamping means on said arms for holding such casting upon said arms.

15. In a device of the class described, the 35 combination of a support, a head horizontally swiveled to said support, means for removably securing an object in inclined position on said head, a bolt guided in said support, said head being provided with a 40 plurality of holes located around its swivel and engageable by said bolt, a spring for projecting said bolt, and foot-operated means connected with said bolt, for its operation.

16. In a truck, the combination with a 45 base having wheels at each end, means above said base for supporting the cylinder casting of a motor to be assembled, and means for elevating one wheeled end of said base 50 above and inclining said truck to the supporting surface, comprising a fulcrum member adapted to bear on said supporting surface and guided through said base and a power device connected with said base and 55 fulcrumed on said member.

17. In a device of the class described, the 60 combination with a base, means above said base for supporting the cylinder casting of a motor to be assembled, and means for elevating one end of said base above and inclining said parts to the supporting surface, comprising a fulcrum member adapted to bear on said supporting surface and

guided through said base and a power device connected with said base and fulcrumed 65 on said member.

18. In a truck, the combination with a base having wheels at each end, a support extending upwardly from said base, a yoke extending outwardly from said support, a 70 supporting lug projecting from said yoke into the space between its arms, means for clamping the cylinder casting of a motor to be assembled in said yoke, and means for elevating one wheeled end of said base above 75 and inclining said truck to the supporting surface.

19. In a device of the class described, the combination of a support, means for engaging 80 an object to be supported, and being swiveled on said support, said engaging means being inclined to its said swivel, means on said engaging means for clamping such object thereto, said engaging means being rotatable on said swivel for one complete rotation, and the axis of said swivel 85 and its bearing lying substantially horizontal in all using positions of said engaging means and clamping means, and means independent of said swivel for setting said 90 engaging means in rotated position.

20. In a device of the class described, the combination with a base, means thereon for supporting an object to be operated on, a lifting member extending below said base 95 to rest on a support, and a power device having a connection with said base and fulcrumed on said lifting member for raising one end of said base above, and inclining it to, the supporting surface. 100

21. In a device of the class described, the combination with a base, means thereon for supporting an object to be operated on, a lifting member extending below said base to rest on a support, a power lever having 105 a pivotal connection with said base and fulcrumed on said lifting member, and means for locking said lever in its operated position.

22. In a device of the class described, the 110 combination with a base, means thereon for supporting an object to be operated on, a lifting member extending through and guided in said base to rest on a support, a power lever having a pivotal connection 115 with said base and fulcrumed on said lifting member, means for locking said lever in its operated position, and foot-operated means for releasing said locking means.

Signed at Detroit, Mich. this 24th day 120 of August, 1915.

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HORACE E. DODGE.

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