

Aug. 9, 1938.

A. W. MALL

2,126,336

PORTABLE GRINDING MACHINE

Filed Dec. 3, 1936

2 Sheets-Sheet 1

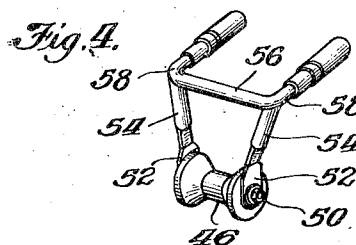
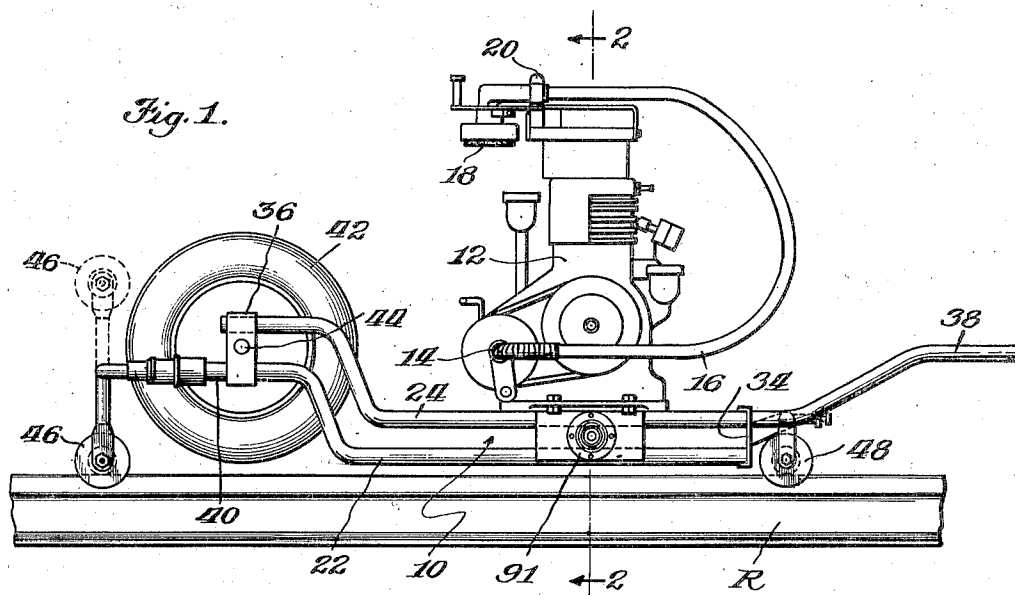


Fig. 2.

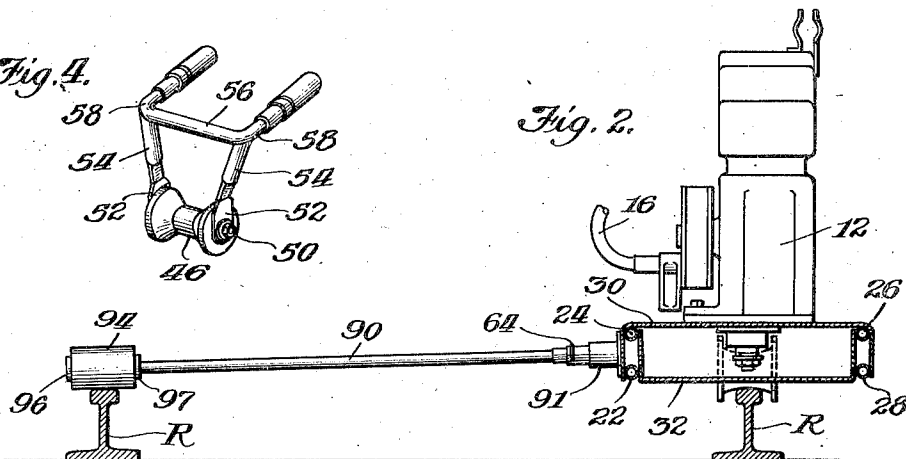
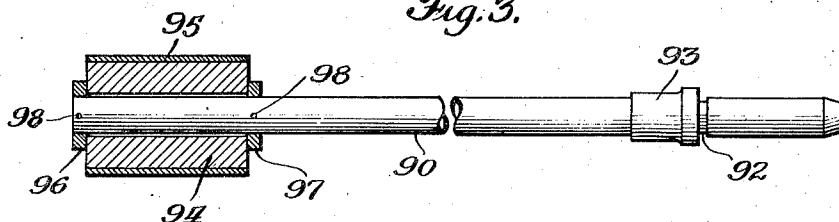


Fig. 3.



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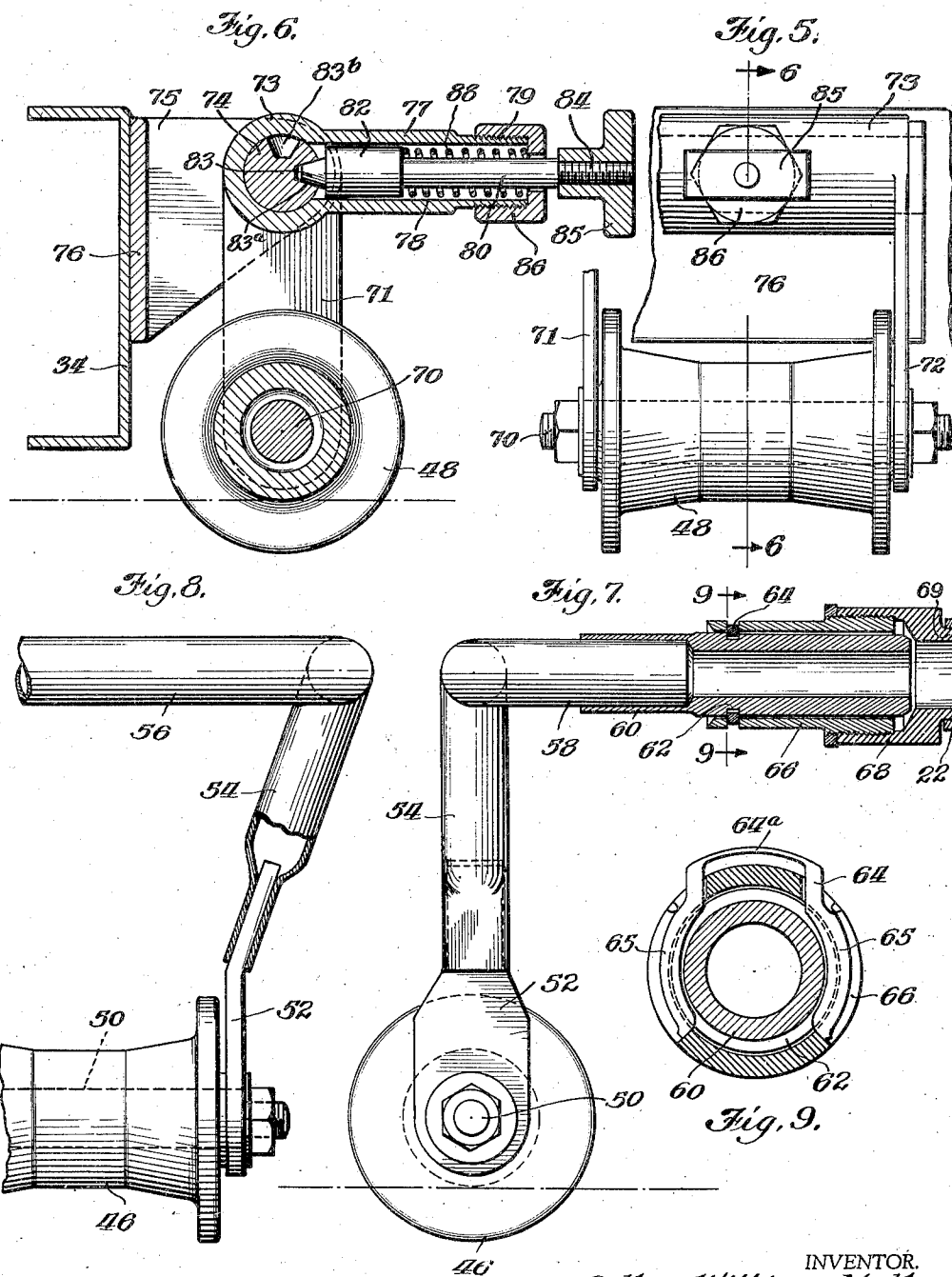
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PORTABLE GRINDING MACHINE

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2 Sheets-Sheet 2



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2,126,336

PORTABLE GRINDING MACHINE

Arthur William Mall, Chicago, Ill.

Application December 3, 1936, Serial No. 113,951

9 Claims. (Cl. 105-162)

My invention relates to improvements in portable grinding machines and similar devices.

My invention relates more particularly to improvements in the wheeled support of machines of this general type.

One of the commercially known devices of the general type described is shown in the patent to Arthur William Mall, No. 1,987,837. This device is generally constructed of a frame or carriage member, a power source mounted thereon and a wheel barrow type of support including the carriage and a pneumatic wheel at one end of the frame. Suitable handles extend from the other end of the frame so the assembly can be transported from place to place.

The principal object of the present invention is to provide an improved portable machine of the type described particularly adapted for use on railway track work and capable of being universally portable both on the railway track and along the road bed.

A further object is to provide a portable grinding machine which can be rolled along the rails of a track or pushed along the ground.

A further object is to provide an improved connection between the wheeled support and the carriage whereby the wheels used for moving the grinder upon the rails of a track can be placed in an inoperative position so that the barrow wheel for pushing the carriage along the ground will not be interfered with.

A further object is to provide a removable extension on one side of the machine capable of supporting the same in approximately an upright position when either on or off the track.

A further object is to provide an improved connection between the extension and the carriage so that the same may be easily connected or disconnected as desired.

A further object is to provide an improved track roller wheel mounted at the rear of the carriage capable of being swung upwardly into an inoperative position when desired.

A further object is to provide an improved front track engaging wheel support member capable of being released and reversed so that the same may be positioned on the same supports when in an inoperative position.

Other objects and advantages will be more apparent from the following description wherein reference is had to the accompanying two sheets of drawings, on which

Fig. 1 is a side elevational view of my improved portable grinding machine showing the track engaging wheels mounted upon a railway track;

Fig. 2 is a vertical sectional view taken generally on the lines 2-2 of Fig. 1 showing the outrigger with a roller mounted upon the adjacent railway track to support the machine in substantially an upright position;

Fig. 3 is an elevational view of the removable outrigger support with parts broken into section;

Fig. 4 is a perspective view of the front removable track engaging wheel unit;

Fig. 5 is a fragmentary and elevational view showing the rear track engaging wheel member;

Fig. 6 is a sectional view thereof taken generally on the lines 6-6 of Fig. 5;

Fig. 7 is a side elevational view of the front track engaging support and wheel with a portion thereof broken into section to show the manner in which the same is removably attached to the front of the carriage;

Fig. 8 is a fragmentary front view thereof, and

Fig. 9 is a vertical sectional view showing my improved locking member taken generally on the lines 9-9 of Fig. 7.

In the embodiment of my invention which I have illustrated, I provide the central frame portion 10 upon which a gasoline engine or other power source 12 is mounted. The power source may have a power take-off shaft 14 connected to a flexible drive shaft 16 which is provided at its end with a grinding wheel 18 or other tool element. A suitable clamp 20 is provided on the engine for carrying or supporting the tool 18 and shaft 16 when the same is not in use.

The carriage 10 may be formed of metallic tubular members 22, 24, 26 and 28 to provide a generally rectangular frame. These tubular members may be connected together generally as shown by the plate members 30 and 32 to provide rigidity. A suitable rear end plate 34 may connect the same together at this end of the machine.

The power source 12 may be swivelly mounted as more clearly shown and described in the patent heretofore referred to. The upper tubular members 24 and 26 may extend forward at their front end and engage in a block member 36 and may extend rearwardly in an upward direction to provide the handle members 38. The lower tubular members 22 and 28 may extend upwardly and forward at their front end and engage in the block member 36 with a portion 40 extending forward from the same. A pneumatic wheel 42 may be mounted upon an axle 44 secured in the blocks 36 at the forward end of the tubular members.

In order to support the machine upon a rail R

of a railway track, I provide a pair of flanged roller members 46 and 48. The roller member 46 may be suitably mounted upon a stub shaft 50 journaled in a pair of upwardly extending bearing plates 52 that are secured in the lower ends of a pair of tubular arms 54. The tubular arms 54 may be welded or otherwise secured to a cross frame member 56 formed with the rearwardly extending portions 58. Each of the ends 58 is secured in a sleeve member 60 provided with a slot 62 for receiving a locking ring 64. The locking ring 64 is adapted to be mounted in a sleeve member 66 screw threadedly secured in the end of a connector member 68. The connector member 68 is formed with a reduced portion 69 adapted to extend into the end of the tubular support members 22 and 28 and be secured therein by welding or otherwise (see Fig. 7).

The locking ring 64 may be of the type shown and described in the patent to Arthur William Mall, No. 2,021,241, and is of the general type wherein pressure upon the spring portion 64a of the same will spread the arcuate arms 65 so that the telescoped member 60 can be withdrawn from the collar 66. With the connection as thus shown and described, it can be seen that it is a comparatively simple matter to press downwardly upon the spring portion 64a of the lock ring 64, and by pulling forward on the roller support unit, the same can be disconnected from the frame or carriage 10. It will further be apparent that the same can be turned around and positioned as shown in the dotted lines in Fig. 1 when it is desired.

The rear flanged roller 48 is adapted to be mounted upon a stub shaft 70 secured in the lower end of a pair of arms 71 and 72 extending downwardly from a bracket member 73. The bracket member 73 is carried upon a rod member 74 mounted between the arms 75 of a support bracket 76. The support bracket 76 is welded or otherwise rigidly secured to the rear side of the frame end member 34. The bracket 73 is formed with a right angle extension 77 that is provided with a bore 78 and a screw threaded reduced end 79. A plunger member 80 is adapted to be mounted in the bore 78 having an enlarged portion 82 formed with a tapered nose 83. The opposite end of the member 80 may be screw threaded as shown at 84 to carry a handle 85. A closure collar 86 mounted upon the screw threaded end 79 encloses a compression spring 88 against the end of the portion 82 of the plunger 80. When it is desired to raise the flanged wheel 48 from its rail engaging position the plunger 80 may be moved to release the nose 83 from its complementary opening 83a in the rod 74. The assembly may then be swung in a counterclockwise direction until the nose 83 engages the complementary opening 83b, at which point it may be released to engage the same and the flanged wheel will be rigidly held in an operative position.

With the forward flanged roller 46 in the dotted position shown and the rear flanged roller 48 raised as described, it can be seen that the entire assembly may be moved about on the pneumatic wheel 42.

In order to support the machine in an upright position when the flanged rollers 46 and 48 are upon one rail of the track, I have provided an extension or outrigger member 90. This member may be suitably attached to a collar 91 fastened on the side of the central frame portion

30 of the machine by a coupling lock 64 similar to that previously described, which may engage in the grooved portion 92 of the collar member 93 secured to one end of the outrigger 90. In the opposite end of the outrigger I provide a roller 94 which is covered with a layer of insulation 95 so that no electrical circuit can be completed through the machine between the rails. The roller 94 may be held upon the outrigger 90 by a pair of collar members 96 and 97 secured in position by the members 98. With the construction as thus provided it can be seen that when the outrigger is locked into the collar 91 by the lock member 64, the entire assembly may be mounted upon the rollers 46 and 48 and the roller 94 so that the assembly can be moved back and forth upon the track with the least possible effort.

From the above and foregoing it will be apparent that applicant has provided a highly improved portable machine of the type described, one that is equally convenient to roll back and forth upon the rails of the track or when it is desired to move the same in other directions, the rollers 46 and 48 can be easily and quickly mounted in an inoperative position, the outrigger 90 easily and quickly detached, and a portable machine is then provided capable of being moved about upon the pneumatic wheel 42.

While I have illustrated and described a specific embodiment of the invention, it will be apparent to those skilled in the art that changes and modifications may be made in the exact details shown, and I do not wish to be limited in any particular; rather what I desire to secure and protect by Letters Patent of the United States is:

1. In a machine of the class described a frame, a pair of rail engaging flanged rollers mounted one at the front and one at the rear of said frame and an unflanged wheel mounted upon said frame and normally aligned with and overlying the rail on which the flanged rollers ride, the lowest portion of said wheel being positioned above the level of the rail when both the flanged rollers engage the rail, said unflanged wheel mounted at the forward end of said frame but to the rear of said forward flanged roller, both of said flanged rollers capable of movement to an inoperative position, and handle means associated with said frame whereby said frame may be tilted to bring said unflanged wheel into contact with a supporting surface when the flanged rollers are in an inoperative position.

2. In a machine of the class described a frame, a pair of rail engaging flanged rollers mounted one at the front and one at the rear of said frame and an unflanged wheel mounted upon said frame and normally aligned with and overlying the rail on which the flanged rollers ride, the lowest portion of said wheel being positioned above the level of the rail when both the flanged rollers engage the rail, said unflanged wheel mounted at the forward end of said frame but to the rear of said forward flanged roller, both of said flanged rollers capable of movement to an inoperative position, handle means associated with said frame whereby with said flanged rollers in an inoperative position said frame may be tilted to bring said unflanged wheel into contact with a supporting surface, and an outrigger extending sideways from said frame and adapted to support said machine in a substantially vertical position.

3. In a machine of the class described a frame, a pair of rail engaging flanged rollers mounted one at the front and one at the rear of said frame

and a pneumatic wheel mounted upon said frame and normally aligned with and overlying the rail on which the flanged rollers ride, the lowest portion of said wheel being positioned above the level of the rail when both the flanged rollers engage the rail, said unflanged wheel mounted at the forward end of said frame but to the rear of said forward flanged roller both of said flanged rollers capable of movement to an inoperative position, handle means associated with said frame whereby with said flanged rollers in an inoperative position said frame may be tilted to bring said pneumatic wheel into contact with a supporting surface, an outrigger extending sideways from said frame, a roller thereon for engaging an adjacent track rail and adapted to support said machine in a substantially vertical position.

4. In apparatus of the class described the combination of a frame having a central portion adapted to be aligned over one rail of a track, a wheel support projecting upwardly from the forward end of said central portion, a barrow wheel rotatably mounted on said upwardly projecting portion, a flanged roller secured to the rear end of said central portion and extending below the plane of said barrow wheel and a flanged roller secured to said wheel support forward of said barrow wheel and extending below the plane of said wheel, both of said rollers capable of being raised to an inoperative position.

5. In apparatus of the class described the combination of a frame having a central portion adapted to be aligned over one rail of a track, a wheel support projecting upwardly from the forward end of said central portion, a barrow wheel rotatably mounted on said upwardly projecting portion, a flanged roller secured to the rear end of said central portion and extending below the plane of said barrow wheel, a flanged roller secured to said wheel support forward of said barrow wheel and extending below the plane of said wheel, both of said rollers capable of being raised to an inoperative position, a removable outrigger extending from one side of said frame and a roller thereon adapted to rest on an adjacent track rail to support said machine in a vertical position.

6. In apparatus of the class described the combination of a frame having a central portion adapted to be aligned over one rail of a track, a wheel support projecting upwardly from the forward end of said central portion, a barrow wheel rotatably mounted on said upwardly projecting portion, a flanged roller secured to the rear end of said central portion and extending below the plane of said barrow wheel, said roller capable of movement to an inoperative position, a flanged roller secured to said wheel support forward of said barrow wheel and extending below the plane of said wheel, said roller supported on the ends

of said wheel support, means operable to permit the removal and inverting of said roller to an inoperative position, and means associated with one side of said machine for supporting the same in a vertical position.

7. In apparatus of the class described a frame, a platform on said frame, a handle extending upwardly from the rear end of said frame, an extension upwardly from the front end of said frame, a barrow wheel rotatably mounted on said front extension and a pair of flanged rollers longitudinally aligned with said barrow wheel, one of said rollers mounted at the rear of said platform and the other of said rollers mounted forward of said barrow wheel on said forward extension, said rollers so positioned that when engaging a rail the barrow wheel will be raised therefrom and means associated with said rollers for holding the same optionally in a raised position above the bottom of said barrow wheel.

8. Apparatus of the class described comprising a frame having a central portion adapted to be aligned over one rail of a track, a wheel support projecting upwardly from the forward end of said central portion, a barrow wheel rotatably mounted on said upwardly projecting portion, a pair of flanged rollers, one mounted on the rear end of said central portion, and the other mounted forward of said barrow wheel on said wheel support, said rollers capable of movement to an inoperative position, a handle portion extending upwardly from the end of the frame opposite the barrow wheel, the axis of said barrow wheel and said flanged rollers being parallel, said barrow wheel normally raised from the track rail when said rollers engage the track rail and a detachable outrigger extending from one side of said frame having a roller thereon engaging the other track rail.

9. Apparatus of the class described comprising a frame having a central portion adapted to be aligned over one rail of a track, a wheel support projecting upwardly from the forward end of said central portion, a barrow wheel rotatably mounted on said upwardly projecting portion, a pair of flanged rollers, one mounted on the rear end of said central portion, and the other mounted forward of said barrow wheel on said wheel support, a handle portion extending upwardly from the end of the frame opposite the barrow wheel, the axes of said barrow wheel and said flanged rollers being parallel and said flanged rollers movable to an inoperative position to permit movement of said machine on said barrow wheel, said rollers so positioned that when engaging a rail the barrow wheel will be raised therefrom, and means associated with said rollers for holding the same optionally in a raised position above the bottom of said barrow wheel.

ARTHUR WILLIAM MALL. 60