

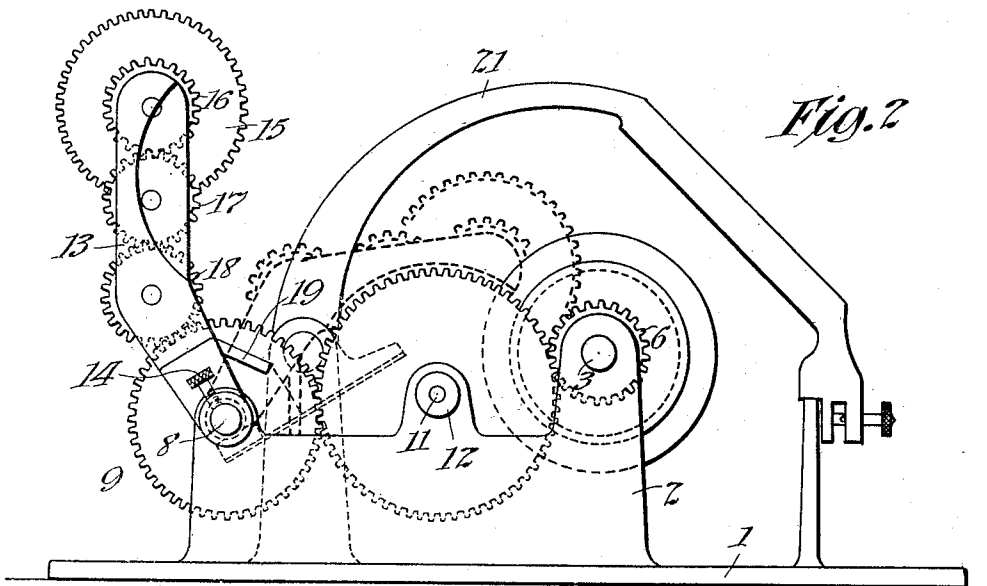
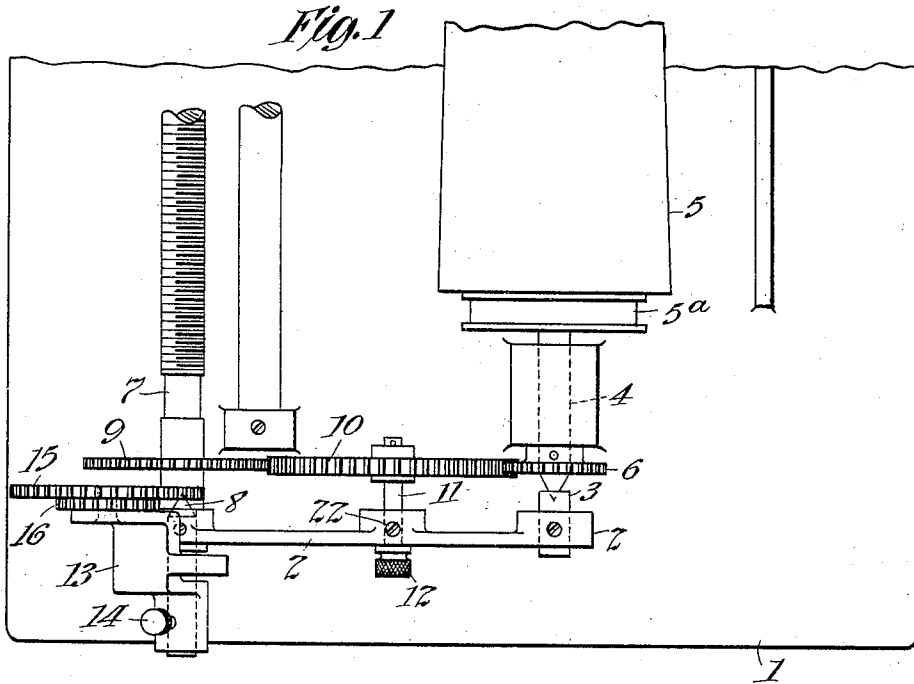
P. WEBER.
PHONOGRAPH.

APPLICATION FILED JAN. 20, 1908.

932,201.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 1.



Witnesses:
Frank D. Lewis
Delos Holden

Inventor.
Pete Weber
by Frank L. Roper
Atty.

P. WEBER.
PHONOGRAPH.

APPLICATION FILED JAN. 20, 1908.

932,201.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 2.

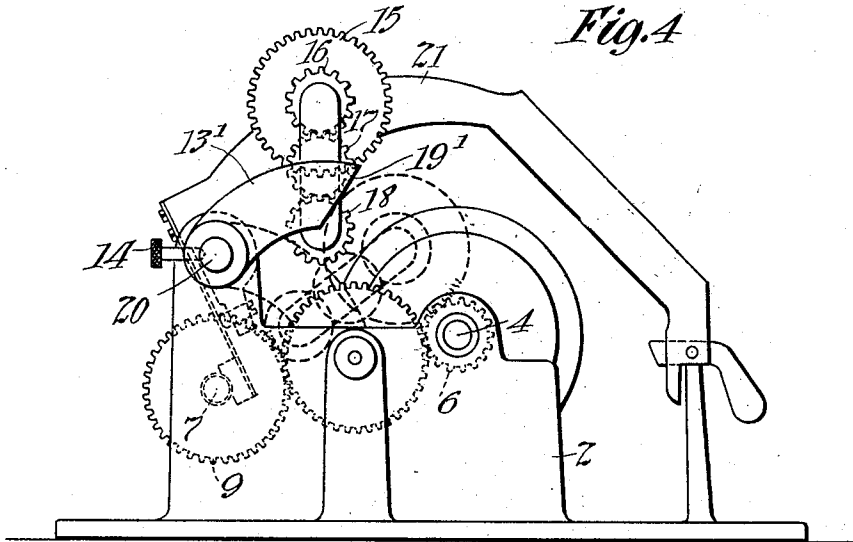
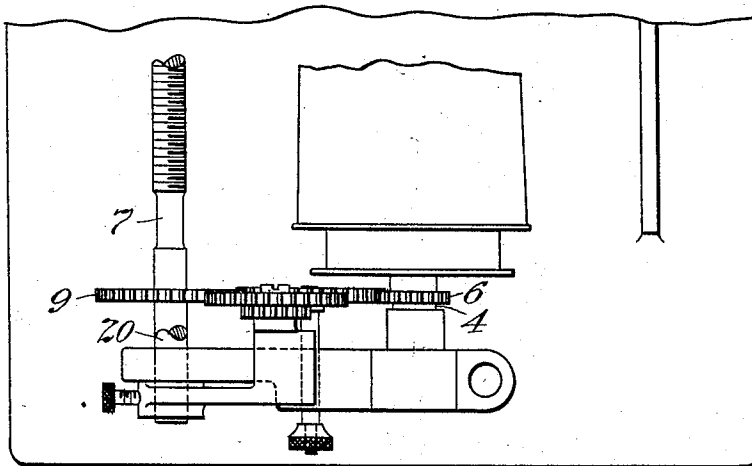


Fig. 3



Witnesses:

Frank D. Lewis
Delos Holden

Inventor:

Peter Weber

by Frank L. Brown
Atty.

UNITED STATES PATENT OFFICE.

PETER WEBER, OF ORANGE, NEW JERSEY, ASSIGNOR TO NEW JERSEY PATENT COMPANY, OF WEST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

PHONOGRAPH.

932,201.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed January 20, 1908. Serial No. 411,830.

To all whom it may concern:

Be it known that I, PETER WEBER, a citizen of the United States, and a resident of Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Phonographs, of which the following is a description.

My invention relates to phonographs of the type wherein the sound box is carried on a traveling carriage to which a progressive movement is imparted by means of a rotating feed screw, so that the reproducer or recorder stylus traces a spiral path with respect to the record surface. It has been the usual practice for many years to provide a feed screw of fine pitch which will advance the traveling carriage a distance of one one-hundredth of an inch for each revolution of the mandrel. More recently, however, it has been found possible to manufacture a sound record in which the record groove has two hundred turns or threads to the inch, so that it is desirable to provide a phonograph in which the feed of the carriage will be suitable for operating upon a record of this description. In view of the fact, however, that there are already thousands of phonographs in use in which the feed screw advances the carriage one one-hundredth of an inch per mandrel revolution, and a vast number of records are also in use having a pitch of one one-hundredth of an inch, it is desirable to provide means which may readily be applied to such phonographs whereby the feed screw may be driven at one-half the speed at which it has been heretofore driven, such means also permitting the driving of the feed screw at its usual speed, so that the phonograph can be used interchangeably with sound records having either one hundred or two hundred threads per inch, and my invention has for its object the provision of interchangeable means of this character which may be readily applied to a phonograph and in which, when so applied, the parts may be readily shifted with respect to each other, so as to drive the feed screw at the desired rate of speed.

Reference is hereby made to the accompanying drawings, of which—

Figure 1 is a plan view showing a portion of a phonograph constructed in accordance with my invention; Fig. 2, is a side elevation of the same, and Figs. 3 and 4 are similar views illustrating a modification.

The phonograph shown in Figs. 1 and 2 is of a well-known form and comprises a base 1, formed with an upright 2 having a center 3 which supports one end of the mandrel shaft 4, which carries the mandrel 5. A drive pulley 5^a is secured to the shaft 4, and is adapted to receive the driving belt from the motor. A drive gear 6 is fixed to the shaft 4. Parallel to the mandrel shaft 4 and in the rear thereof is the feed screw 65 shaft 7, one end of which is supported upon the pivot pin or center 8, carried by the upright 2. A gear 9 is fixed to the shaft 7 and is adapted to be driven by a gear 10 rotatably mounted on a movable pin 11 which is supported in a boss formed on the upright 2. The gear 10, when in the position of Fig. 1, is in engagement with the gears 6 and 9, and the shaft 7 is driven from the shaft 4 through the gears 6, 10 and 9 which are proportioned for driving the shaft 7 and feeding the sound box carriage 21 at the proper speed for operating upon a sound record, the pitch of which is one one-hundredth of an inch. The pin 11 is provided with a knob or head 12 for moving the same longitudinally thereby removing the gear 10 from engagement with the gears 6 and 9. A set screw 22 may be provided for holding the pin 11 in any desired position.

In order that the shaft 7 may be driven at a speed suitable for operating upon a record having two hundred threads per inch, I provide a frame or support 13 which is mounted upon the end of the pin 8 which projects beyond the upright 2, said frame being angularly adjustable upon said pin and adapted to be clamped in a fixed position by means of a set screw 14. This frame carries a gear train composed of spur gears 15, 16, 17 and 18. The frame 13 may be moved in a direction parallel with the axis of the shaft 7 so as to bring the gear 18 into and out of engagement with the gear 9. When the gear 10 is in the position of Fig. 1 for driving the shaft 7 at a speed for operating upon records having one hundred threads to the inch, the frame 13 will preferably occupy the position shown in Figs. 1 and 2, although, of course, it could occupy a position in which the gear 18 engages the gear 9, provided the gear 15 is not in engagement with the gear 6. In this case, however, the gears carried by the frame 13 would be driven as idlers, thus introducing

unnecessary friction. When the frame 13 is adjusted upon the pin 8 from the position shown in full lines, Fig. 2, to the position indicated in dotted lines, the gear 15 will be brought into engagement with the driving gear 6, and the gear 10 having been moved out of engagement therewith, the shaft 7 will be driven through the gear train 6, 15, 16, 17, 18 and 9, and these gears are so proportioned that the speed of the shaft 7 will be suitable for feeding the sound box carriage with respect to a sound record having two hundred threads per inch. All that is necessary to convert the machine into one suitable for a record of one hundred threads to the inch is to move the frame 13 into the position shown in the drawing, securing it by the set screw 14, and then move the gear 10 into the position shown, which operation can be readily understood and performed by the ordinary user of a phonograph. The frame 13 is preferably provided with a projecting foot 19 which is adapted to rest upon the upper edge of the upright 2 when the frame 13 is in the position shown in dotted lines, Fig. 2, thereby supporting the frame 13 in its operative position.

The phonograph shown in Figs. 3 and 4 is similar in its general features to that of Figs. 1 and 2. The guide rod 20 in the machine of Figs. 3 and 4 is situated above the shaft 7, and upon its outer end may be secured the frame 13', which is similar to the frame 13 and which carries the gear train 15, 16, 17 and 18 adapted to operatively connect the gears 6 and 9 carried by the shafts 4 and 7. The frame 13' has a foot 19' adapted to rest upon the upright 2, and a set screw 14 is provided for holding the frame 13' in its inoperative position as shown in full lines, Fig. 4. In this position the gear 18 will necessarily be out of engagement with the gear 9, and it is therefore unnecessary to move the frame 13' in a direction parallel to the axis of the shaft 7. In all other respects the device of Figs. 3 and 4 is the same as that of Figs. 1 and 2.

It will be noted that in my invention the frame of an existing type of phonograph is made use of unchanged, the only changes which must be made to the same to adapt the machine to operate on one hundred and two hundred thread records interchangeably, being the substitution of the sliding stud 11 for the fixed stud for carrying the intermediate gear 10 of the existing gear train between the mandrel shaft and the feed screw shaft, this stud 11, of course, being lengthened, and the substitution of the prolonged center 8 for the feed screw shaft for the short center for the feed screw shaft found in the existing one hundred thread machine. On the prolongation of the center 8 is placed the supporting frame 13 carrying the gear train as above described.

Having now described my invention, what I claim is:

1. In a phonograph, the combination of the mandrel and feed screw shafts having gears fixed thereto, of an upright carrying centers supporting one end of each of the same, one of said centers being prolonged, a support pivotally mounted on the prolongation of said center, said support carrying intermeshing gears adapted to be moved into and out of engagement with said fixed gears, substantially as described.

2. In a phonograph, the combination of the mandrel and feed screw shafts having gears fixed thereto, of an upright carrying centers supporting one end of each of the same, one of said centers being prolonged, a support pivotally mounted on the prolongation of said center, said support carrying intermeshing gears adapted to be moved into and out of engagement with said fixed gears, and means for clamping said support in fixed position, substantially as described.

3. In a phonograph, the combination of the mandrel and feed screw shafts having gears fixed thereto, of an upright carrying centers supporting one end of each of the same, one of said centers being prolonged, a support pivotally mounted on the prolongation of said center, gear means carried thereby, and so positioned that a pivotal movement of said support throws the said gear means into or out of engagement with said fixed gears to connect or disconnect the same, substantially as described.

4. In a phonograph, the combination of the mandrel and feed screw shafts having gears fixed thereto, of an upright carrying centers supporting one end of each of the same, one of said centers being prolonged, a support pivotally mounted on the prolongation of said center, gear means carried thereby, and so positioned that a pivotal movement of said support throws the said gear means into or out of engagement with said fixed gears to connect or disconnect the same, a frame, and a projection on said pivoted support adapted to contact said frame when said support is in position to interconnect said fixed gears, substantially as described.

5. In a phonograph, the combination of the mandrel and feed screw shafts having gears fixed thereto, of an upright carrying centers supporting one end of each of the same, one of said centers being prolonged, a support pivotally mounted on the prolongation of said center, gear means carried thereby, and so positioned that a pivotal movement of said support throws the said gear means into or out of engagement with said fixed gears to connect or disconnect the same, and other gear means movable into and out of mesh with said fixed gears when said pivotal support is in inoperative position, to drive one of said fixed gears from the

other at a different ratio from that given by the gear means of the pivotal support, substantially as described.

5 6. In a phonograph, the combination of
the mandrel and feed screw shafts having
gears fixed thereto, of an upright carrying
centers supporting one end of each of the
same, one of said centers being prolonged, a
support pivotally mounted on the prolonga-
10 tion of said center, gear means carried there-
by, and so positioned that a pivotal move-
ment of said support throws the said gear
means into or out of engagement with said
fixed gears to connect or disconnect the
15 same, and other gear means movable axially
of said shafts, when said pivotal support is in
inoperative position, to drive one of said
fixed gears from the other at a different ratio
from that given by the gear means of the piv-
20 otal support, substantially as described.

7. In a phonograph, the combination of
the mandrel and feed screw shafts having
gears fixed thereto, and a frame carrying
gear means adapted to interconnect said

fixed gears, said frame being mounted to be 25
movable angularly and in a direction paral-
lel to said shafts to interconnect or discon-
nect said fixed gears, substantially as de-
scribed.

8. In a phonograph, the combination of 30
the mandrel and feed screw shafts having
gears fixed thereto, and a frame carrying
gear means adapted to interconnect said
fixed gears, said frame being mounted to be
movable angularly and in a direction paral- 35
lel to said shafts to interconnect or discon-
nect said fixed gears, and other gear means
also movable into and out of mesh with said
fixed gears to interconnect the same with a
different gear ratio, substantially as de- 40
scribed.

This specification signed and witnessed
this 13 day of Jan. 1908.

PETER WEBER.

Witnesses:

FRANK D. LEWIS,
H. H. DYKE.