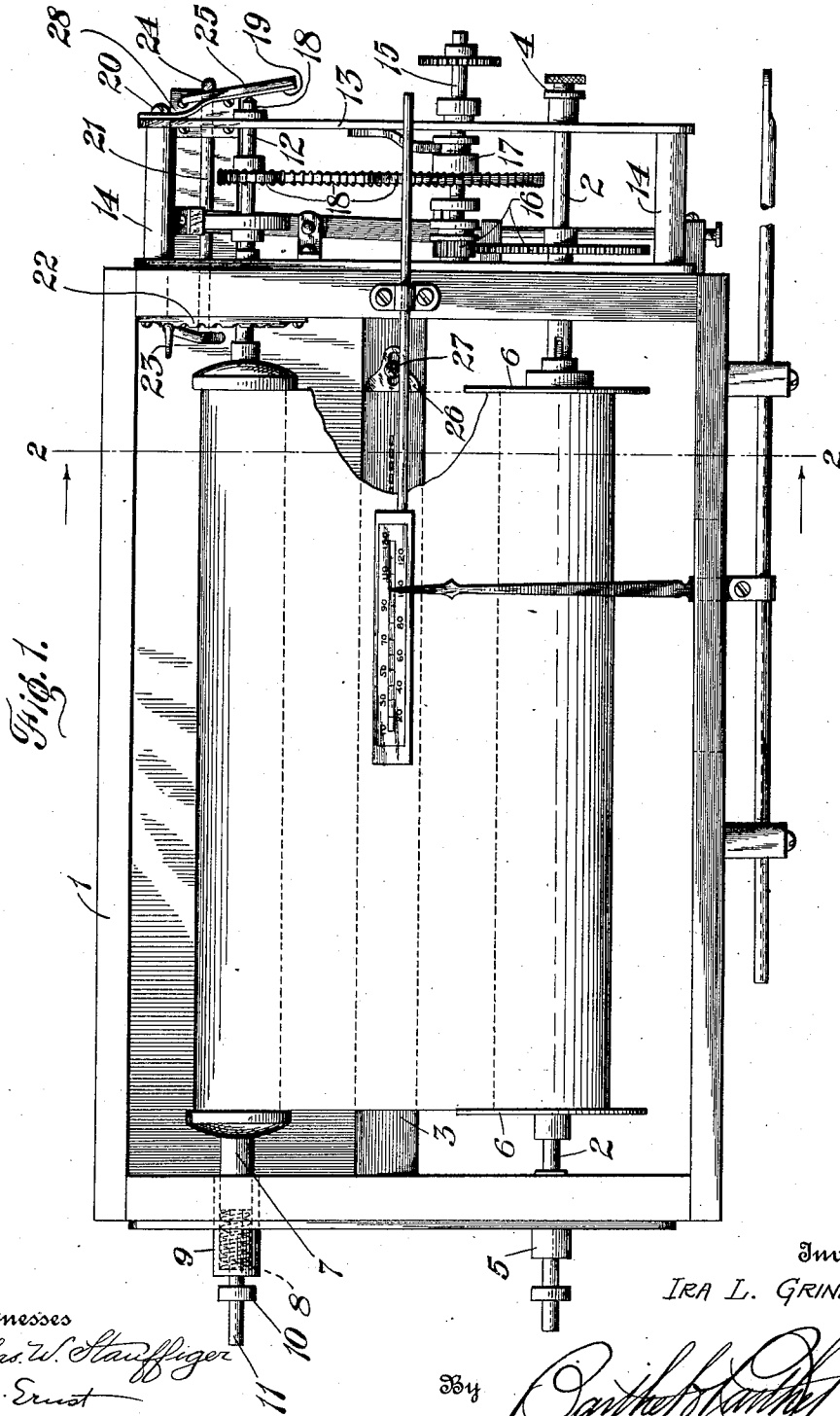


1,014,059.

Patented Jan. 9, 1912.

2 SHEETS-SHEET 1.



Witnesses
Chas. W. Stauffer
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Inventor
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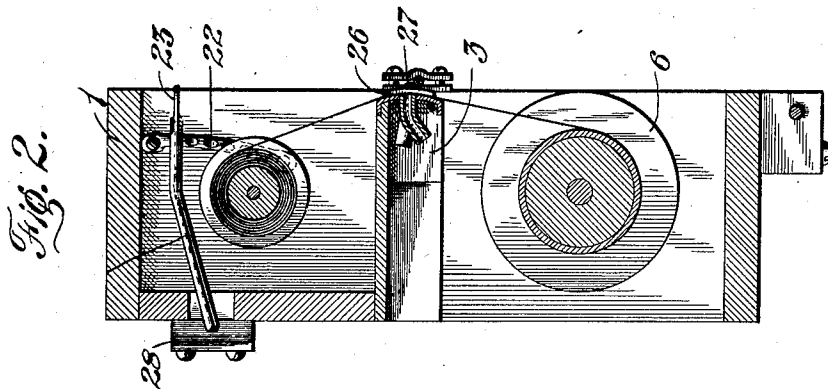
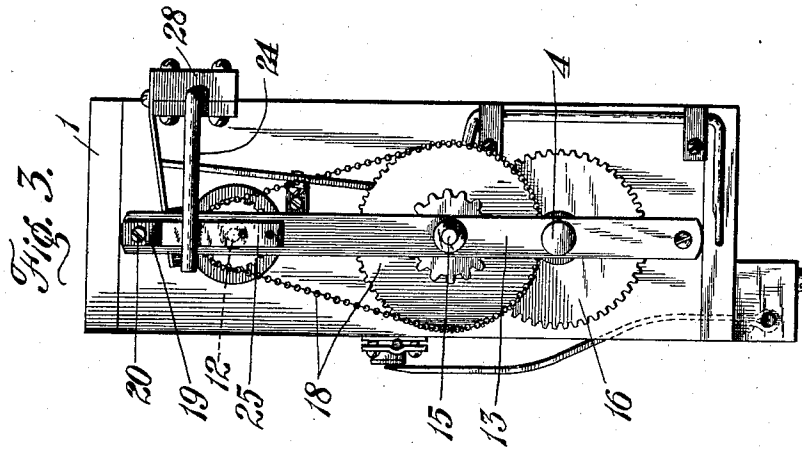
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I. L. GRINNELL.
PIANO PLAYER.
APPLICATION FILED MAR. 13, 1911.

1,014,059.

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2 SHEETS—SHEET 2.



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IRA L. GRINNELL, OF DETROIT, MICHIGAN.

PIANO-PLAYER.

1,014,059.

Specification of Letters Patent.

Patented Jan. 9, 1912.

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To all whom it may concern:

Be it known that I, IRA L. GRINNELL, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Piano-Players, of which the following is a specification, reference being had therein to the accompanying drawings.

In the operation of piano players where-
in a perforated roll is used that passes from
a spool over a tracker board, it is desirable
to hold the roll as closely as possible in
register with the apertures of the tracker
board without imposing undue strain or
wear upon the margin of the roll by which
it is usually held in place. Slight variations
in the length of the roller or spool on
which the roll is wound together with any
inequalities of the roll itself often cause
fluctuations which in time wear away the
margins of the roll where it contacts with
the flanges of the main driving roll which
are usually the only means that direct the
strip over the tracker board, and even if the
flanges or guides on the spool are in alignment
with the flanges of the main driving
roll they may not be in proper adjustment
with the tracker board, or may not be sufficient
to hold the roll in register as they
are necessarily at some distance from the
board.

This invention relates to piano players
and more particularly to means for adjusting
and holding the roll in proper relation
to the tracker board.

The invention consists in the matters
hereinafter set forth, and more particularly
pointed out in the appended claims.

In the drawings, Figure 1 is a view in
front elevation of the roll mechanism,
tracker board and adjusting means of a
piano player that embodies features of the
invention; Fig. 2 is a view in section on or
about line 2—2 of Fig. 1; and Fig. 3 is a
view in end elevation thereof.

As herein shown a casing 1 adapted to be
secured in a piano case has bearings in
which a roll shaft 2 is journaled in parallel
relation to a tracker board 3, a thumb screw
4 and a stop collar 5 or other suitable means
being provided for slight longitudinal adjustment.
Guide flanges 6 are disposed in spaced
relation on the roll, and one or both

may be yieldingly shiftable lengthwise of
the shaft.

A spool bearing 7 is mounted at one end
of the casing on the other side of the tracker
board from the shaft 2 and in parallel relation
thereto. This bearing is yieldingly forced
toward the interior of the casing as by a
spring 8 in a tubular socket or sleeve 9
in which the bearing plays; a stop collar 10
encircling the stem 11 of the bearing which
passes through an end opening of the sleeve
limits its inward movement.

A drive shaft 12 in the other end of the
casing in axial alinement with the bearing 9
is reciprocable and rotatable in bearings in
the casing end and in a bearing plate 13
secured in spaced relation to the end of the
casing as by brackets or rods 14. The inner
ends of the bearing 9 and of the shaft 12
are adapted to receive a music roll spool
inserted between them and hold the latter in
operative relation to the tracker board 3 and
shaft 2.

A main drive shaft 15 is coupled as
through a gear train indicated at 16 with a
shaft 2 and likewise may be thrown in gear
through a clutch indicated at 17 and a chain
and sprockets indicated at 18 with the shaft
12 which is used for a rewind or reverse
drive. The driving connections between the
shafts do not form a material part of the
invention and may be of any preferred type
which permits slight longitudinal movement
of the shaft 12 in relation to the main shaft
15 without disturbing the driving connections.

The outer end of the shaft 12 bears against
a spring or otherwise movably attached
finger 19 that normally stands oblique to the
bearing plate 13 to which one end is secured
as by a screw 20. A rock shaft 21 is secured
in a bearing between the back of the casing
1 and a block 28 in parallel relation to the
shaft 12. The portion of the rock shaft
within the casing 1 is bent transversely to
bear against a notched quadrant plate 22 on
the inner face of the casing end, the outer
extremity of the transverse portion having
a finger hold 23 by which it may be readily
manipulated. A rock arm 24 extends transversely
from the other end of the rock shaft 21 to
bear against the outer face of the arm of
the spring finger 19, which if preferred,
may have a facing plate 25 on which the

arm 24 rides. The parts are so adjusted that movement of the finger piece 23 downward on the quadrant 22 forces the spring finger 19 inwardly and thereby shifts the
5 shaft 12 longitudinally.

The tracker board 3 is provided with a gage plate 26 adjustably secured against its face as by a screw 27 passing through a longitudinal slot in the gage. It is ad-
10 justed in alinement with the inner face of the adjacent guide flanges 6 of the main roll shaft 2.

By manipulation of the finger pull 23, the shaft 12 may be shifted so as to bring the
15 inner face of the flange 29 of a roll spool inserted between the shaft 12 and the spring-pressed bearing 9 into alinement with the gage 26 and the flange 6 after the roll strip has been drawn over the tracker
20 board and secured to the roll of the shaft 2 in the usual manner. By this method of adjustment the variations of thickness which occur in the end flanges of music roll
25 spools and in the distance between the inner guide faces of the spool flanges and the bearing sockets in the spool in which the drive shaft is inserted, may be compensated for so that the music roll travels readily
30 along the gage of the tracker board and is held in register with the apertures of the board by the margin contacting with this gage without undue wear which soon frays the margin and prevents its proper adjust-
35 ment in relation to the apertures of the tracker board. Furthermore, the adjustability of the tracker board gage itself enables any variations in widths in rolls of different makes to be compensated for. Thus complete adjustment, first between the
40 roll itself and tracker board, and then between the gage of the tracker board and the spool flanges, is possible with the arrangement of parts shown.

Obviously, changes in the details of construction may be made without departing
45 from the spirit of the invention and I do not wish to limit myself to any particular form or arrangement of parts.

What I claim is:—

50 1. In piano player mechanism, a casing, a tracker board therein, a roll spool bearing longitudinally movable and rotatable in one end of the casing parallel to the board, a spring yieldingly projecting the bearing in-
55 wardly, a spool bearing and driving shaft rotatable and reciprocable in the other end of the casing in alinement with the spool bearing, a rock shaft journaled in the casing parallel to the roll driving shaft, a spring
60 finger secured at one end to the casing with its free end in contact with the spool bearing shaft, a rock arm from the rock shaft adapted to move the free end of the spring
65 finger when the rock shaft is rotated, a fin- ger pull extension on the rock shaft, and a

quadrant on the casing yieldingly engaged by the finger pull extension.

2. In piano player mechanism, a casing, a tracker board in the casing, a gage longi-
70 tudinally adjustable on the face of the tracker board, a bearing rotatable and longi- tudinally reciprocable in one end of the cas- ing, a spring yieldingly projecting the bear- ing inwardly, a bearing plate secured in spaced relation to the outer side of the other
75 end of the casing, a spool driving shaft re- ciprocable and rotatable in the bearing plate and the adjacent end of the casing in axial alinement with the spool bearing, a spring finger secured at one end on the bear-
80 ing plate with its other end yieldingly con- tacting with the outer end of the spool bear- ing and driving shaft, a quadrant on the in- ner side of the casing end adjacent the bear- ing plate, a rock shaft journaled in the bear-
85 ing plate and adjacent end of the casing with one inbent end forming a finger pull yieldingly engaging the quadrant, a rock arm on the other end of said shaft riding in contact with the spring finger adapted to
90 move the latter inwardly when the rock shaft is swung, and means mounted on the casing end and bearing plate adapted to ro- tate the spool bearing and drive shaft re-
95 gardless of the longitudinal position of the latter.

3. In piano player mechanism, a casing, a tracker board in the casing, a gage longi-
100 tudinally adjustable on the face of the tracker board, a bearing rotatable and longi- tudinally reciprocable in one end of the cas- ing, a spring yieldingly projecting the bear- ing inwardly, a bearing plate secured in spaced relation to the outer side of the other
105 end of the casing, a spool bearing and driv- ing shaft reciprocable and rotatable in the bearing plate and the adjacent end of the casing in axial alinement with the spool bearing, a spring finger secured at one end
110 of the bearing plate with its other end yield- ingly contacting with the outer end of the spool bearing and driving shaft, a quadrant on the inner side of the casing end adjacent the bearing plate, a rock shaft
115 journaled in the bearing plate and adjacent end of the casing with one inbent end form- ing a finger pull yieldingly engaging the quadrant, a rock arm on the other end of
120 said shaft riding in contact with the spring finger adapted to move the latter inwardly when the rock shaft is swung, a main driv- ing shaft journaled in the casing parallel to
125 the tracker board and spool bearings, and mechanism mounted on the casing end and bearing plate for driving the said shaft and the spool bearing shaft.

4. In a piano player mechanism, a casing, a tracker board therein, a driving shaft
130 journaled in the casing parallel to the tracker board and provided with roll guide

flanges, a gage longitudinally adjustable on the tracker board in substantial alinement with one of said guide flanges, a pair of alined spool bearing and driving members 5 rotatable and longitudinally reciprocable in the casing, on the side of the tracker board opposite the main shaft and in parallel relation to the latter, a spring yieldingly projecting the bearing remote from the board gage toward the interior of the casing, and 10 means for positively moving the other spool bearing member inwardly.

In testimony whereof I affix my signature in presence of two witnesses.

IRA L. GRINNELL.

Witnesses:

LEWIS E. FLANDERS,
ANNA C. RAVILER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."