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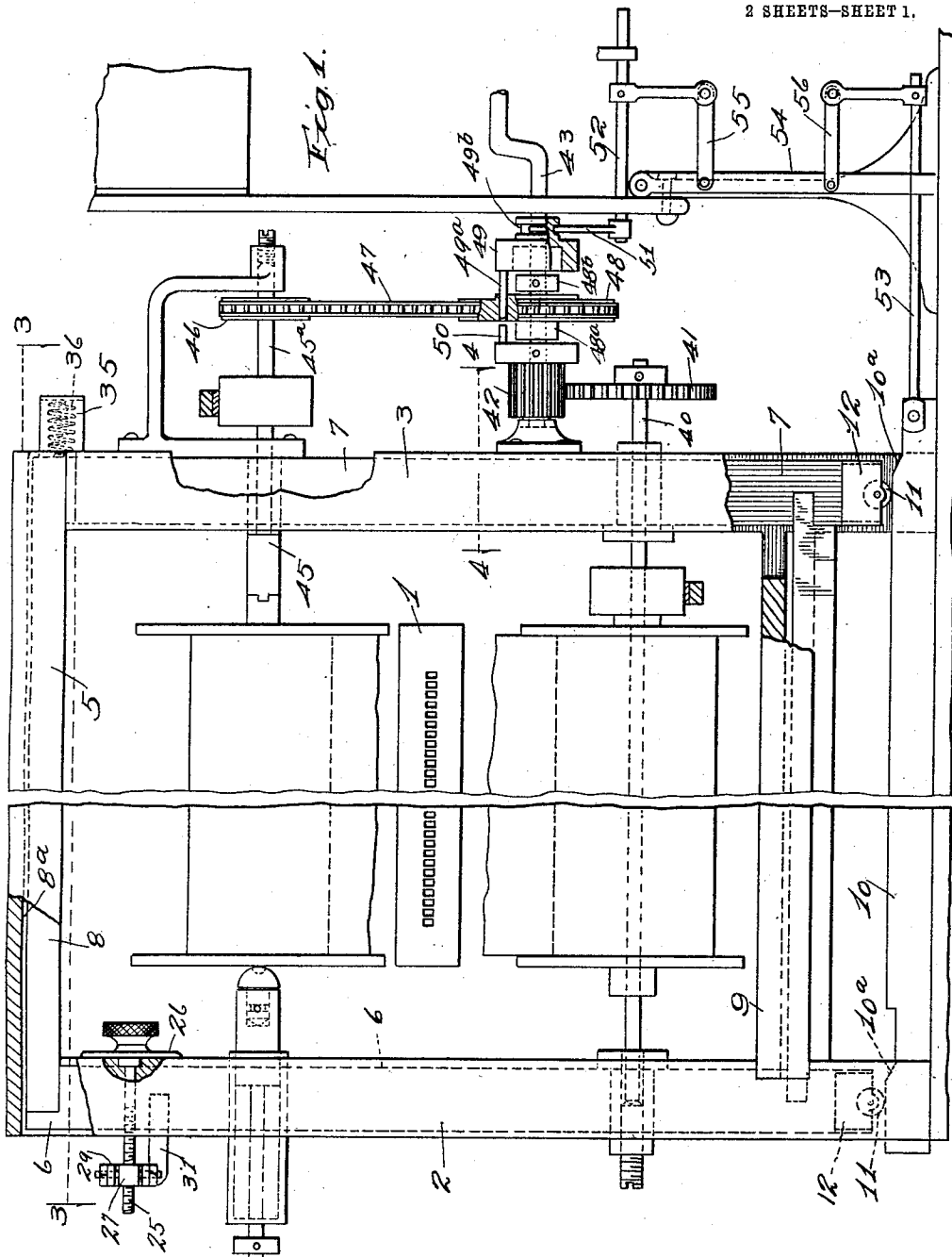
ROLL DRIVING AND ROLL CARRIAGE ADJUSTING MECHANISM FOR AUTOMATIC PLAYERS.

APPLICATION FILED JAN. 8, 1913.

1,070,637.

Patented Aug. 19, 1913.

2 SHEETS—SHEET 1.



Witnesses:
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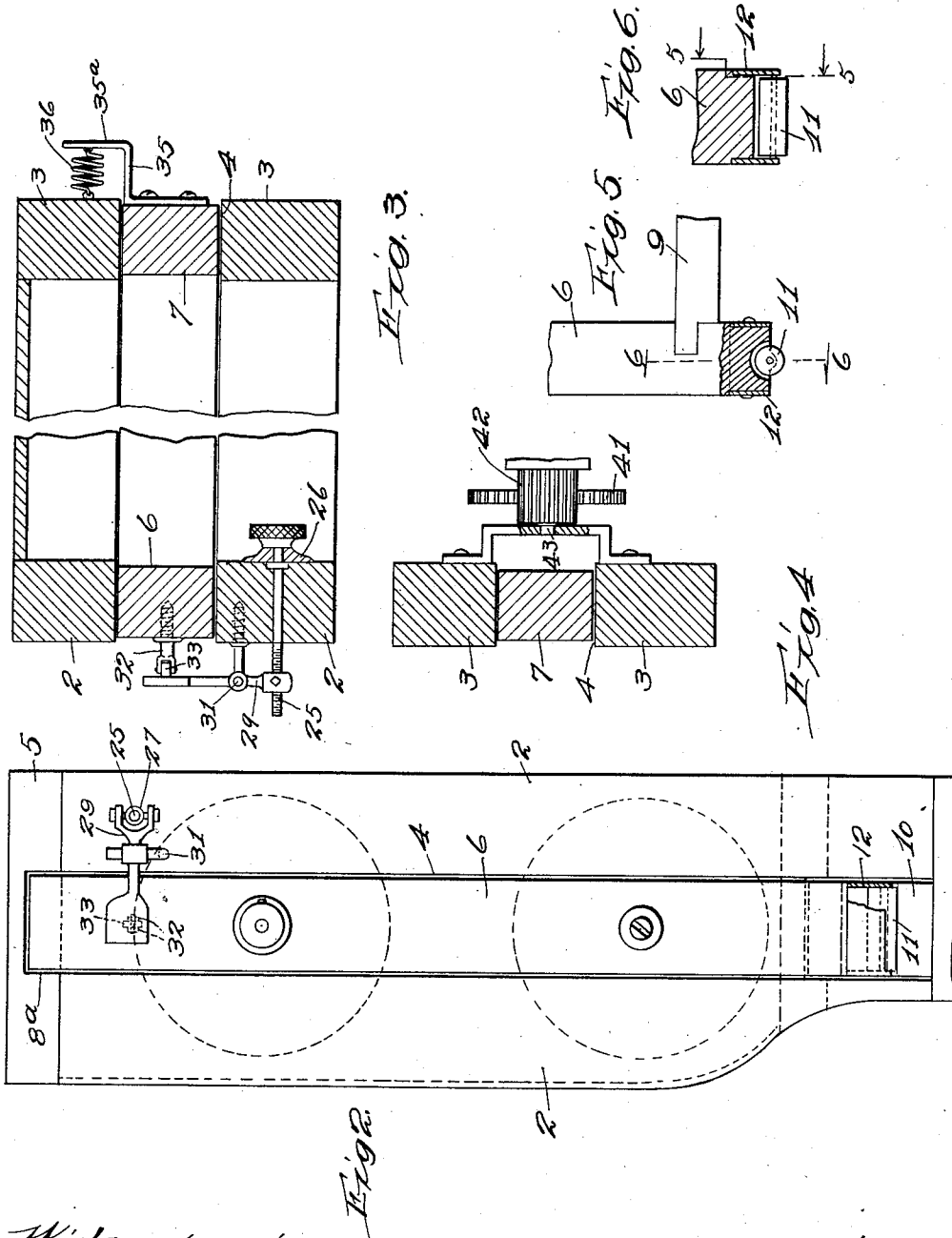
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 by *Burton Burton*
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UNITED STATES PATENT OFFICE.

EMIL SWANSON, OF STEGER, ILLINOIS, ASSIGNOR TO STEGER & SONS PIANO MANUFACTURING COMPANY, OF STEGER, ILLINOIS, A CORPORATION OF ILLINOIS.

ROLL-DRIVING AND ROLL-CARRIAGE-ADJUSTING MECHANISM FOR AUTOMATIC PLAYERS.

1,070,637.

Specification of Letters Patent.

Patented Aug. 19, 1913.

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To all whom it may concern:

Be it known that I, EMIL SWANSON, a citizen of the United States, residing at Steger, in the county of Will and State of Illinois, have invented new and useful Improvements in Roll-Driving and Roll-Carriage-Adjusting Mechanism for Automatic Players, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved construction of the devices for supporting and operating the note sheet rolls and take-up rolls of an automatic playing mechanism.

It consists of the elements and features of construction shown and described as indicated in the claims.

In the drawings: Figure 1 is a front elevation of a roll carriage and portion of the roll operating mechanism of a structure embodying this invention, the tracker box being partly broken away to disclose detail features of construction, the middle portions of the rolls and roll striker box being broken out to condense the view. Fig. 2 is a left-hand end elevation of the tracker box and roll carriage therein. Fig. 3 is a detail section at the line 3—3, on Fig. 1. Fig. 4 is a detail section at the line, 4—4, on Fig. 1. Fig. 5 is a detail section at the line, 5—5, on Fig. 6. Fig. 6 is a section at the line, 6—6, on Fig. 5.

The drawings present only so much of the structure of an automatic playing device as necessary to show the features involving this invention when embodied in a roll carrying and operating mechanism of the form suitable for and commonly employed in automatic playing devices mounted in a piano case and having the tracker projecting approximately horizontally and the note sheet roll above and take-up roll below the tracker. In such construction, 1 is the tracker which projects rigidly from the back or bottom of the tracker box whose ends or cheeks, 2 and 3 afford ultimate support for the parts in which the roll bearings are mounted. The tracker, 1, is shorter than the distance between the tracker box ends, 2 and 3, so that the tracker ends are spaced a considerable distance from the tracker box ends, respectively. Each of the tracker box ends has a slot, 4, extending substan-

tially the entire length of said tracker-box- 55
end at the plane of the axes of the rolls,—
that is, so that said plane traverses the slots
lengthwise thereof, said slots having their
sides parallel and substantially parallel to
said plane. The roll carriage comprises the 60
carriage end bars, 6 and 7, and longitudinal
tie bars, 8 and 9, connecting said ends. The
inner faces of said carriage bars are distant
from each other substantially the distance
between the tracker box ends, 2 and 3, and 65
the roll carriage is lodged in the slots, 4, of
the tracker box ends, the upper tie bar, 8, of
said roll carriage being preferably accommod-
ated in a groove, 8^a, in the inner face of
the upper tracker box side, 5. The slots, 70
4, are of width necessary to accommodate
the roll carriage end bars loosely enough to
permit said end bars to slide in said slots
lengthwise of the tracker box. The slots,
4, are longer than the roll carriage ends,— 75
that is, longer than the total width verti-
cally of the roll carriage, and said roll
carriage is up-held to the upper end of the
slots by means of a cam bar, 10, which ex-
tends through the slots, 4, of both tracker 80
box ends, and therefore under the lower
ends of the roll carriage end bars, and the
excess of length of the slots, 4, over the
length of the roll carriage end bars is suffi-
cient to accommodate in addition to said 85
cam bar, rollers, 11,—11, which are mount-
ed in bearings, 12,—12, at the lower ends of
the carriage end bars, 6 and 7. Said roll-
ers, 11,—11, rest upon the cam bar which
has its upper edge formed underneath the 90
roller, 11, in a cam slope, 10^a, so that when
the cam bar is moved longitudinally in one
direction it crowds the carriage up, and
when moved in the opposite direction it al-
lows the roll carriage to descend the amount 95
of the cam slope. The purpose of this pro-
vision will be hereinafter explained.

The primary purpose of forming the roll carriage as described, and mounting it so as to be moved longitudinally with respect 100
to the tracker box and tracker, is to provide
for adjusting the note sheet relative to the
tracker so that the apertures of the note
sheet shall be accurately alined with the
proper ducts of the tracker. For making 105
this adjustment a screw shaft, 25, is jour-
naled in a bearing plate, 26, secured on the
inner side of the left hand end of the tracker

box, said screw shaft extending out through said tracker box end for engagement of its end with a nut, 27, which is pivoted transversely of its axis in the forked end of a lever, 29, which is in turn pivoted on the upwardly jutting arm of an angle stud, 31, which is set into the outer side of said tracker box end. In the outer side of the left-hand end bar, 6, of the roll carriage there is mounted a forked stud, 32, having a roller, 33, journaled in its fork in position to bear against the outer side of the rear end of the lever, 29, so that when the screw shaft, 25, is rotated in the proper direction to force outward,—that is, away from the tracker box end,—the forward forked end of the lever, 29, the rear end of said lever will force the roll carriage to the right. For holding the roll carriage in position to keep the rear end of the lever, 29, pressed against the roller, 33, and to cause the roll carriage to move to the left when the screw shaft, 25, is rotated in the opposite direction, a bracket, 35, is mounted upon the right-hand end of the tracker box near the upper edge and between a forwardly projecting arm, 35^a, of said bracket and a right-hand end bar of the roll carriage, there is stretched a spring, 36, under tension so that it reacts normally to draw the roll carriage to the left.

The take-up roll shaft, 40, has rigidly mounted upon its right hand end outside the tracker box a gear, 41, for driving said take-up roll in playing. This gear meshes with the gear, 42, on the shaft, 43, of the motor, not shown in detail. For driving the note sheet roll in rewinding, the note sheet roll driving chuck, 45, has its shaft, 45^a, extending through the right hand roll carriage end bar, 3, and provided with a sprocket wheel, 46, which is driven by a chain, 47, from the sprocket wheel, 48, which is mounted loosely as to rotation on the main driving shaft, 43, stopped against longitudinal movement thereon between stop collars, 48^a, 48^b, said gear and said collars being between the gear, 42, which is fast on said shaft, and a clutch member, 49, which is loose on the shaft, and which has a driving pin, 49^a, extending through the hub of the sprocket wheel, 48, in position to encounter a drive pin, 50, on the gear, 42, when the clutch member, 49, is moved to the left, up to the sprocket wheel, 48. Said clutch member, 49, is grooved at 49^b for engagement by a shipping fork, 51, on the shipping slide bar, 52, by which said clutch member, 49, is moved longitudinally on the shaft, 43, to engage and disengage the driving pins, 49 and 50. The cam bar, 10, is connected to a slide bar, 53, which is connected with the slide bar, 52, for sliding movement therewith, and a lever, 54, suitably fulcrumed for convenient operation, is connected by a

link, 55, with the two bars, 52 and 53, so as to slide them both when the lever is operated, so that when the lever is swung to move the bar, 52, in direction for engaging the clutch members, 49 and 50, the slide bar, 53, is moved in the direction for withdrawing the cam slopes under the rollers, 11, to permit the roll carriage to descend and carry the gear, 41, out of mesh with the gear, 42. The opposite movement of the lever, 54, disengaging the clutch members, 49 and 50, causes the cam slopes to lift the roll carriage and reengage the gears, 41 and 42.

In order that the longitudinal adjustment of the roll carriage which is effected by means of the screw shaft, 25, for purpose of transposition, shall not prevent the proper operation of the cam bar for raising and lowering the carriage to engage and disengage the take-up roll driving gear, the means for sliding the cam bar are constructed so as to give it movement as much in excess of that which is necessary for the action of the cams as the full amount of the longitudinal movement of the carriage which can be effected by the screw, 25, and in this excess movement the horizontal edge of the cam bar travels under the rollers before or after the movement of the cam slopes thereunder.

I claim:—

1. In combination with the tracker, the tracker box having its ends slotted in the plane of the axes of the note sheet and take-up rolls, a roll carriage comprising end bars lodged in the slots of the tracker box ends and movable therein lengthwise of said axes, and means mounted on the tracker box engaging the roll carriage to so move said end bars.

2. In combination with the tracker, the tracker box having its ends slotted in the plane of the axes of the note sheet and take-up rolls, a roll carriage comprising end bars lodged in the slots of the tracker box ends and movable therein lengthwise of said axes, and means mounted on one of the tracker box ends engaging the corresponding roll carriage end bar for so moving the roll carriage.

3. In combination with the tracker, the tracker box having its ends slotted in the plane of the axis of the note sheet and take-up rolls, a roll carriage comprising end bars lodged in the slot of the tracker box ends; a screw shaft mounted for rotation in one of the tracker box ends; a nut on said screw shaft; a lever fulcrumed on the same tracker box end pivotally engaged with the nut; an abutment on the corresponding roll carriage end bar bearing against the lever, and a spring re-acting between the tracker box and the roll carriage for holding the abutment against the lever.

4. In combination with the tracker box,

a roll carriage mounted therein for movement transversely of the roll axes; take-up and note-sheet roll shafts journaled in said roll carriage; a gear fast on the take-up roll shaft; a main driving shaft, a gear fast thereon for meshing with the take-up roll-shaft gear; a train for connecting said main driving shaft with the note-sheet-roll-shaft; a disengageable clutch for connecting said driving shaft with said train; means for operating the clutch; means for moving the roll carriage, and connections for operating said two means simultaneously.

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5. In combination with the tracker box, a roll carriage mounted therein for movement transversely of the roll shafts, a take-up roll shaft and a note-sheet roll shaft journaled in said roll carriage; a gear fast on the take-up roll shaft; a main driving shaft and a gear fast thereon for meshing with said last mentioned gear; a train for connecting said main driving shaft with the note-sheet roll driving shaft, a disengageable clutch for connecting said main driving shaft with said train; a bar mounted for sliding in the tracker box, and cam devices thereon for moving the roll carriage transversely of its shafts; means for moving the

disengageable clutch, and means for sliding said cam bar and connections for operating said two means simultaneously. 30

6. In combination with the tracker box, a roll carriage mounted therein for movement transversely of the roll shafts; take-up and note-sheet roll shafts journaled in said roll carriage; a main driving shaft, a train by which it drives the note-sheet roll shaft; a disengageable clutch in said train; gears on said main shaft and take-up roll shaft intermeshing for driving the latter; a means for moving the roll carriage transversely of the roll axes for engaging and disengaging said gears, and operating connections for said carriage moving means connected also with the disengageable clutch for engaging the latter when the gears are disengaged, and engaging the gears when the clutch is disengaged. 35
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In testimony whereof, I have hereunto set my hand at Steger, Illinois, this 7th day of December, 1912. 50

EMIL SWANSON.

Witnesses:

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