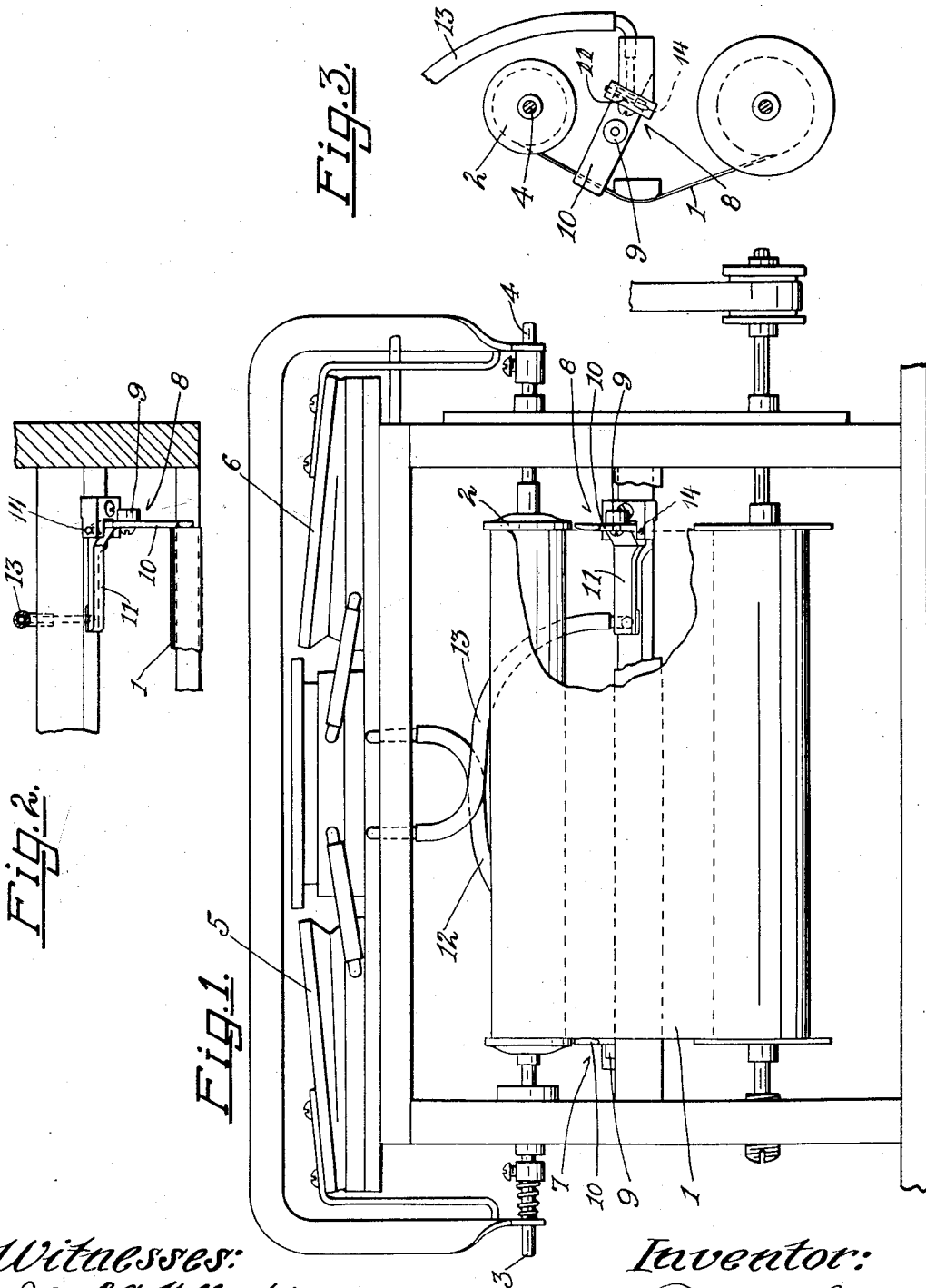


R. A. GALLY.  
WEB GUIDING DETECTOR DEVICE.  
APPLICATION FILED OCT. 20, 1913.

1,093,179.

Patented Apr. 14, 1914.



Witnesses:  
*Jacob A. Hollander*  
*J. W. Macy.*

Inventor:  
*Robt. A. Gally*

# UNITED STATES PATENT OFFICE.

ROBERT A. GALLY, OF CINCINNATI, OHIO, ASSIGNOR TO THE BALDWIN COMPANY,  
OF CINCINNATI, OHIO.

## WEB-GUIDING DETECTOR DEVICE.

1,093,179.

Specification of Letters Patent.

Patented Apr. 14, 1914.

Application filed October 20, 1913. Serial No. 796,152.

*To all whom it may concern:*

Be it known that I, ROBERT A. GALLY, a citizen of the United States, residing at Cincinnati, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Web-Guiding Detector Devices, of which the following is a specification.

Previous devices in this art have employed vertical pendulum fingers adapted to be swung against the edge of a horizontal web, and spring fingers have also been used with both horizontal and vertically disposed webs, while in the present invention a gravity detector of substantial strength and consequent considerable weight, is disposed in a plane acute to the horizontal, gaining a delicate touch of its finger against the edge of the web, and acting in substantially the parallel plane of its touching face to that of the edge of the web.

In the drawing, Figure 1 is a front view of the device; Fig. 2 a plan view, and Fig. 3 an elevation from the right end.

The present showing is of an embodiment of the invention in the music roll apparatus of a self-playing musical instrument.

The traveling web 1, in this instance a perforated music sheet, is usually carried on a spool 2 which when in use in the apparatus is inserted between and held in revoluble position by springs 3 and 4 which are opposed to each other at the two sides of the box, but in one axial line, and capable of motion together with the spool 2 and sheet 1 in said axial line, thus shifting sheet 1 transversely of its line of travel and in the plane of its surface. The devices for automatically shifting the sheet 1 in said transverse direction may be of any well known form of power devices acting longitudinally on said spool or spindles, or directly on the sheet, pneumatics as 5 and 6 being now shown to perform such duty, being controlled by detector means 7 and 8 actuated by contact with the edges of the web or sheet 1. Each detector 7 or 8 is preferably of a strong bell-crank form disposed in a plane slightly out of the horizontal, so that notwithstanding the considerable weight for strength of these parts against accidental change of adjustment, the resistance against the pressure of the edge of the web or sheet 1 is very slight. To make such resistance extremely light, a counterweight portion 9 is formed with or

attached to each detector to minimize its pressure against the contact of the edge of the web or sheet 1.

When, as in most music players of this day, the music-sheet or web 1 is positioned and travels in approximately vertical planes, a contact arm as 10 should have its contact face at right angles to the edge of the web it is to contact with, and its motion in approximately direct line with that of the transverse shifting of the sheet or web 1, wherefore a vertical pendulum contact device would not answer, and an exactly horizontal device would require a spring. By placing the present detectors 7 and 8 in a plane slightly out of the horizontal and having the major part of their weight so disposed relative to the fulcrum 14 of each as to impel their contact parts toward the adjacent edge of the sheet or web 1, a substantial structure is secured, yet delicate and correct in contact.

The contact arm 10 lies in compact disposition extending rearward from the corresponding edge of the sheet or web 1, while the controlling arm 11 extends at right angles to said contact arm and rearward of said sheet and serves to control the operation of its corresponding pneumatic 5 or 6 through suitable connections 12 and 13, whenever the sheet or web 1 alters its line of travel and therefore requires transverse correction.

Many modifications may be made, as electric devices instead of pneumatic, and yet be subject to,

What I claim as my invention—

1. A web guiding detector device having a contact-arm adapted to contact with the edge of a web to be guided, and disposed and movable in a plane at an acute angle to the horizontal plane, a fulcrum for said detector having its axis substantially at a right angle to the said plane of said arm, and an action controlling member of said detector extended in a similar plane to that of the said contact-arm, the weight of said detector being so disposed relatively to said fulcrum as to force said contact-arm toward the position of the edge of the web with which said contact-arm is adapted to contact.

2. A web guiding detector device having a contact-arm adapted to contact with the edge of a web to be guided, and disposed and movable in a plane at an acute angle to the

horizontal plane, a fulcrum for said detector having its axis substantially at a right angle to the said plane of said arm, and an action controlling member of said detector extended in a similar plane to that of the said contact-arm, a part against which said action controlling-member bears when in normal position, the weight of said detector being so disposed relatively to said fulcrum as to force said action controlling member against said part against which it bears when in normal position.

3. A web guiding detector device having a contact-arm adapted to contact with the edge of a web to be guided, and disposed and movable in a plane at an acute angle to the horizontal plane, a fulcrum for said detector having its axis substantially at a right angle to said plane of said arm, and an action controlling member of said detector extended in a similar plane for that of the said contact-arm, the weight of said detector being so disposed relatively to said fulcrum as to force said contact-arm toward the position of the edge of the web with which said contact-arm is adapted to contact, said disposition of said weight relatively to said fulcrum and the plane of motion of said contact-arm being such as to make effective only a minor part of the total weight of said detector in the force of said contact-arm toward said web.

4. A web guiding detector device having a contact-arm adapted to contact with the edge of the web to be guided, and disposed and movable in a plane at an acute angle to the horizontal plane, a fulcrum for said detector having its axis substantially at a right angle to the said plane of said arm, and an action controlling member of said detector extended in a similar plane to that of the said contact-arm, a part against which said action controlling-member bears when in normal position, the weight of said detector being so disposed relatively to said fulcrum as to force said action controlling member against said part against which it bears when in normal position, said disposition of said weight relatively to said fulcrum, the controlling member, and the part against which said member so bears, being such as to make effective only a minor part of the total weight of said detector in the force of said controlling member against said part.

5. A web guiding detector device having a contact-arm adapted to contact with the edge of a web to be guided, and disposed and movable in a plane at an acute angle to the horizontal plane, a fulcrum for said detector having its axis substantially at a right angle to the said plane of said arm, and an action controlling member of said detector extended in a similar plane to that of the said contact-arm and to one side of said fulcrum, and a counterweight comprised

with said detector and disposed to the other side of said fulcrum than that of the said controlling member.

6. A web guiding detector device having a contact-arm adapted to contact with the edge of a web to be guided, and disposed and movable in a plane at an acute angle to the horizontal plane, a fulcrum for said detector having its axis substantially at a right angle to the said plane of said arm, and an action controlling member of said detector extended in a similar plane to that of the said contact-arm and to one side of said fulcrum, and a counterweight comprised with said detector and disposed to the other side of said fulcrum than that of the said controlling member, the weight of said detector at the counterweight side of the fulcrum being less than the weight of said detector at the other side of said fulcrum.

7. A web guiding detector device of bell-crank form, a fulcrum adjacent the angle joint of said crank, one arm of said crank adapted to contact the edge of the web to be guided, and the other arm of said crank adapted to control the action of a web-guiding means and extended directly in the rear of said web, said bell-crank disposed in a plane at an acute angle to the horizontal plane.

8. A web guiding detector device of bell-crank form, a fulcrum adjacent the angle joint of said crank, one arm of said crank adapted to contact the edge of the web to be guided, and the other arm of said crank adapted to control the action of a web-guiding means and extended directly in the rear of said web, said bell-crank disposed in a plane at an acute angle to the horizontal plane, and a counterweight on said detector to that side of the fulcrum away from the controlling arm.

9. In a web-guiding device: a web disposed in a vertical plane and means to travel said web in a vertical direction, and a detector means disposed and movable in a plane at an acute angle to the horizontal plane, said detector having a contact-arm with its face at right angles to the face of the web and the adjacent edge line of said web and adapted to be contacted by said web-edge during transverse motion of said web, and also having a controlling arm extended substantially at right angles to said contact-arm and parallel to and directly rearward of said web.

10. In a web-guiding device: a web disposed in a vertical plane and means to travel said web in a vertical direction, and a detector means disposed and movable in a plane at an acute angle to the horizontal plane, said detector being of bell-crank form with its angle joint rearward of one edge of said web, one arm of said bell-crank extended forwardly to a position adjacent to

and opposed to the edge of said web, the other arm of said bell-crank extended substantially parallel to and rearward of the main part of said web and adapted to control means for actuating the transverse travel of said web.

11. In a web-guiding device: a web disposed in a vertical plane and means to travel said web in a vertical direction, and a detector means disposed and movable in a plane at an acute angle to the horizontal plane, said detector being of bell-crank form with its angle joint rearward of one edge of said web, one arm of said bell-crank extended forwardly to a position adjacent to and opposed to the edge of said web, the other arm of said bell-crank extended substantially parallel to and rearward of the main part of said web and adapted to control means for actuating the transverse travel of said web, and a counterweight

comprised with said detector and positioned outside of the said edge of said web.

12. In a web-guiding device: a web disposed in a plane at an angle to the horizontal, and means to travel said web in an up and down direction, and a detector means disposed and movable in a plane at an angle to the plane of said web, said detector being of bell-crank form with its angle joint rearward of one edge of said web, one arm of said bell-crank extended forwardly to a position adjacent to and opposed to the edge of said web, the other arm of said bell-crank extended substantially parallel to the plane of and rearward of the operating surface of said web and adapted to control means for actuating the transverse travel of said web.

ROBT. A. GALLY.

Witnesses:

S. M. WAMACKS,  
J. W. MACY.

Correction of Letters Patent No. 1,093,179.

It is hereby certified that in Letters Patent No. 1,093,179, granted April 14, 1914, upon the application of Robert A. Gally, of Cincinnati, Ohio, for an improvement in "Web-Guiding Detector Devices," errors appear in the printed specification requiring correction as follows: Page 1, line 32, for the word "springs" read *spindles*; page 2, line 21, for the word "for" read *to*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 12th day of May, A. D., 1914.

[SEAL.]

J. T. NEWTON,

*Acting Commissioner of Patents.*