(No Model.)

# R. W. PAIN.

## MECHANICAL MUSICAL INSTRUMENT.

No. 270,606. Patented Jan. 16, 1883.

Fig. 1

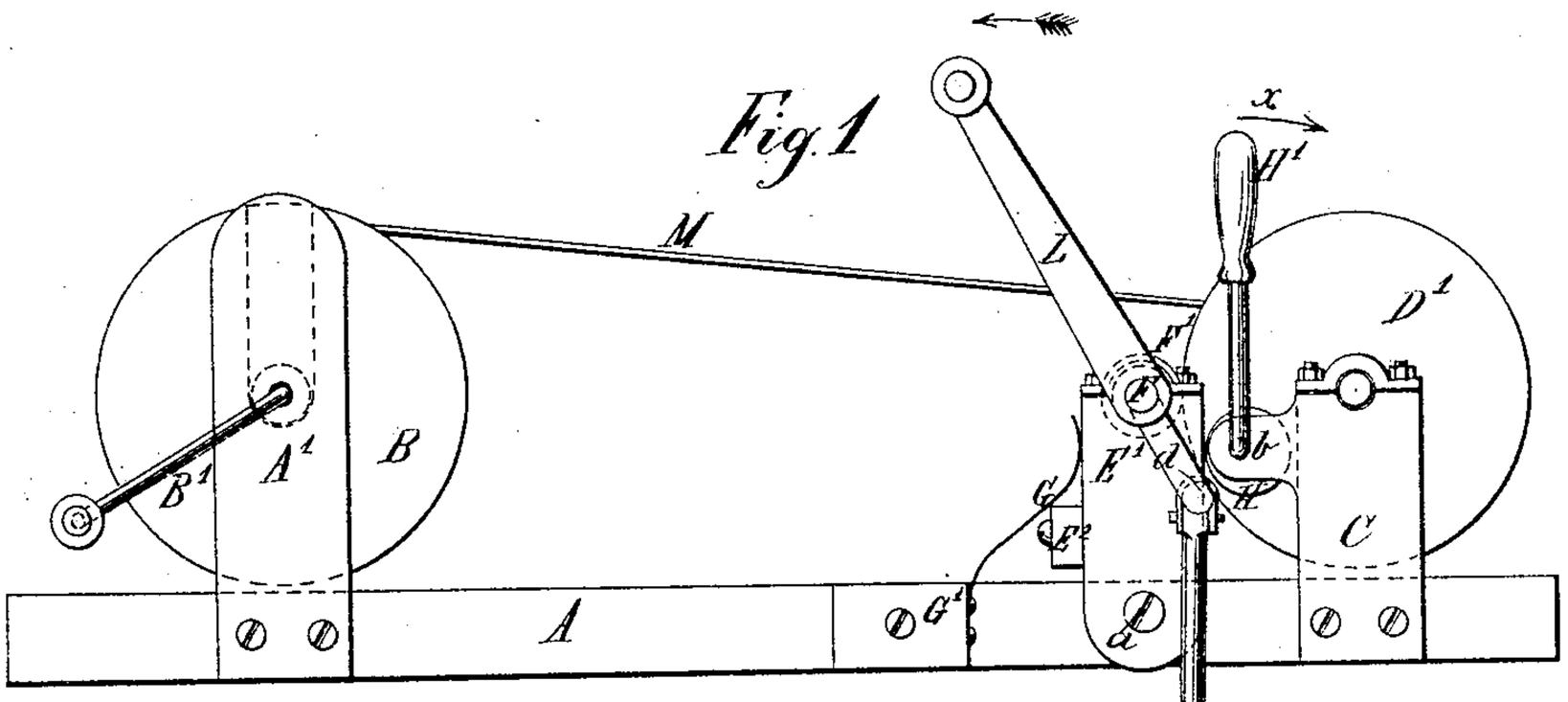



Fig. 2

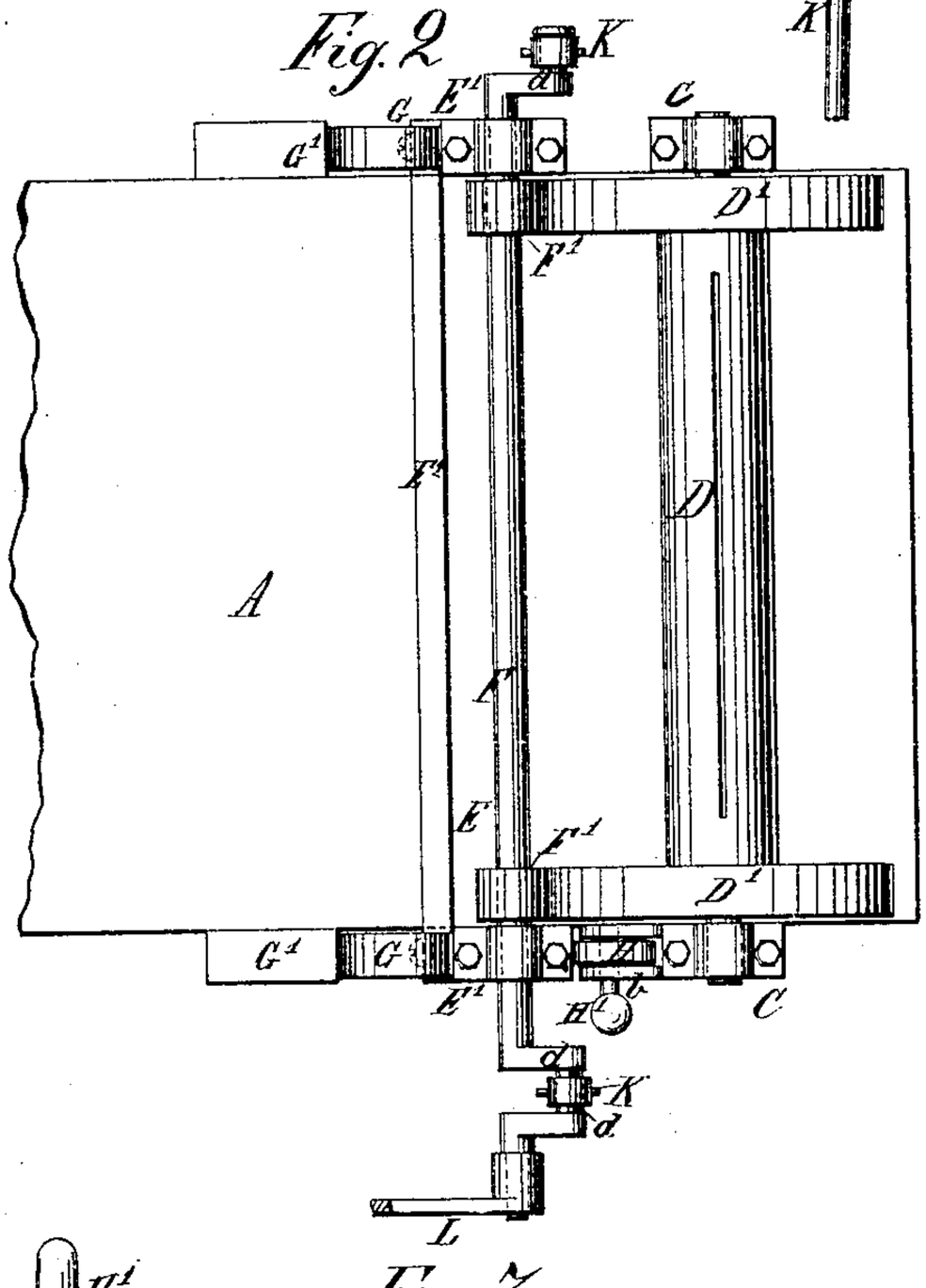
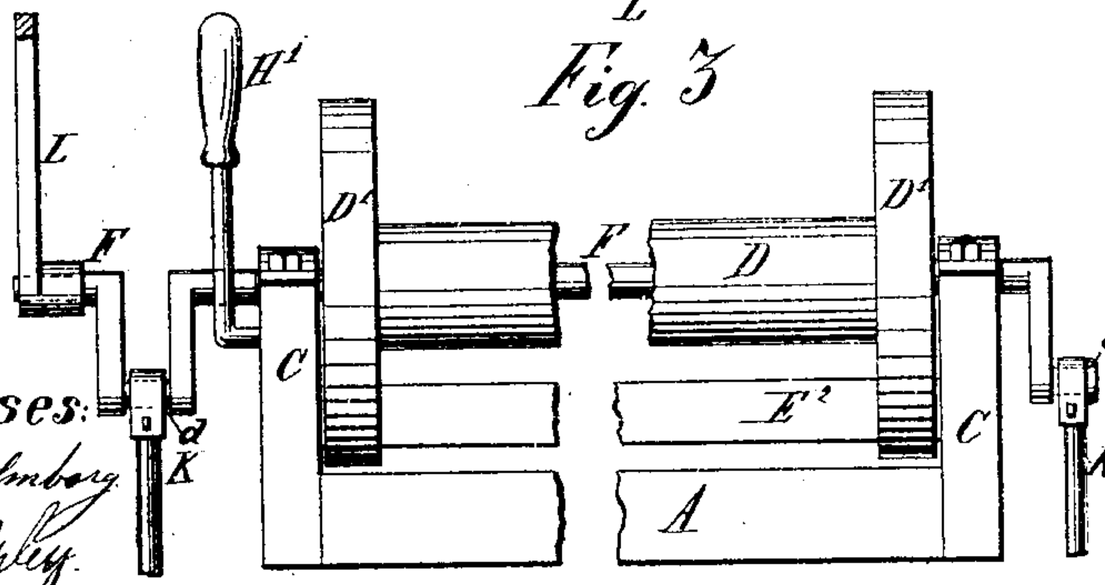



Fig. 3

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# UNITED STATES PATENT OFFICE.

ROBERT W. PAIN, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NATIONAL AUTOMATIC PIANO AND ORGAN MANUFACTURING COMPANY, OF NEW YORK.

## MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 270,606, dated January 16, 1883.

Application filed March 23, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT W. PAIN, of the city, county, and State of New York, have invented a new and useful Improvement in Devices for Operating Take-Up Rolls of Mechanical Musical Instruments, of which the following is a specification.

In certain mechanical musical instruments that are operated or controlled by perforated music sheets the crank-shaft of the take-up roll is connected with the wind-pumps or bellows in such a manner that both are moved at the same speed when the instrument is in operation, which construction is faulty, for the reason that though quick motion is desirable and even necessary for the effective action of the pumps a low rate of speed is more desirable for the roll.

The object of this invention is to overcome this objection by imparting high speed to the pumps and low speed to the roll by the same movement of the crank-shaft.

The invention consists in the peculiar construction, operation, and combination of parts, as more fully hereinafter described and claimed.

Figure 1 is a side elevation, showing my improved device applied to a take-up roll. Fig. 2 is an enlarged plan of the same. Fig. 3 is a front elevation of the same.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a frame, on one end of which are secured standards A′, supporting the rewinding-roll B, on whose shaft or axle is fixed a crank-handle, B′, for revolving the same.

C C represent the standards supporting the take-up roll D, which is provided with a deep flange, D′, at either end.

E represents a rocking frame, consisting of standards E′, pivoted at *a*, on opposite sides of the frame A, and connected by a cross-bar, $E^2$. Journaled in said standards E′ is a crank-shaft, F, on which is fixed, near each end, a friction-roll, F′, opposite each take-up-roll flange D′, while springs G, secured at their lower ends on blocks G′, that are fastened to the sides of the frame A, bear with their upper ends against the upper ends of the standards E′, and thereby force the friction-rolls F′ in contact with the flanges D′.

A lug, *b*, projecting from one of the standards C, serves as a fulcrum for an eccentric cam, H, which may be moved by a handle, H′, against a standard, E′, to force the rocking frame E, and thereby the rolls F′, rearward, the latter from contact with the flanges D′.

Connecting rods or pitmen K, engaged on the cranks or wrist-pins *d* of the shaft F, are designed to be connected with the air-pumps or bellows (not shown) of the instrument.

L represents the handle of the crank-shaft F, and M the perforated music-sheet. When the latter is suitably affixed to the two rolls B D, and it is desired to roll or wind it upon the take-up roll D, and at the same time to move the pitmen K to operate the pumps, (not shown,) the operator turns the handle L, thereby giving to said roll D a relatively much lower speed than that of the pitmen K, the flanges D′ being of much greater diameter than the friction-rolls F′, by contact with which they are made to revolve for the purpose of winding up the sheet M. When it is desired to rewind the sheet M the cam-handle H′ may be moved in the direction of the arrow *x*, Fig. 1, with the effect of throwing the friction-rolls F′ out of gear with the flanges D′, so that the roll D may freely revolve toward the roll B when the latter is turned for rewinding the said sheet M.

I do not broadly claim friction-rolls as a means for transmitting motion to a take-up roll of a mechanical musical instrument; nor do I claim the use of friction-rolls in combination with an intermediate roll bearing against the flanges of the take-up roll; and I am aware of the patent of M. J. Matthews, dated February 22, 1882, No. 238,138, and I do not claim the construction shown in said patent.

What I claim is—

The combination, with the shaft of the roll D, mounted in stationary bearings, of the crank-shaft F, mounted in two pivoted standards, E′, the spring G on one side of the standards, the cam H on the opposite side, the wheels F′ D′, and the cranks K, all constructed and operating substantially as and for the purpose specified.

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Witnesses:
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