

(No Model.)

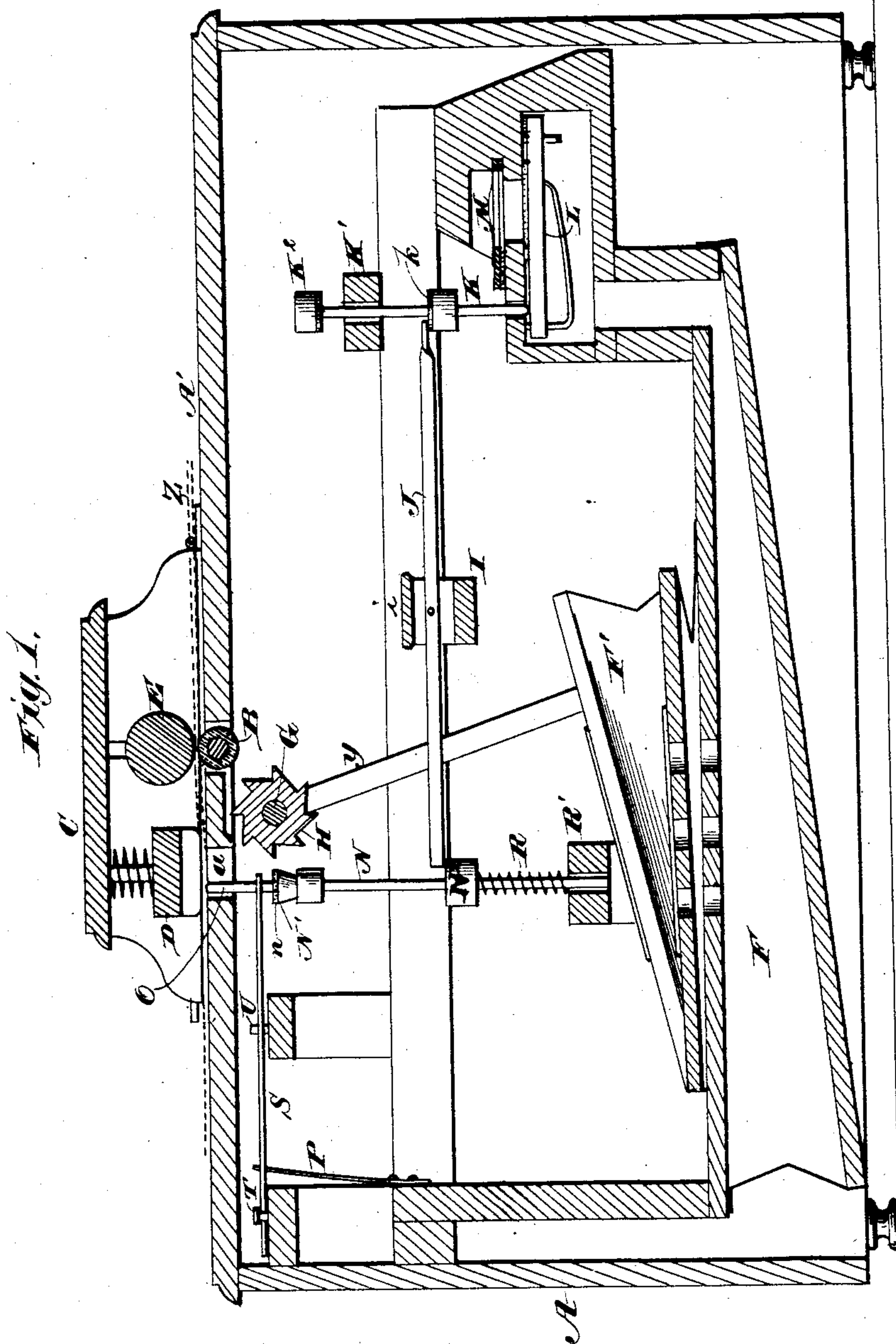
2 Sheets—Sheet 1.

J. McTAMMANY, Jr.

MECHANICAL MUSICAL INSTRUMENT.

No. 284,315.

Patented Sept. 4, 1883.



Witnesses,
Robert Emmett,
George Tilghman.

Inventor.
John McTammany Jr.
By *Wm H Babcock*
Atty.

(No Model.)

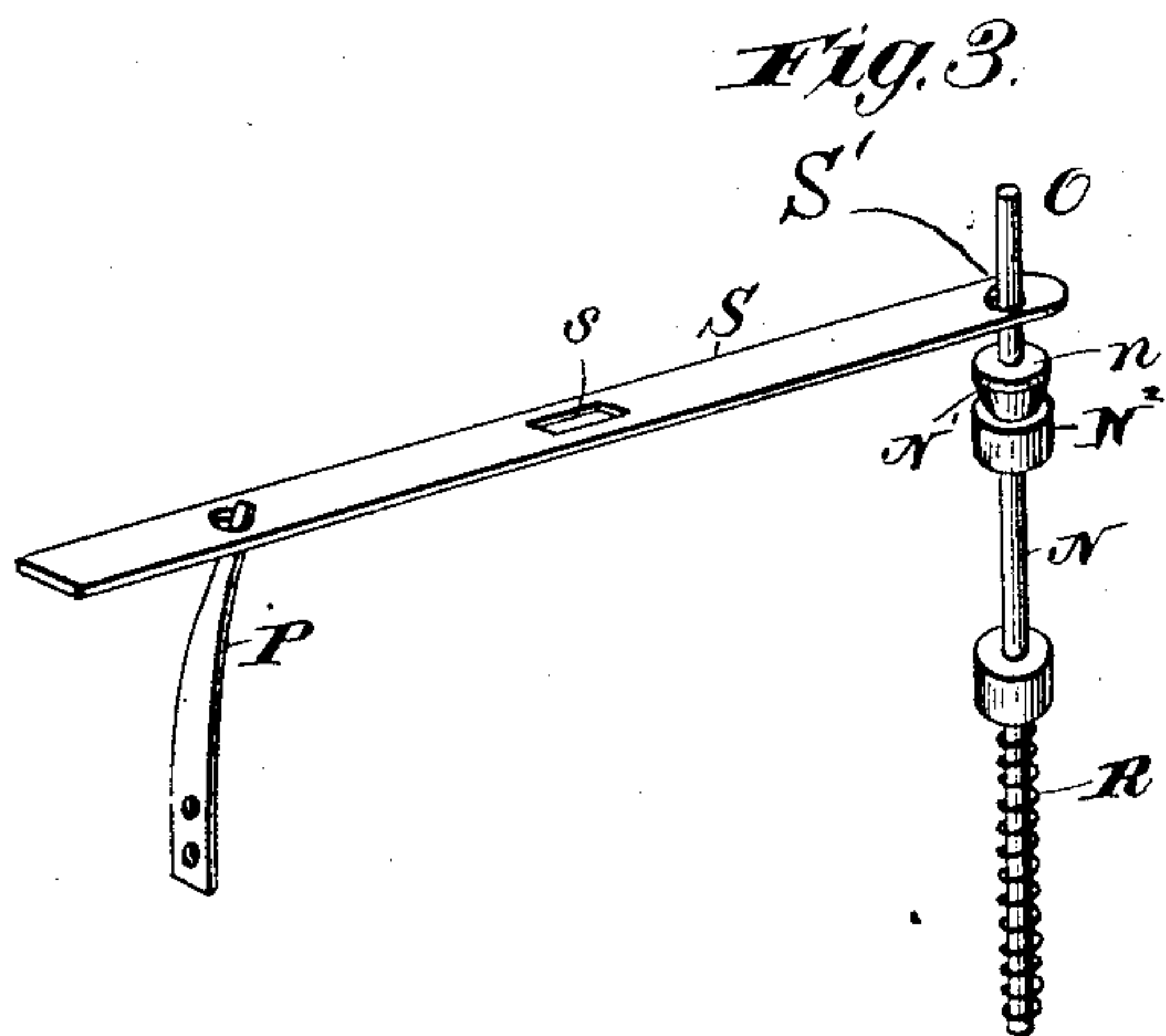
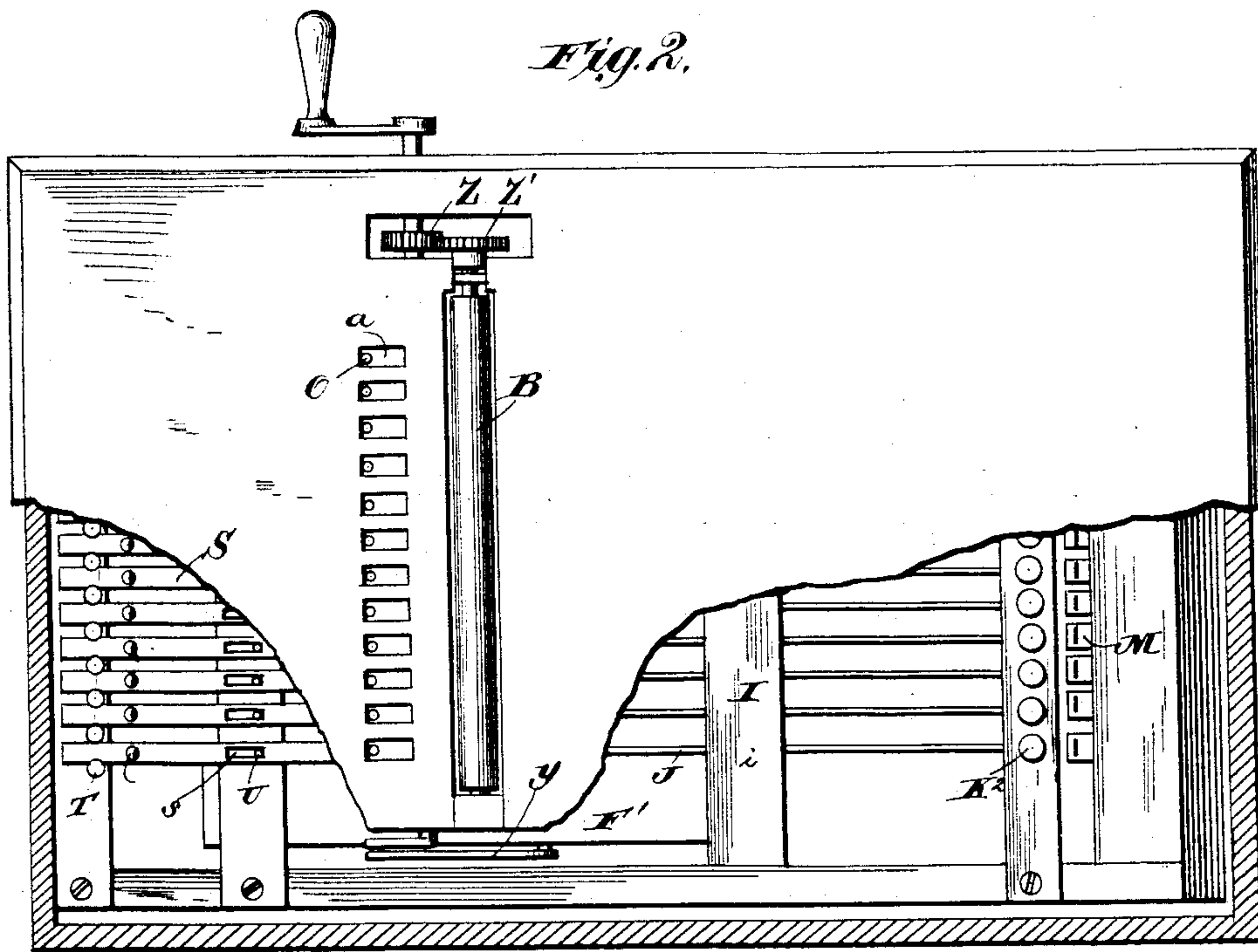
2 Sheets—Sheet 2.

J. McTAMMANY, Jr.

MECHANICAL MUSICAL INSTRUMENT.

No. 284,315.

Patented Sept. 4, 1883.



Witnesses,

Robert Cruett,
George Tilghman

Inventor,

John McTammany Jr.

By Wm H Babcock

Atty.

UNITED STATES PATENT OFFICE.

JOHN MCTAMMANY, JR., OF WORCESTER, MASSACHUSETTS.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 284,315, dated September 4, 1883.

Application filed March 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN MCTAMMANY, JR., a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Mechanical Musical Instruments, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention is an improvement on that described in Letters Patent No. 252,614, granted January 24, 1882.

It consists, chiefly, in certain improvements, hereinafter set forth, in the devices which raise and retract the fingers that protrude through the openings of the music-sheet to govern the action of the reed-valves.

The primary object of these improvements is to increase the ease and delicacy of the action of said fingers when working in combination with a traveling music-sheet.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of an automatic musical instrument embodying my invention. Fig. 2 represents a plan view of the same, a part of the top of the casing having been removed, and Fig. 3 represents a detail view of the vertical rod on which the finger is formed and the springs and plate which act on said rod.

A designates the casing of the instrument, the top A' of which is provided with slots a for the protrusion of the fingers. B designates the lower feed-roll, which moves a music-sheet, Z, (shown in dotted lines,) from right to left, said sheet being provided with the usual openings, of varying length, arranged to register with the slots a. C designates the rack carrying the upper feed-roll, E, and the presser-bar D. F designates the reservoir-bellows; F' F', the two feeder or pump bellows; G, the driving-shaft; H, the fluted roll carried thereby; I, the slotted pivot-bar; J, the levers pivoted thereon, and K the valve-rods, having padded shoulders k, on which the forward ends of said levers respectively bear to force said valve-rods down for the purpose of opening the reed-valves L of reeds M. These devices as now shown do not differ substantially from those in the aforesaid patent, (to which reference is hereby made for a fuller description,) except

that the top of the slotted pivot-bar I is closed by a cap-piece, i, and the upper ends of the valve-rods are extended through perforations in a guide-board, K', above which they are provided with stops K², which limit their downward motion. 55

The feed-roll is driven from the driving-shaft by gear-wheels Z Z', and there is also the usual crank-and-pitman connection, y, between the driving-shaft and the feeder-bellows. These constructions and arrangements, as well as divers of those before mentioned, are susceptible of considerable modification without departing from the spirit of my invention, which is mainly to be found in the devices hereinafter described. 60 65

N designates the upright arms or rods, the upper ends, O, of which constitute fingers which protrude through the slots a, respectively. These rods are entirely unconnected with the levers J; but each of them has a collar or shoulder, N², formed upon it, which is adapted to come into contact from below with the rear or inner end of the appropriate lever. This collar is forced upward (and the rod with it) by the pressure of a spring, R, which may be of any convenient form. The lower end of each rod is guided in a perforated bar, R'. On the upper part of each rod there is another collar or shoulder, N', protected by a padding or shield, n, and arranged to receive the impact of the fluted roll H when the said rod has been drawn by the music-sheet into its most forward position. P designates the spring, which retracts said rod to its normal position by means of a sliding plate or bar, S. This bar moves in guides T on the frame of the machine, and has a longitudinal slot, s, which receives a fixed stud, U. This stud and slot are so adjusted with respect to each other that the metal at the forward end of the slot s will come in contact with the stud U before the upper end or finger O of the rod N has moved sufficiently far backward to come into contact with the wood at the end of the appropriate slot a in casing-top A'. The said rod is therefore freed from all friction with the wood at the end of the slot a as said rod moves up and down therein. It is also free from any lateral or other strain of retracting-spring P so long as said rod is in its normal 70 75 80 85 90 95 100

position. The opening S' in the front end of each plate or bar S, through which each rod N respectively passes, is made larger than said rod, so that there will be no friction between said plate and said rod as the latter moves up and down, the former not being drawn against it by spring P.

In my prior patent above mentioned the upright arms are hinged to their respective levers and the retracting-springs pull them into an inclined position, which is less favorable to their entering the openings in the music-sheet than a vertical position. They are also in contact with the wood-work at the rear ends of said slots *a*, and they are never free from the stress of the retracting-springs. Consequently much greater strength is required in the elevating-springs than with my present invention, and even then the wear will be greater and the working less easy and reliable.

When an opening in the music-sheet comes over one of the fingers O, the appropriate spring R causes said finger to pop up immediately through said opening, there being no impediment from friction or lateral strain, and said spring R acting vertically. The music-sheet then carries the said finger forward until the shoulder N', moving with it, is engaged and depressed by the fluted roll H. The solid part of the music-sheet then passes over said finger and the fluted roll H releases the shoulder N'. The spring P (which began to exert its stress during the forward motion of said finger) then returns said rod to its original position. The strain of said spring thereupon ceases and the finger remains in readiness for the next opening in the music-sheet. The holes in the guide-bar, which receive the lower ends of said rods, are made large enough to allow a certain play in the forward and backward motion of the latter. Of course the rods may be arranged horizontally instead of vertically, the other parts of the machine being similarly modified in position.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an automatic musical instrument, the combination of a set of rods and means for transmitting the motion of said rods to the reed-valve, whereby they govern the opening of the same, with springs for moving said rods vertically when permitted by the music-

sheet, retracting-springs for said rods, and devices arranged and adapted to prevent the action of said springs on said rods while the latter are in their normal position, substantially as set forth.

2. In an automatic musical instrument, the combination of a set of rods and means for transmitting the motion of said rods to the reed-valves, whereby they govern the opening of the same, means independent of the music-sheet for depressing said rods, springs for raising them vertically when permitted by the music-sheet, a casing having slots *a* in its top, through which the upper ends of said rods play, retracting-spring for said rods, and stops arranged to prevent said retracting-springs from drawing said rods against the rear walls of the slots, substantially as set forth.

3. In an automatic musical instrument, a set of rods and means for transmitting the motion of said rods to the reed-valves, whereby they govern the opening of the same, in combination with retracting-springs for said rods, a series of bars or plates, respectively connecting said rods and said springs, and a series of stops arranged to check said bars, respectively, substantially as set forth.

4. In an automatic musical instrument, a set of rods and means for transmitting the motion of said rods to the reed-valves, whereby they govern the opening of the same, in combination with a set of bars or plates through which said rods respectively pass, and retracting-springs and stops for said bars, the opening in each bar through which its rod passes being of sufficient diameter to allow play to said rod and relieve it of friction, substantially as set forth.

5. In an automatic musical instrument, a series of free vertical-rods and means whereby their motion is transmitted to the reed-valves to control the opening of the same, the upper ends of said rods being arranged to pass vertically up through the openings in the music-sheet, in combination with the reed-valves and springs which force said rods vertically upward, as set forth.

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

JOHN McTAMMANY, JR.

Witnesses:

DAVID MANNING, Jr.,
CHAS. W. WOOD.