

(No Model.)

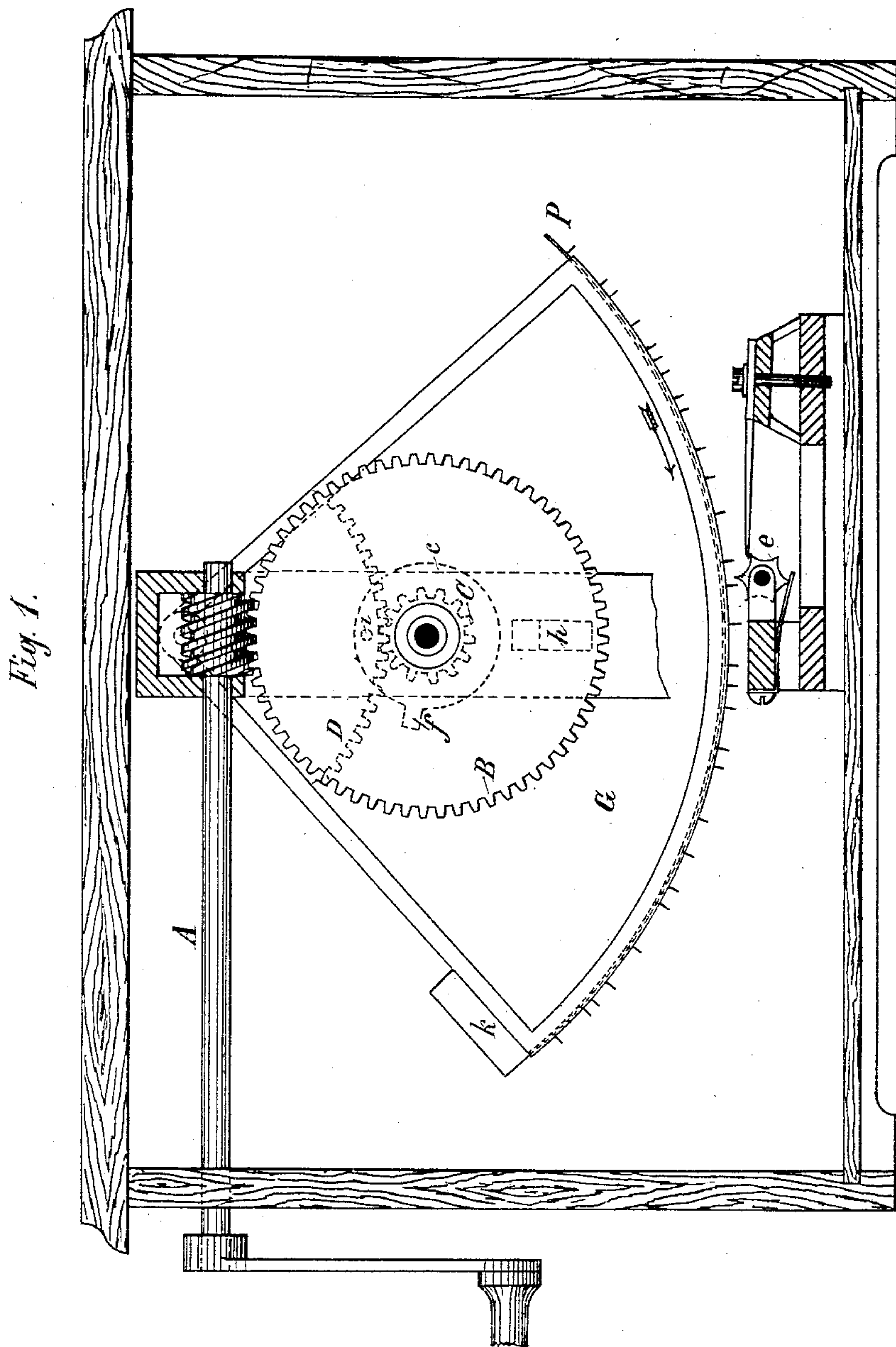
3 Sheets—Sheet 1.

O. P. LOCHMANN.

MECHANICAL MUSICAL INSTRUMENT.

No. 350,541.

Patented Oct. 12, 1886.



Witnesses
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W H. S. Knight

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(No Model.)

3 Sheets—Sheet 2.

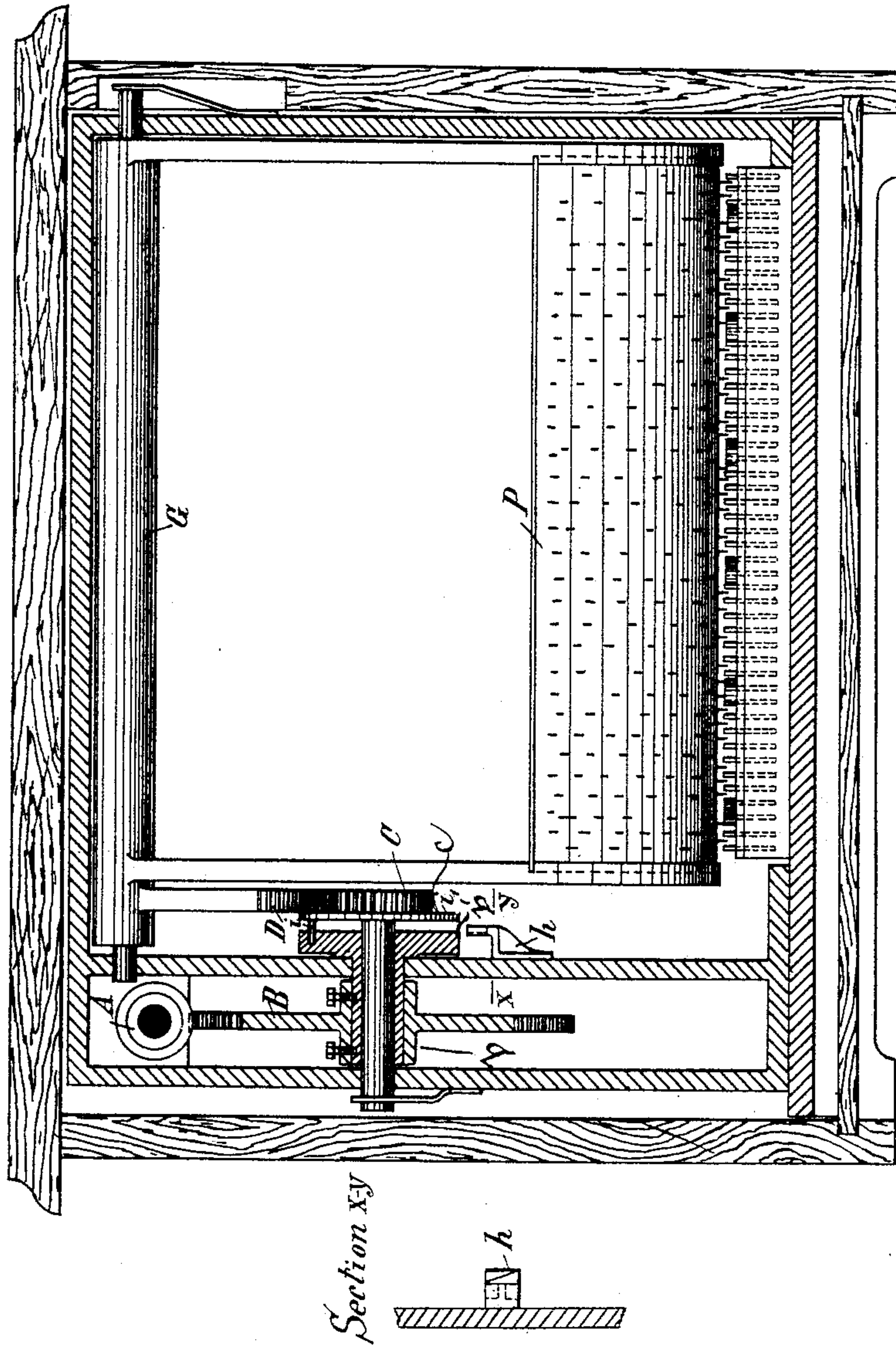
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Fig. 2.



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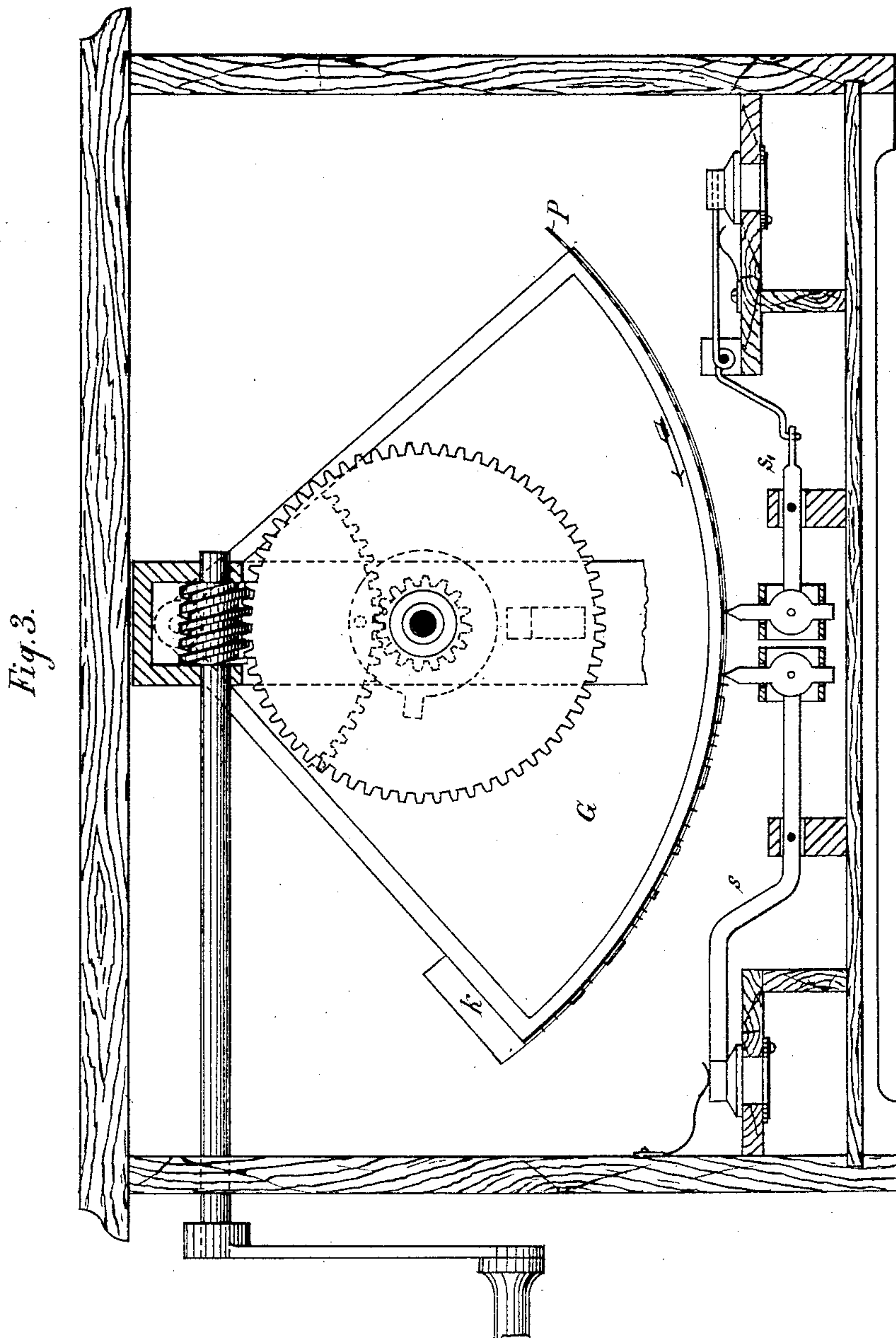
3 Sheets—Sheet 3.

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MECHANICAL MUSICAL INSTRUMENT.

No. 350,541.

Patented Oct. 12, 1886.



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UNITED STATES PATENT OFFICE.

OSKAR PAUL LOCHMANN, OF GOHLIS, LEIPSIC, SAXONY, GERMANY.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 350,541, dated October 12, 1886.

Application filed May 21, 1886. Serial No. 202,903. (No model.)

To all whom it may concern:

Be it known that I, OSKAR PAUL LOCHMANN, a subject of the King of Prussia, residing at Gohlis, Leipsic, in the Kingdom of Saxony, Germany, have invented new and useful Improvements in Mechanical Musical Instruments, of which the following is a specification.

In mechanical musical instruments constructed according to the present invention a removable chest of card-board or other material carrying projecting pins or provided with suitable holes is inserted in a suspended framing of segmental form, to which is imparted a rocking motion, whereby vibrating "tongues" are operated upon and caused to give forth musical tones.

The arrangement of suspended rocking or swinging music-plates has the following advantages over the arrangements of musical apparatus with removable music hitherto devised. The flat sheets of music by being inserted in the suspended framing take a curved form corresponding to the radius thereof, and thereby have imparted to them a tension which effectually prevents the buckling or crumpling of the sheet. The placing of the music with respect to the "playing" mechanism can be regulated with the greatest nicety. The changing of the music-sheets is also rendered very simple, as it is only necessary to remove the cover of the instrument, in order, without further trouble, to withdraw the music from the instrument. The sheets or cards also hold themselves fast in position, in consequence of their own tension, and thus the arrangements otherwise necessary for leading or conducting the sheets of music in proper position to the operating mechanism can now be dispensed with.

Figure 1 is an end view of the interior of a mechanical musical instrument constructed according to the present invention, and Fig. 2 is a side view of the same. Fig. 3 is an end view showing the apparatus provided with reeds or pipes in lieu of metal tongues.

G is a swinging segmental form mounted horizontally in bearings within the case. Upon the lower or curved surface of this frame is stretched the music sheet P, provided with pins or projections, or it may be slits. (See Fig. 3.)

D is a segmental rack-plate secured to the frame G.

A is a shaft with a worm at the end thereof, (see Fig. 1,) engaging with a worm-wheel, B. This worm-wheel is mounted upon and secured to a sleeve, *b*, which rotates upon the axle of the toothed wheel C, engaging with the segmental rack D of the frame G.

b' is a disk formed in one with the sleeve *b*, above mentioned, and *i* is a pin upon the face thereof.

Upon the axle of the toothed wheel C, and attached to the said toothed wheel, is a disk, *c*, having on its surface a hole, *i'*, with which the pin *i* upon the disk *b'* engages, and having upon its periphery a projection, *f*, adapted to come into contact with the wedge-shaped piece *h*, for the purpose hereinafter described.

e are a series of star-wheels for engaging with and operating the various vibrating tongues or notes of the instrument.

The operation of the instrument in playing is as follows: By the turning of the shaft A either by means of a crank-handle, as shown in the drawings, or by clock-work, the toothed wheel B will be caused to rotate. The toothed wheel C, which is in connection through the pin *i* and pin-hole *i'* with this wheel B during the playing of the instrument, takes into the segmental rack D, secured to the suspended framing G, and moves the latter together with the sheet of music carried thereon in the direction of the arrow and over the operating mechanism. The "note-pins" now strike against the small star-wheels *e*, and these latter cause their respective notes, which are situated immediately opposite them, to give forth their respective sounds. When the suspended framing has completed its traverse over the series of notes, the projection *f* of the disk *c*, which is in connection with the toothed wheel C, comes into contact with the wedge-shaped piece *h*, and the entire swing-frame will be pushed in the direction of its length to the extent of the breadth of half a note. By this endwise movement of the swing-frame the connecting-pin *i* escapes from the hole *i'* of the disk *c*, and the wheel C becomes disengaged from the driving-wheel B, as also the entire swing-frame, together with its sheet of music. The swinging frame G being weighted on one

side only by means of the weight *k*, the said frame now falls back until the first note-pins come back to the star-wheels *e*, and in this backward motion the note-pins pass between the various notes or sounding-tongues. Through the back motion of the swing-frame the wheel *C*, with its axle, will be turned round in a backward direction until the connecting-pin *i* again comes opposite the hole *i'*. The swing-frame and the sheet-music thereon are then caused by the spring *H* again to take the correct position with respect to the series of notes, and the pin *i* is caused to engage with the pin-hole *i'*.

Fig. 3 shows a modification of the above-described musical apparatus, in which the swinging music-sheet is adapted for employment with pipes or reeds. The sheet-music *P* will be inserted in the swing-frame in the same way as before. The projections on the sheets or cards, when used with pipes or reeds, are in the form of pins or points and staples. These points or pins and staples then actuate, as in the ordinary barrel-organ, the valve-levers of the various notes.

Instead of a sheet carrying pins and staples, a sheet provided with holes and slits may be employed, if desired.

In Fig. 3 the music-sheet is represented on the left-hand side as provided with points and

staples, and on the right-hand side with holes and slits.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is—

1. A mechanical musical instrument, constructed substantially as above described, with reference to the drawings, in which is suspended a detachable sheet of music provided with projections—such as pins, or staples and pins, or with holes or slits—for operating the music-producing mechanism of the instrument.

2. In the musical instrument or apparatus referred to in claim 1, the automatic disengaging mechanism, consisting in the combination of disk *c*, connecting-pin *i*, projection *f*, and wedge *h*, which comes into operation at the end of each section of sheet music, and allows the frame carrying the music-sheet to move into its original position, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OSKAR PAUL LOCHMANN.

Witnesses:

T. HENKES.

B. ROl.