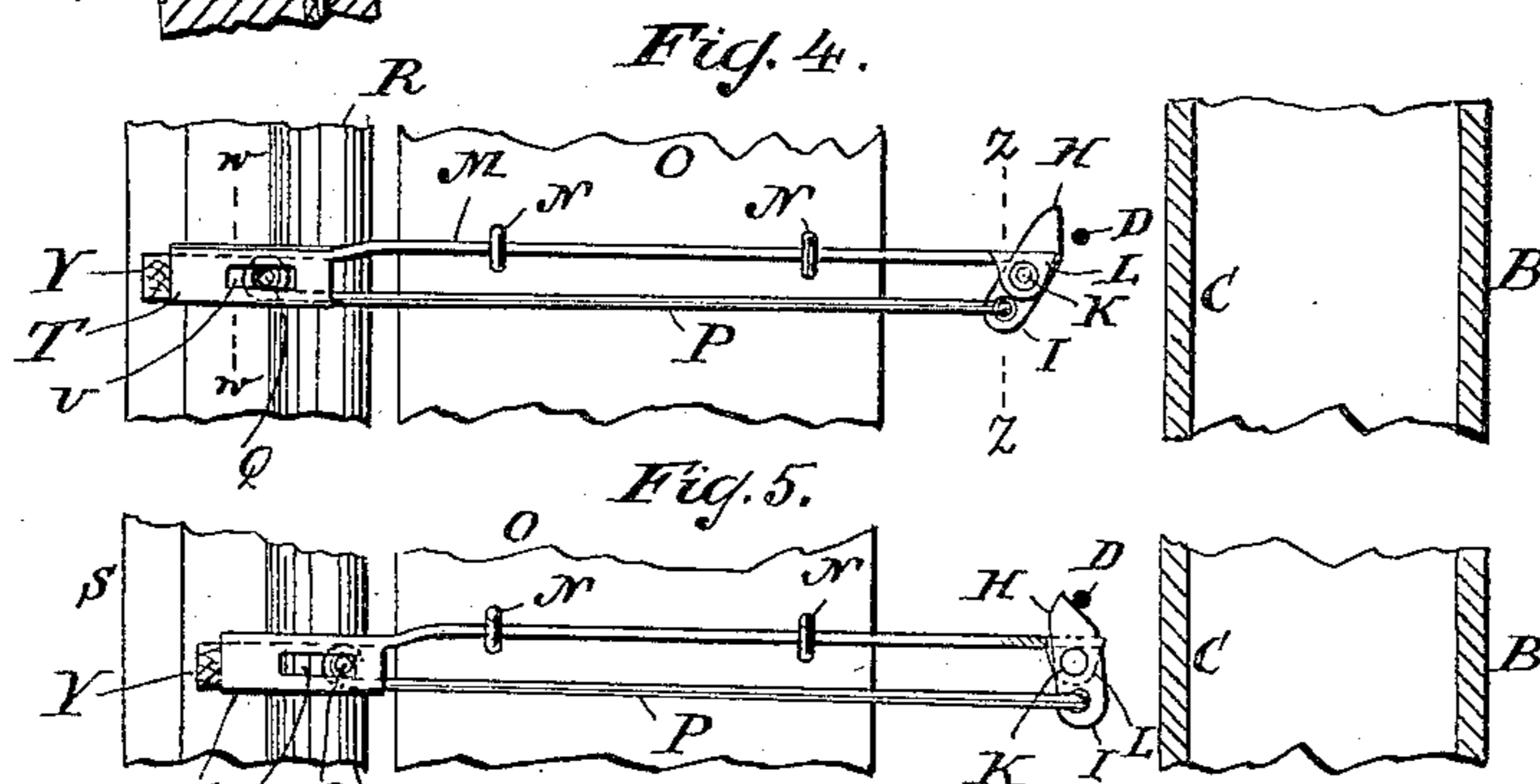
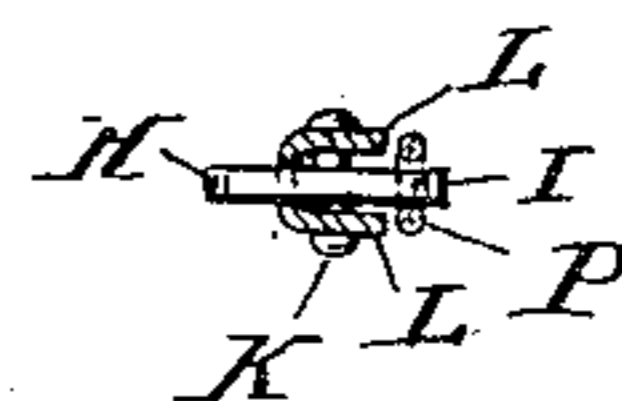
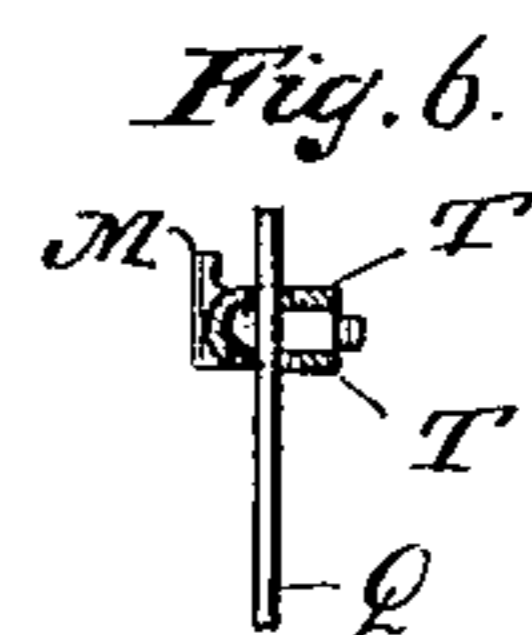
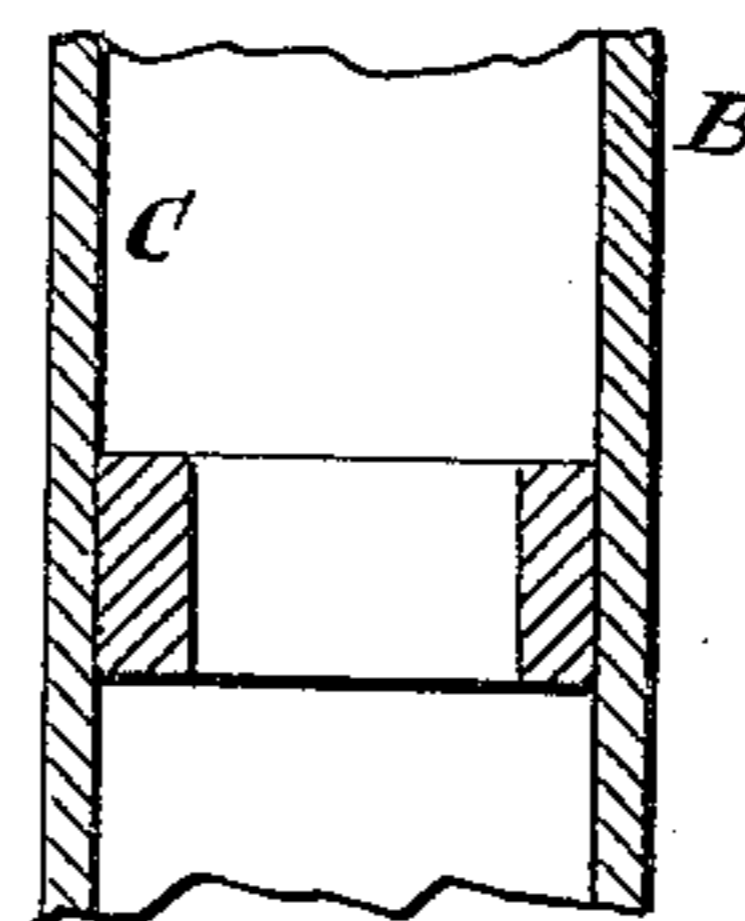
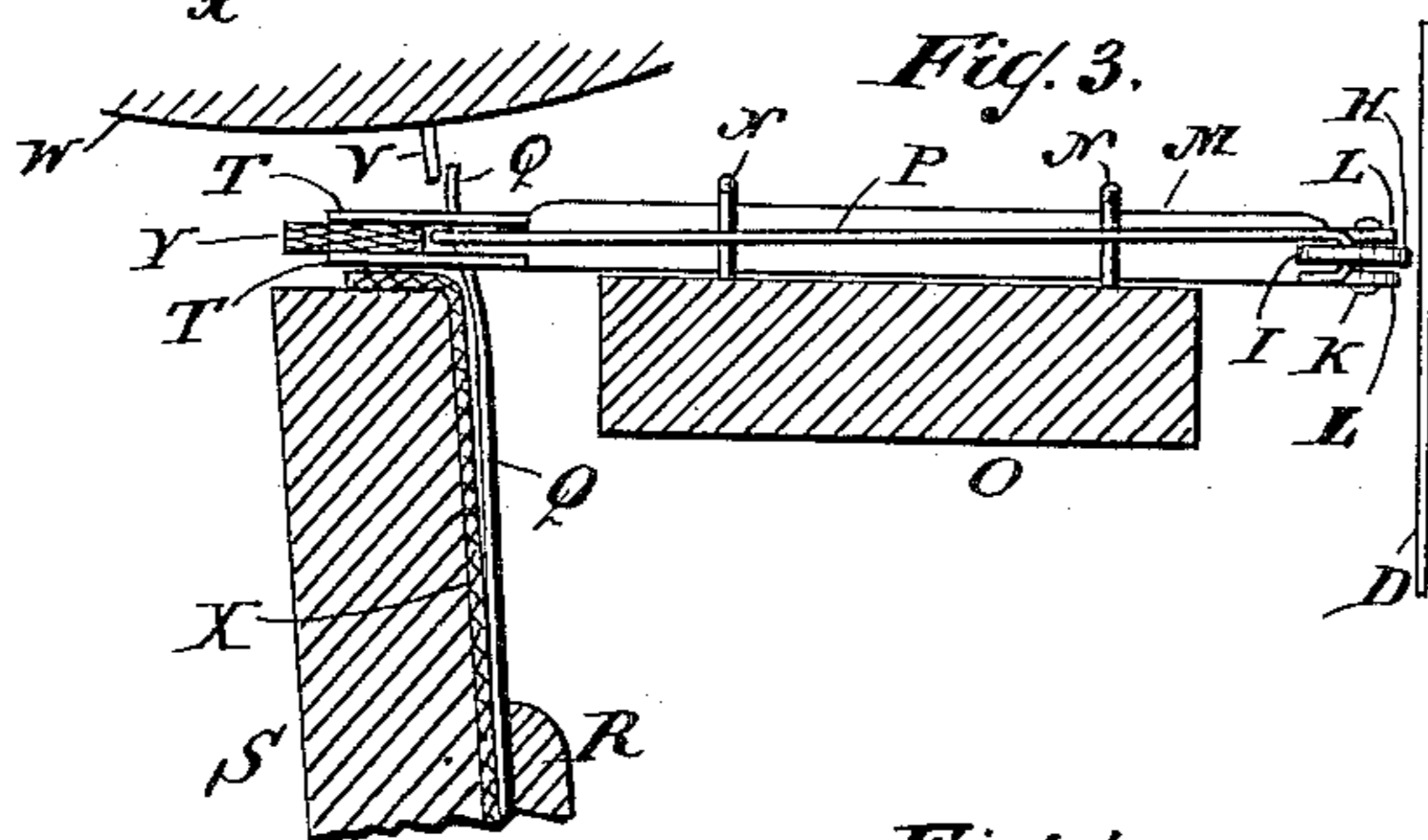
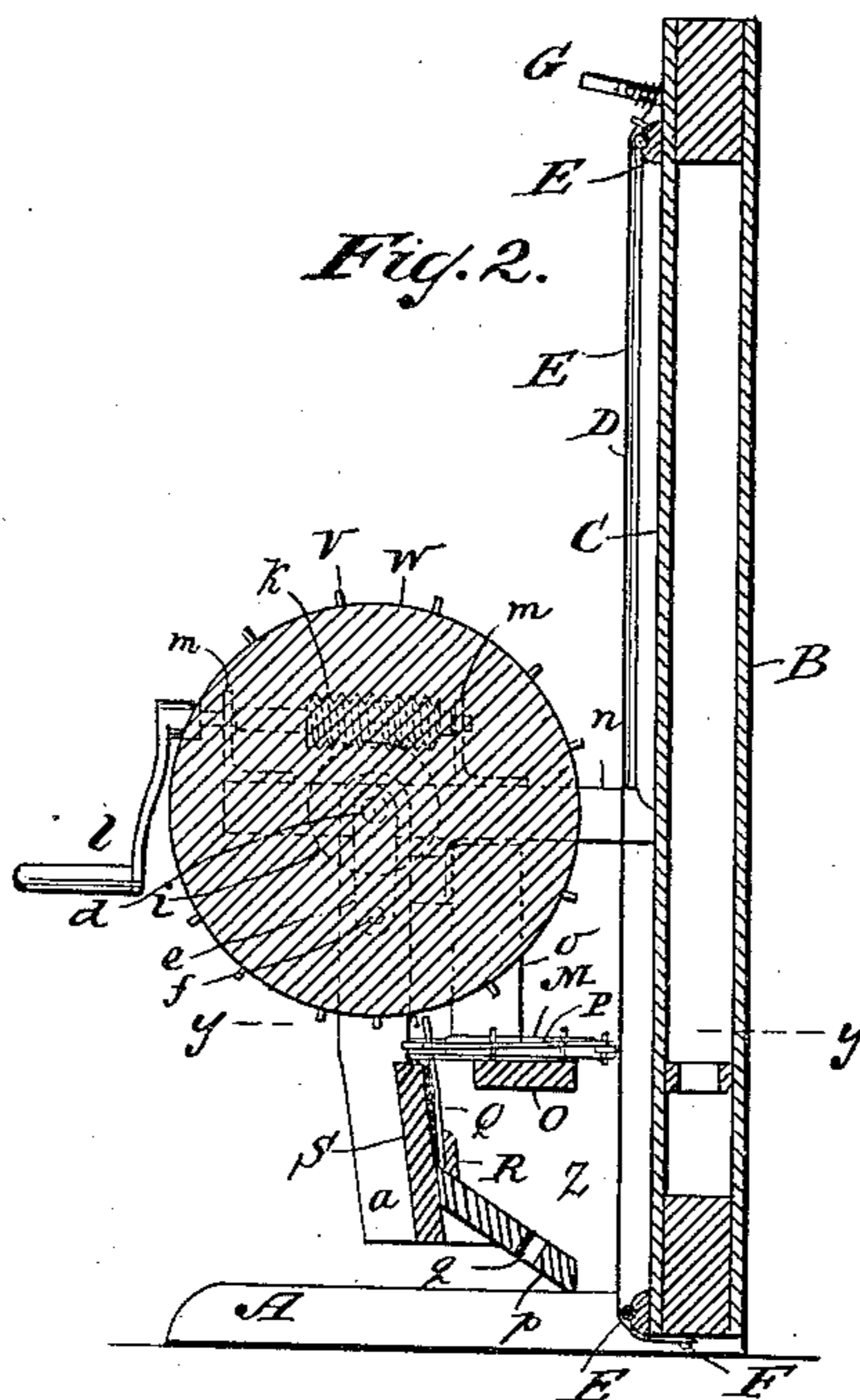
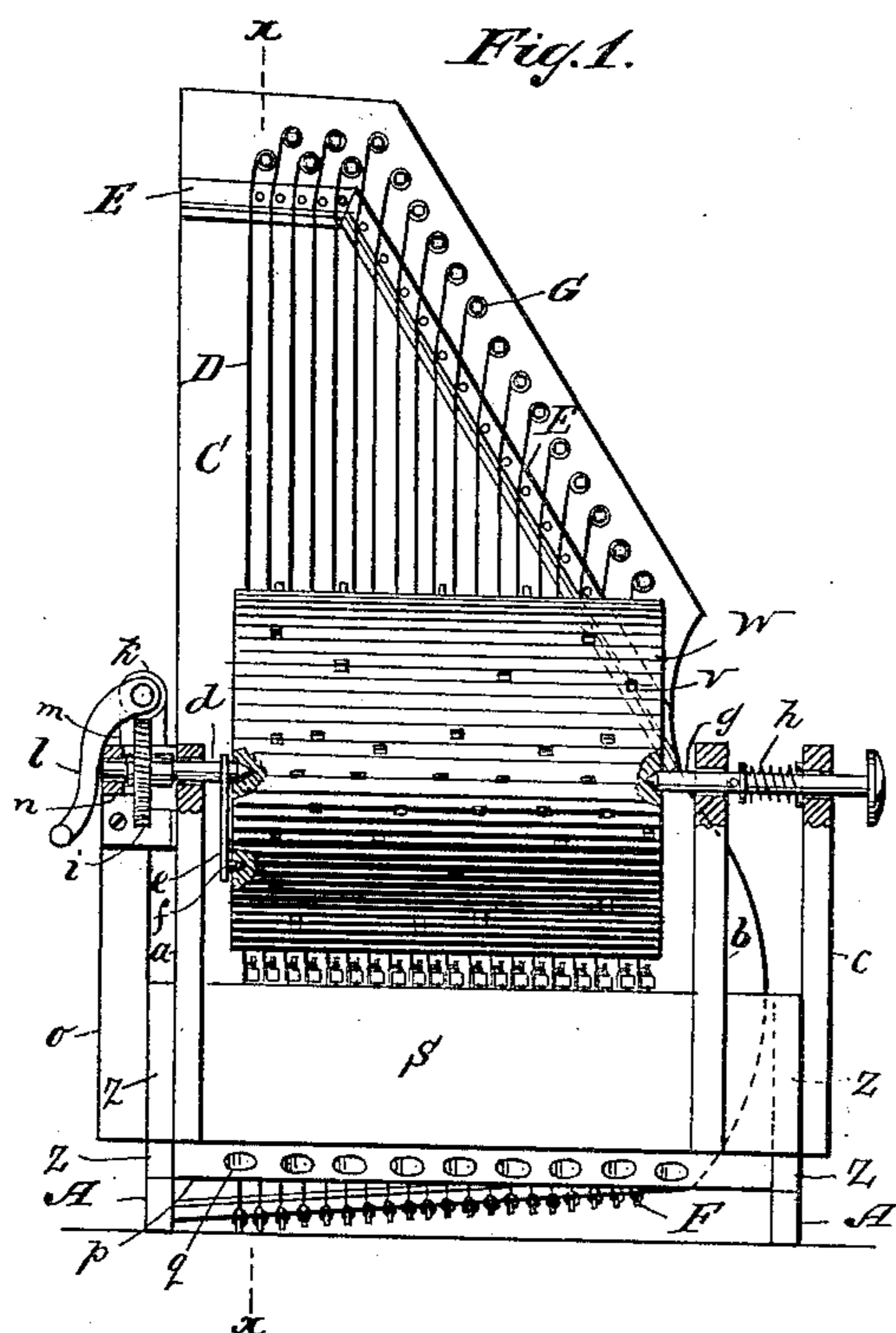


(No Model.)

H. ACKERMANN.
STRINGED INSTRUMENT.

No. 522,870.

Patented July 10, 1894.



WITNESSES: T U Q R

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Chas. E. Loenggen.

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UNITED STATES PATENT OFFICE.

HERMANN ACKERMANN, OF MARYSVILLE, KANSAS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE C. F. ZIMMERMANN COMPANY, OF DOLGEVILLE, NEW YORK.

STRINGED INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 522,870, dated July 10, 1894.

Application filed June 15, 1893. Serial No. 477,684. (No model.)

To all whom it may concern:

Be it known that I, HERMANN ACKERMANN, a citizen of the United States, residing at Marysville, in the county of Marshall and State of Kansas, have invented new and useful Improvements in Stringed Instruments, of which the following is a specification.

This invention relates to an improvement in stringed instruments and the invention consists in the novel features pointed out in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 is a face elevation of the instrument. Fig. 2 is a section along $x x$ Fig. 1. Fig. 3 is a section similar to Fig. 2 enlarged. Fig. 4 is a section along $y y$ Fig. 2. Fig. 5 is a view similar to Fig. 4 with parts in a different position than in Fig. 4. Fig. 6 is a section along $w w$ Fig. 4. Fig. 7 is a section along $z z$ Fig. 4.

The instrument shown in the drawings is adapted to be set in upright position on feet or supports A, the letter B indicating the back of the instrument and C the sounding board. The strings D are stretched over bridges E and secured to hitch pins F and tuning pins G in well known way. The strings are adapted to be vibrated by a pick formed as a lever H I fulcrumed at K to the fork or tines L at one end of an arm M adapted to slide or move back and forth in guides or eyes N on the brace or cross bar O fixed in a suitable part of the device.

To the arm I of the pick H I is hooked or secured one end of a link P the other end of said link being bent or clasped about the spring Q at or near the free end of said spring. The spring Q is secured or fixed at one end between cleat R and cross piece S.

The outer end of arm M is lapped or bent to form a fork or tines T between which lies the outer end of link P. The fork T has a slot U through which passes the free end portion of the spring Q. The spring Q has a tendency to throw or press its free end away from the strings D, but said spring is adapted to be engaged at suitable times by a pin V on a rotary barrel W said pin V forcing the free end of spring Q toward string D until the pin V has passed the free end of spring Q when

the latter moves away from string D and returns to its starting point.

It will be noticed that the link P being fixed or firmly connected to the spring Q will move with the latter while by reason of slot U in arm M the spring Q will move or swing a certain distance before its motion is imparted to arm M. When a pin V forces an end of a spring Q toward the strings D the link P is actuated to move arm I of pick H I toward the string and to move arm H away from the string until said arm H is arrested by striking against the end of arm M from which fork L projects. The spring Q continuing to move toward string D will now force the arm M together with link P and pick H I toward a string D causing the pick arm H to slide over the string and to vibrate the latter. The spring Q being now released by pin V will return or move away from string D and in said motion the spring Q will first move link P in a direction away from string D and thus swing pick H I into alignment with arm M so that the pick will not be in position in its return movement to touch the string D. The return movement of the pick occurs as soon as the spring Q in its return movement toward the cross piece S reaches the outer end of slot U in arm M so as to draw said arm M with pick H I away from string D.

The side of cross piece S facing spring Q has a cushion or pad X and into the outer end of fork T is also secured or clamped a cushion or pad Y so that the spring Q and link P when suddenly returning will not produce a noise or rattle by striking on a hard surface. The cross pieces O S are fixed or supported on side or frame pieces Z rising from the feet A. From the cross piece S rise the standards $a b$ and from a frame piece rises a standard c .

The drum W is supported at one end by a rotary center d having fixed thereto an arm e so that said arm rotates with the center. The arm e has a point or stud f eccentrically engaging the drum W so that as the center d is rotated the arm e and drum W will rotate with the center d . The center g is supported by the standards $b c$ and is held toward the drum W by a spring h so that said center g

supports the side of the drum opposite to that supported by center *d*. By moving the center *g* against the pressure of spring *h* a sufficient distance so as to clear drum *W* the latter can be taken out and another drum inserted as customary for example in music boxes when a change of tunes or of drums is desired. The center *d* is rotated by gear wheel *i* fixed on said center. This wheel *i* is engaged by a worm gear *k* provided with actuating crank or handle *l*. The worm gear *k* or its shaft is supported in standards *m* rising from an arm *n*. The arm *n* is supported on a standard *o* and said arm *n* may be further braced or steadied by being secured to the sounding board *C*. The rotation of the crank *l* by hand will rotate the drum or barrel *W* to actuate the various picks but of course the drum might be rotated by other means than by hand as for example by clock work or other motive power. By providing a suitable number of strings *D* with a pick for each string and corresponding actuating pins *V* for each pick the instrument can be arranged to play tunes in great variety.

The lower edge of the cross piece *S* is shown strengthened or braced by a strip or board *p* having perforations *q* for the ready escape of the sound. The instrument standing upright the sounding board *C* and back *B* will be free to vibrate in ready response to the strings but of course the instrument might be suit-

ably supported in flat or horizontal position if desired.

The instrument is shown in form of a harp or zither and when the drum or barrel *W* is removed the instrument may be played by hand.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a stringed instrument the combination with a pick, of a supporting arm *M* and a link carried by the arm and made to engage the pick for moving the latter on the arm substantially as described.

2. In a stringed instrument the combination with a pick, of a supporting arm *M*, a link made to engage the pick and a retracting spring connected to said link substantially as described.

3. In a stringed instrument the combination with a pick, of a supporting arm *M*, a link made to engage the pick and a retracting spring firmly connected to the link and loosely connected to the arm substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HERMANN ACKERMANN.

Witnesses:

THEO. H. POLACK,
R. HAWKINS.