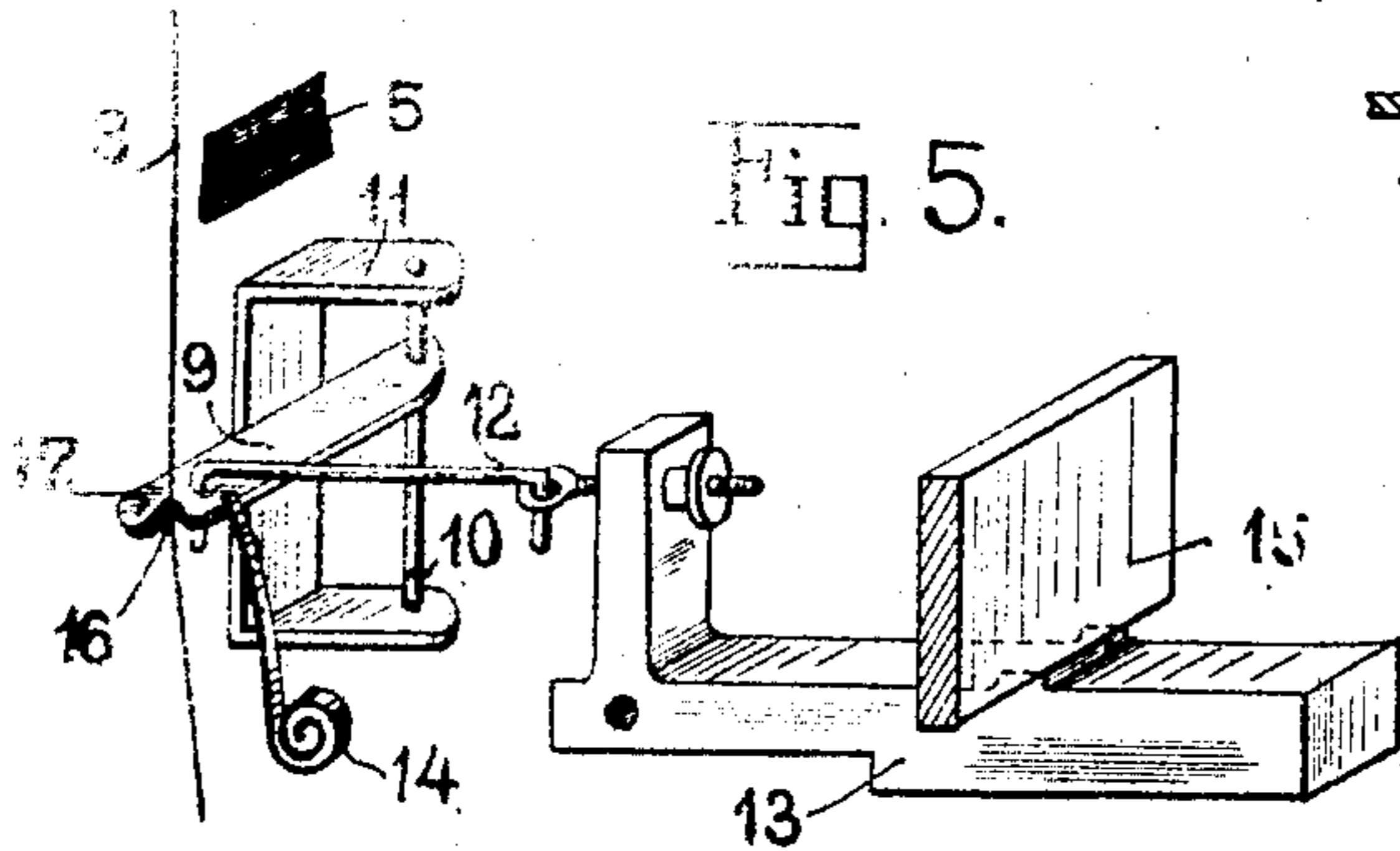
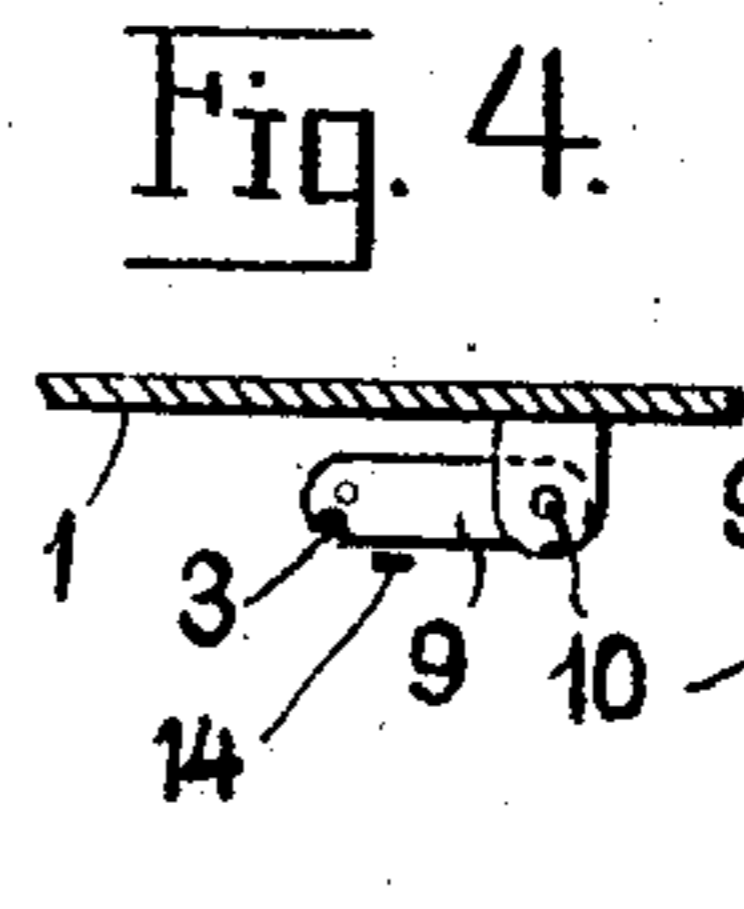
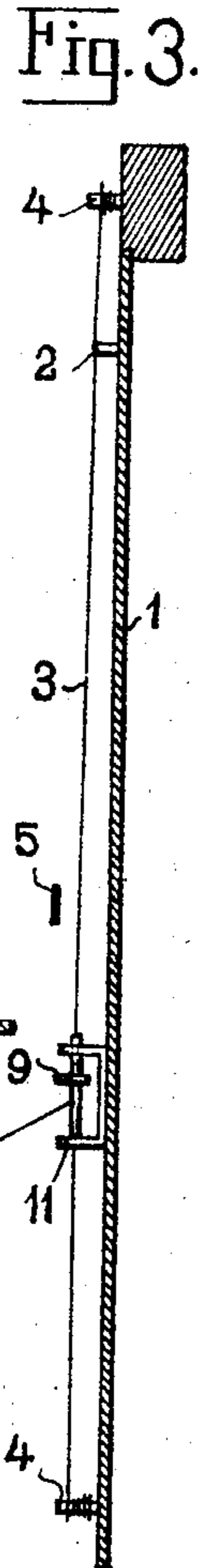
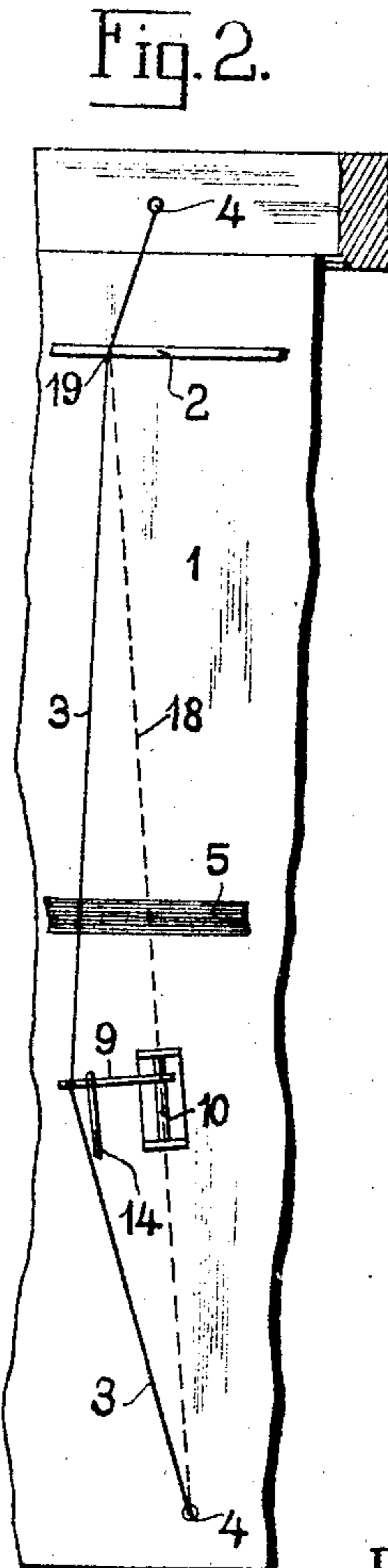
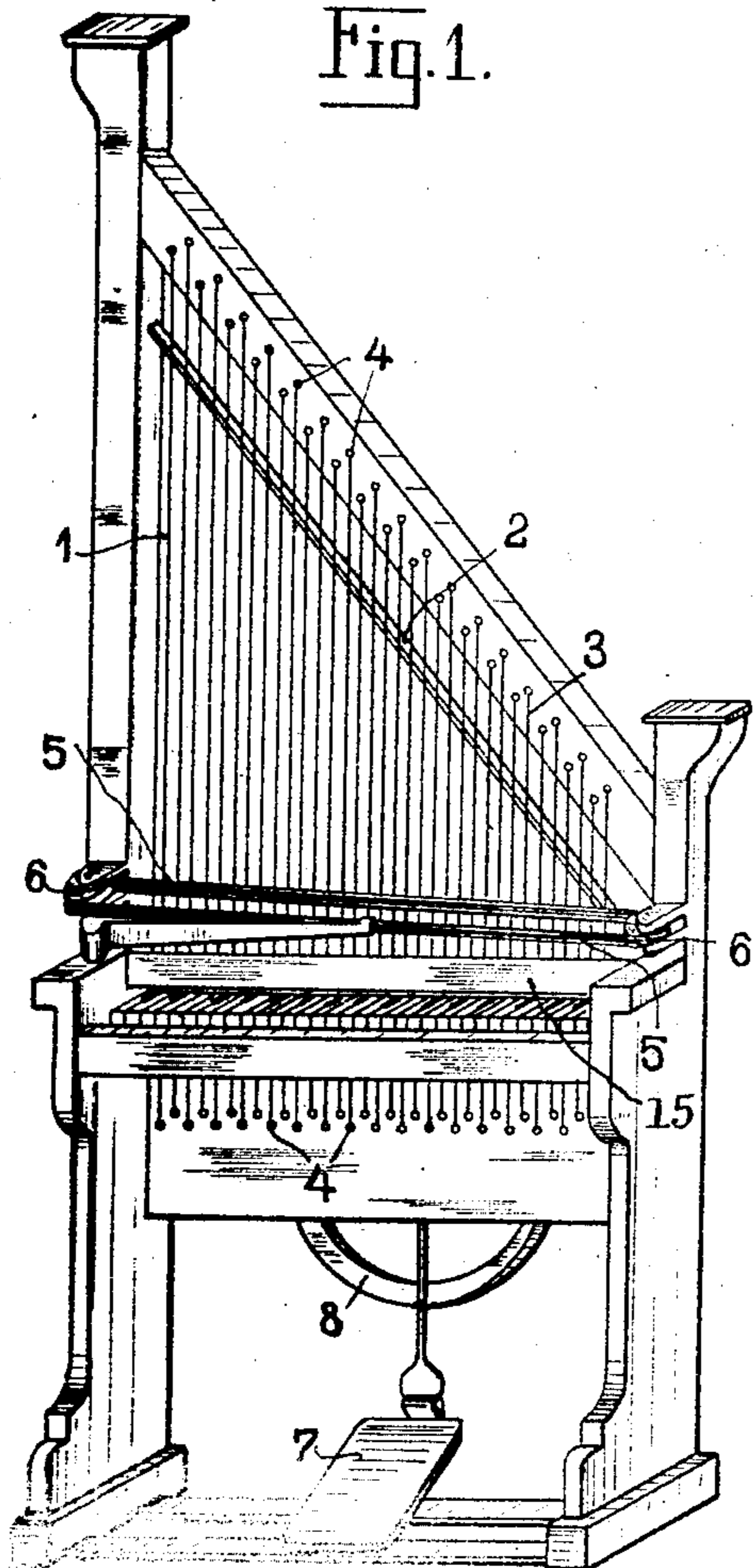


A. PIATKIEWICZ.  
PIANO VIOLIN.  
APPLICATION FILED JULY 18, 1906.

907,870.

Patented Dec. 29, 1908.



Witnesses

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# UNITED STATES PATENT OFFICE.

ALEKSANDER PIATKIEWICZ, OF CHYRÓW AUSTRIA-HUNGARY.

## PIANO-VIOLIN.

No. 907,870.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed July 18, 1906. Serial No 326,336.

*To all whom it may concern:*

Be it known that I, ALEKSANDER PIATKIEWICZ, clergyman and professor, a subject of the Emperor of Austria-Hungary, residing in Chyrów, Galicia, in the Austro-Hungarian Empire, have invented Improvements Relating to Piano-Violins; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to stringed instruments and its object is to provide means for playing zither or harp-like or similar stringed instruments by a frictional band or strap operated by foot power, the various strings being brought in and out of contact with said band or strap by keys arranged on a keyboard of the piano type. The frictional band for sounding the strings or wires forms a continuous strap which is mounted on rollers and so disposed as to be in close proximity to all the strings without normally touching them. This band is driven with a uniform motion by mechanism resembling that generally used for imparting motion to sewing machines driven by foot power.

My invention will be more clearly understood by reference to the accompanying drawing, in which:—

Figure 1 is a perspective view of the improved instrument. Fig. 2 shows a portion of the sound-box with a single string and means for moving the latter against the endless operating frictional strap. Fig. 3 is an edge view of Fig. 2. Fig. 4 is a plan of a lever for controlling a string. Fig. 5 shows a convenient form of key-mechanism for the strings, Fig. 6 is a plan view of a series of the levers shown in Fig. 4.

The instrument is provided with a sound board or box 1, and may be made similar to a harp, zither or the like and of an upright or a horizontal form. A bridge-bar 2 extends over the entire width of the instrument and receives the strings or wires 3 which are secured to the usual pegs 4. In front of and

close to the strings is disposed an endless traveling band or strap 5 mounted on rollers 6 secured to the sound board. These rollers receive rotary motion through suitable gear (not shown) in connection with a pedal 7 and driving wheel 8 after the usual manner adopted for sewing machines.

Each string is supported at a point about a quarter of its length by a lever-arm 9 fast on a spindle 10 which is secured in a bracket 11 fixed to the sound box. The arm 9 is controlled by a link 12 which is adjustably secured to an operating key 13 and a spring 14 serves to return the parts to their normal position which is determined by the contact of the key 13 with the stationary bar 15. The free end of the arm 9 is formed with a slot 16 to hold and support the string, and it has a projecting finger 17 which holds the latter against the band or strap 5. It is necessary to place the spindle or pivot 10 of the arm 9 in the straight line 18 between the contact point 19 of each string with the bridge 2 and in lower peg 4 as is indicated at Fig. 2. By this arrangement it will be possible to move the string against the traveling band or strap and so cause the latter to vibrate as many strings as are moved and this without altering the note to which the strings are attuned. This is due to the fact that the tension remains unaffected by reason of the smallness of the angular motion of the operating arm, while moreover, the strings can be pressed against the traveling friction band or strap more or less firmly for soft and loud playing.

Obviously I may adopt modified parts to provide the connection between the arm and the key so as to suit any kind of instrument, which itself may have different forms with any number of strings for upright, or for horizontal mechanism and be provided with dampers and similar devices for imitating the sounds of various existing instruments.

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.—

In a musical instrument, the combination, of a series of strings, means for maintaining them under tension, a traveling band, means

for moving the strings independently of each other against said band comprising pivoted arms each holding a string in its free end, keys, and links connecting the keys and said  
5 arms, and a spring bearing against each arm and normally holding it retracted, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this 2nd day of July, 1906.

ALEKSANDER PIATKIEWICZ.

Witnesses:

STANISLAW DZBANSKI,  
ALVESTO S. HOGUE.