

No. 617,413.

Patented Jan. 10, 1899.

J. M. BUTCHER.

BICYCLE ALARM.

(Application filed Apr. 8, 1898.)

(No Model.)

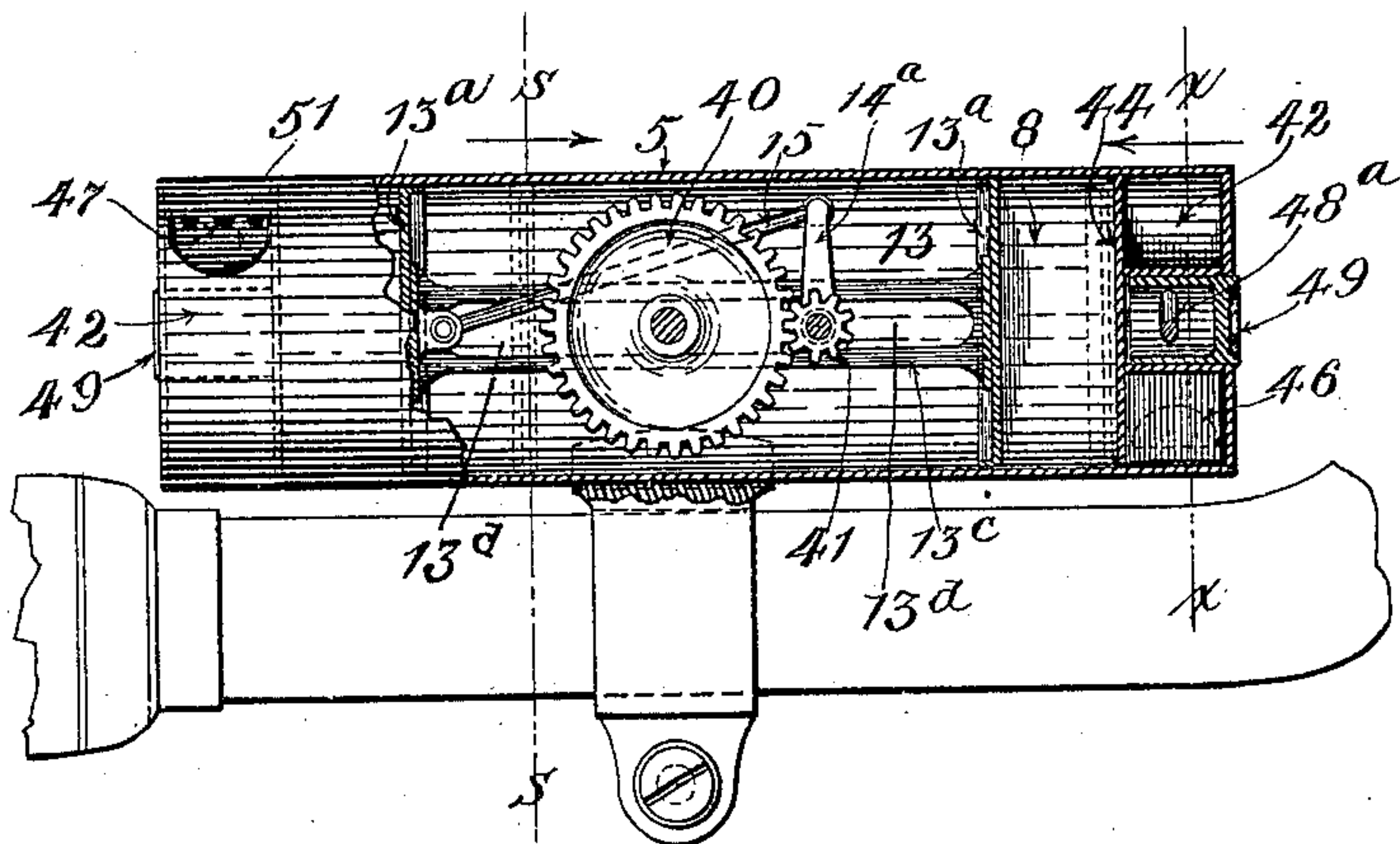


Fig. 1.

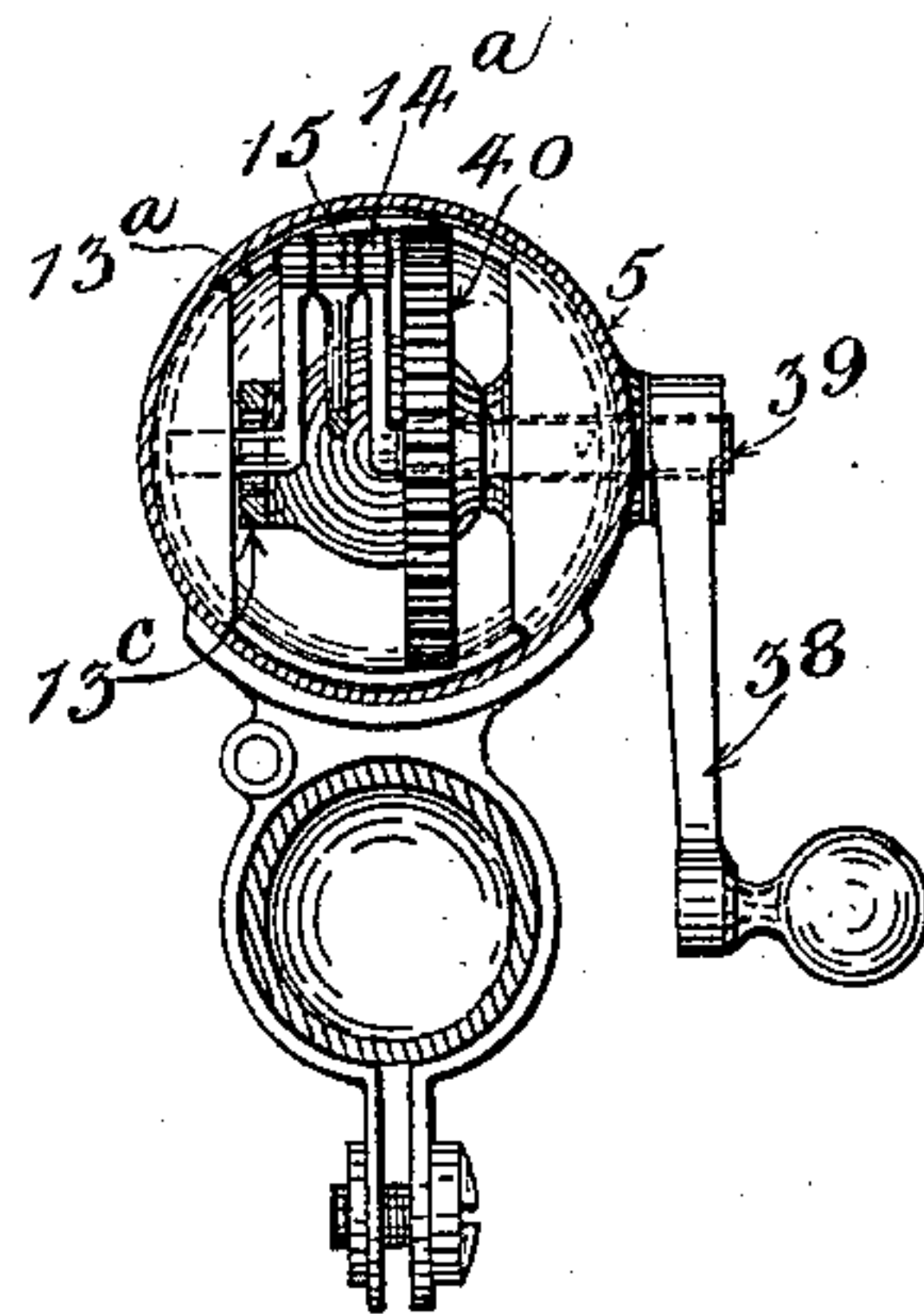


Fig. 2.

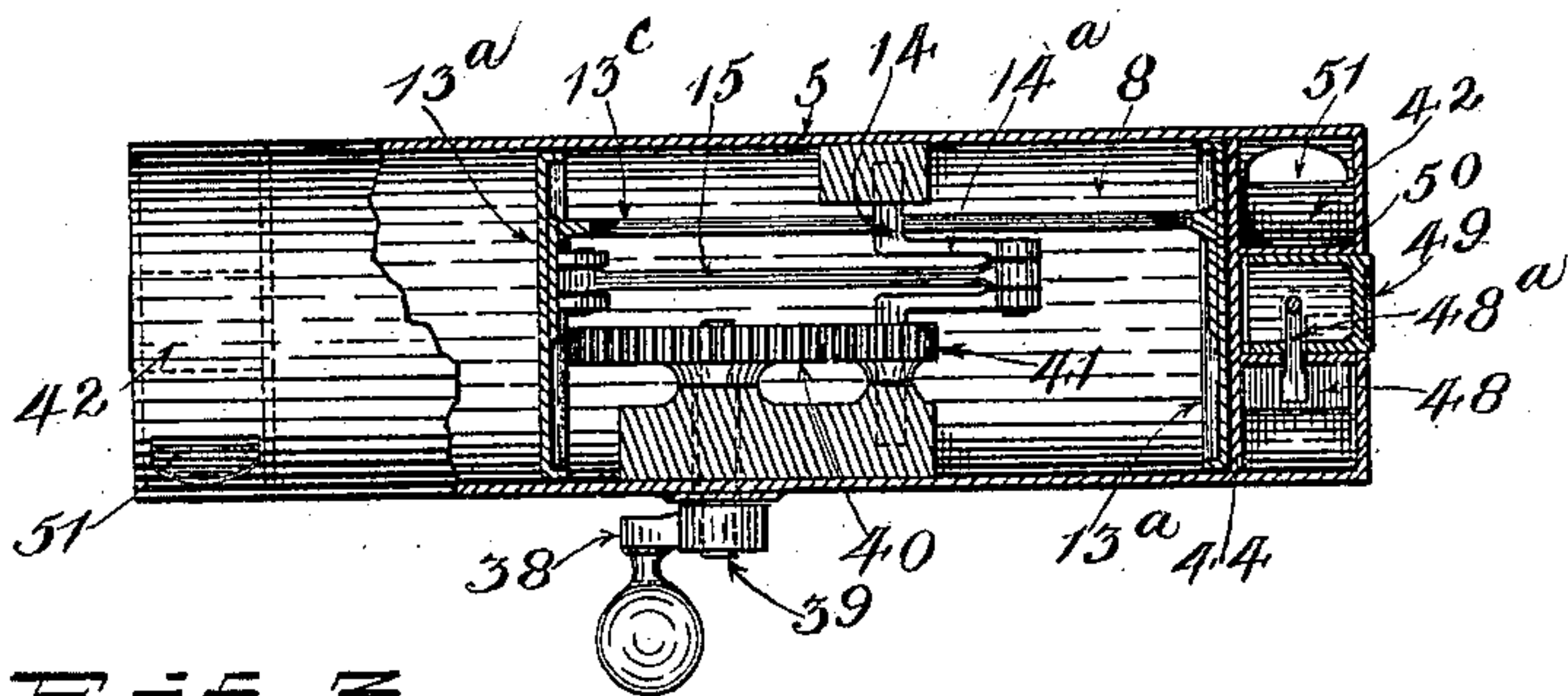


Fig. 3.

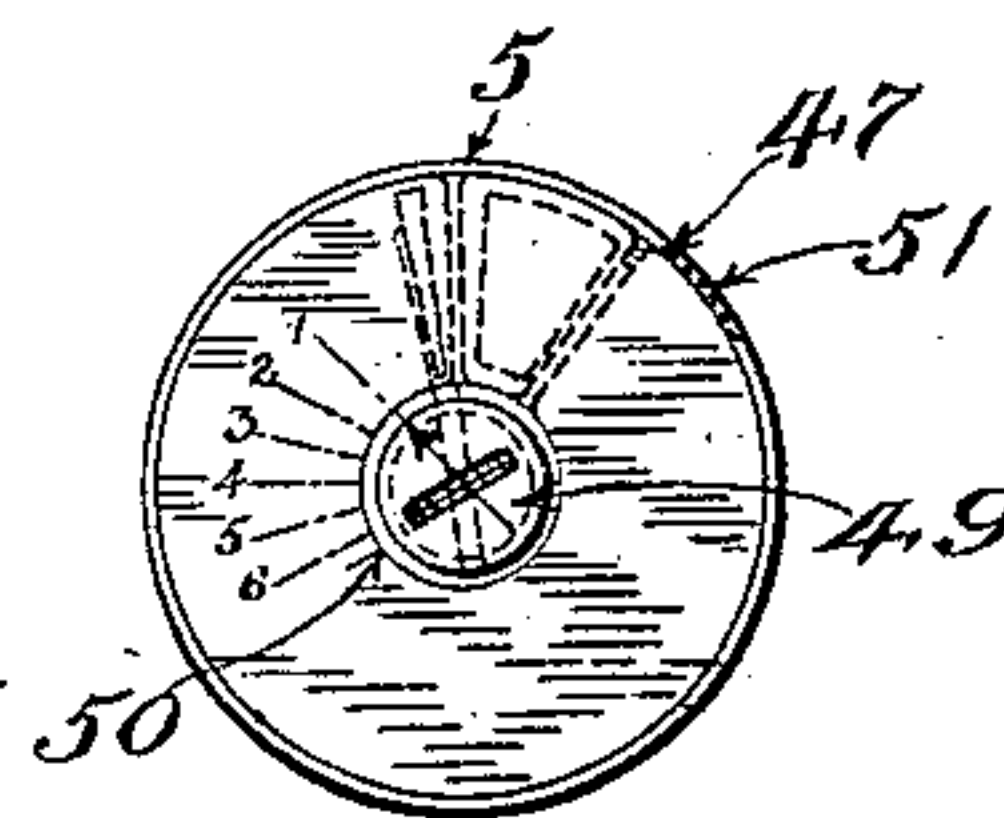


Fig. 4.

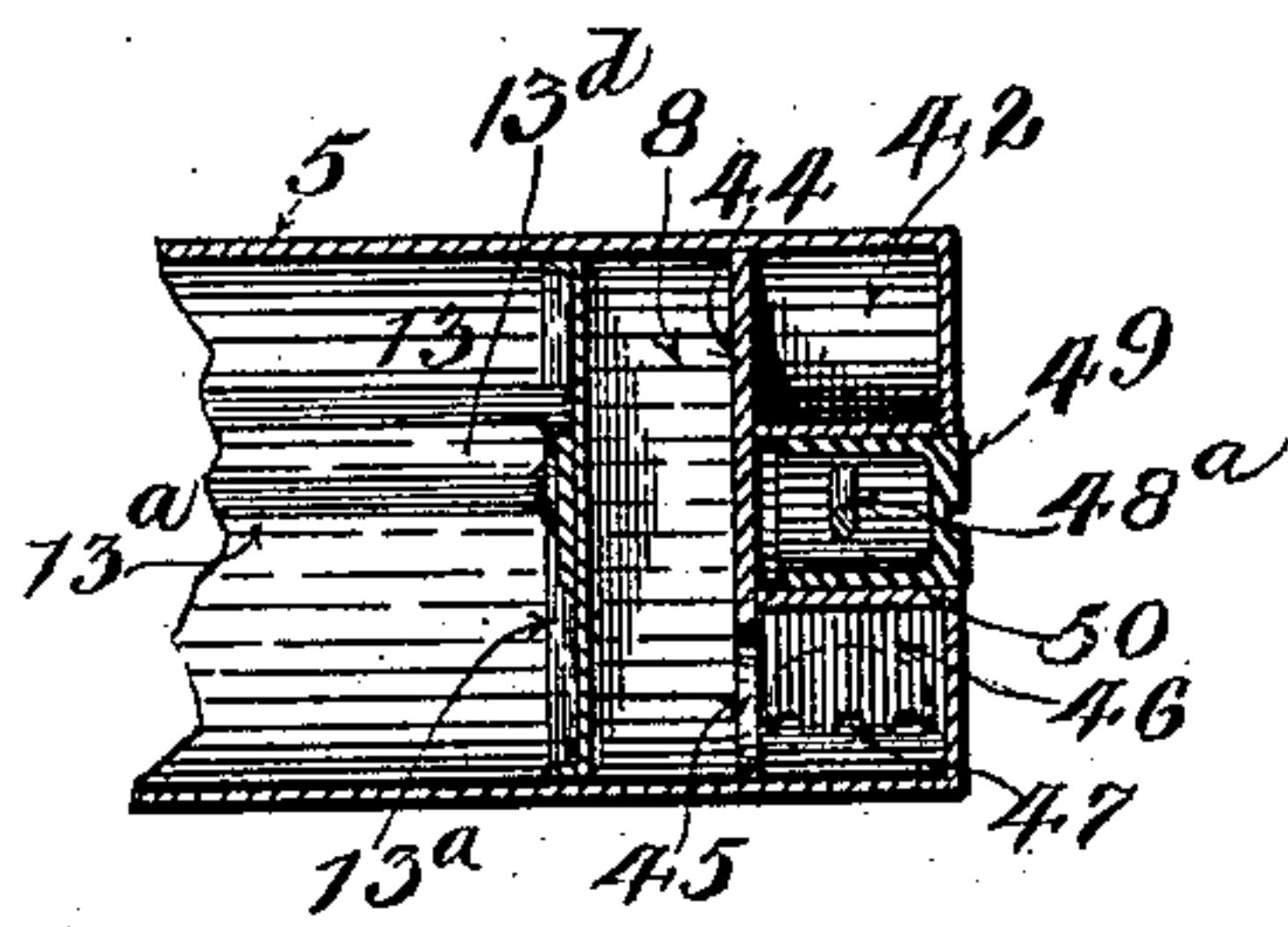


Fig. 5.

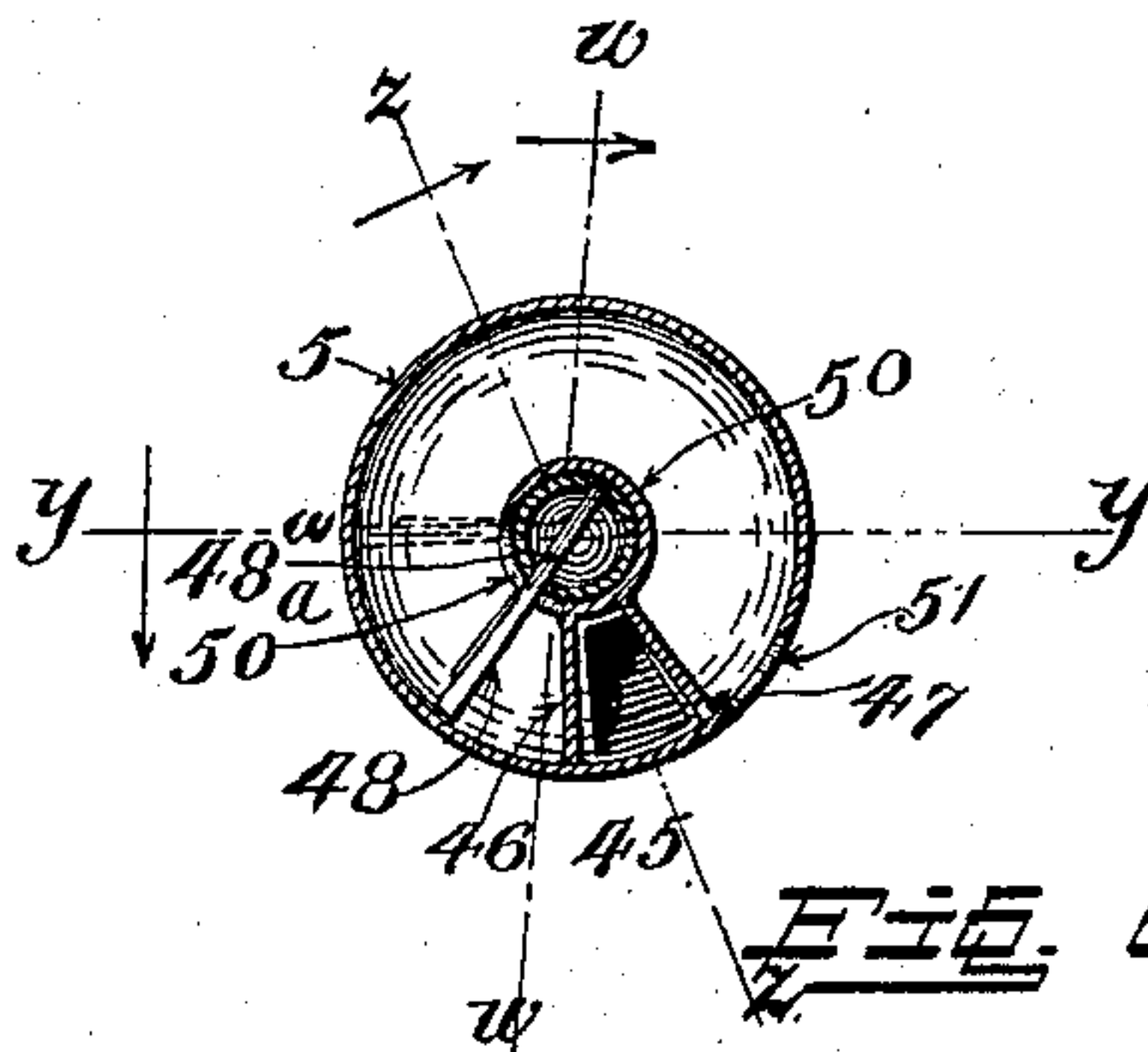
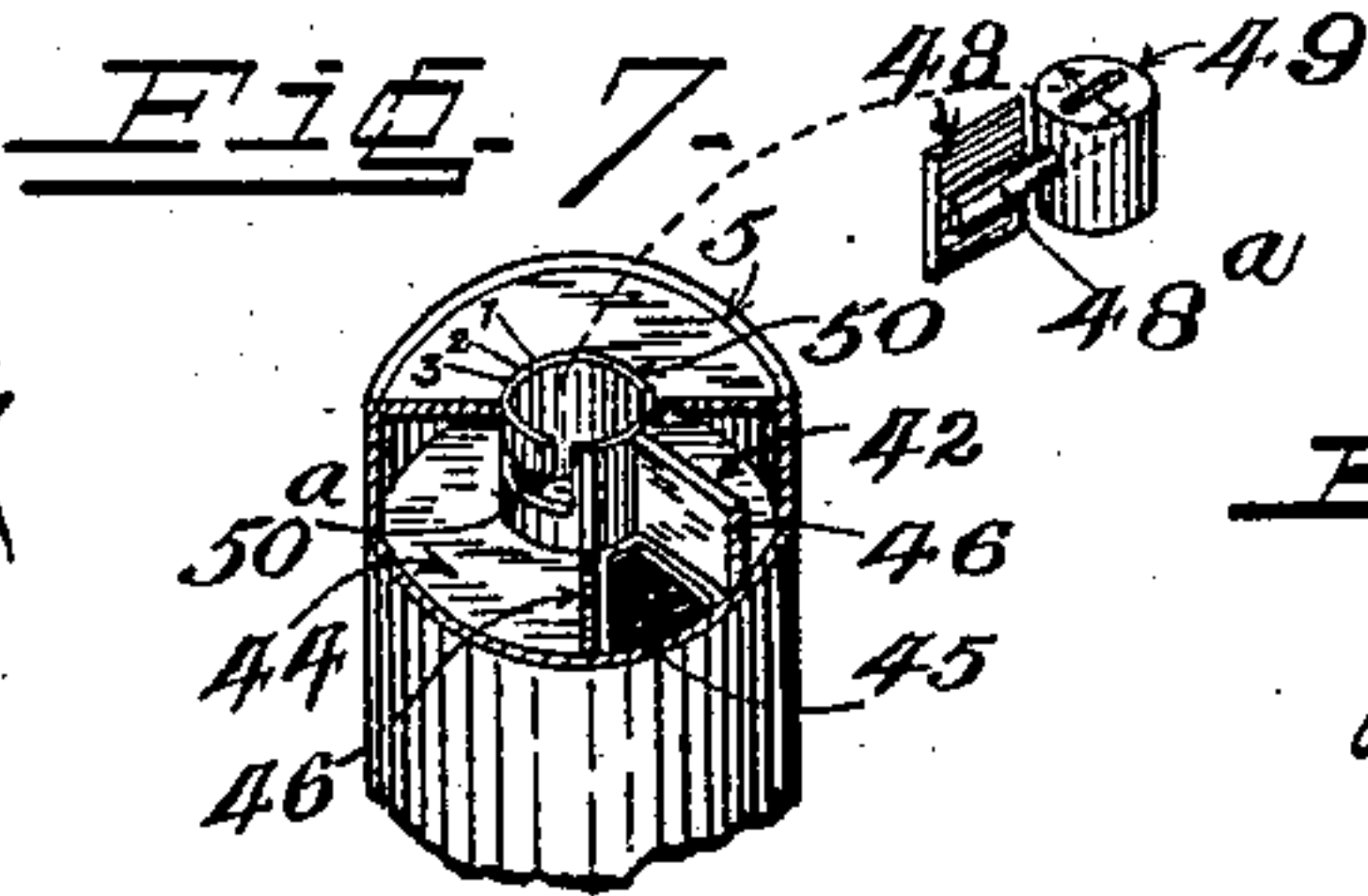


Fig. 6.

WITNESSES:

L. H. Conway,
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INVENTOR.

James M. Butcher.

BY *[Signature]*
ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES M. BUTCHER, OF DENVER, COLORADO, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE BUTCHER SIGNAL AND ALARM COMPANY, OF COLORADO.

BICYCLE-ALARM.

SPECIFICATION forming part of Letters Patent No. 617,413, dated January 10, 1899.

Application filed April 8, 1898. Serial No. 676,869. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. BUTCHER, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Alarm Mechanism; and I do 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 the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in alarm mechanism, more especially intended for use in connection with bicycles, but which may be employed in many other relations where an alarm is needed.

My object is to provide a device of this class which shall be simple in construction, economical in cost, reliable, durable, and efficient in use; and to these ends the invention consists of the features, arrangements, and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 shows my improved mechanism, partly in section, taken on the line *y y*, Fig. 6. Fig. 2 is a cross-section taken on the line *s s*, Fig. 1, viewed in the direction of the arrow. Fig. 3 is similar to Fig. 1, the section being taken in another plane. Fig. 4 is an end elevation of the device. Fig. 5 is a sectional detail taken on the line *z z*, Fig. 6. Fig. 6 is a section taken on the line *x x*, Fig. 1, viewed in the direction of the arrow. Fig. 7 is a perspective view in detail illustrating features of construction.

Similar reference characters indicating corresponding parts in the views, let the numeral 5 designate a casing preferably cylindrical in form and inclosing the piston-chamber 8. In the opposite extremities of this casing are formed two whistling-chambers designated by the numeral 42. These chambers are separated from the piston-chamber by transverse partitions 44, in which are formed openings 45, communicating with the auxil-

iary chambers inclosed by walls 46. The auxiliary chambers form a continuation of the piston-chamber, and the air escapes therefrom through small apertures 47, passing thence to openings 51, where it escapes, causing the whistling sound.

Within the piston-chamber 8 is located a double piston 13, composed of two heads 13^a, connected by a slotted arm 13^c. Centrally journaled in the casing 5 and passing through the slot 13^d in the arm 13^c is a spindle 14, in which is formed a crank 14^a. A pitman 15 is connected at one extremity with this crank, while its opposite extremity is connected with one of the piston-heads 13^a. Also journaled in the casing 5 is a spindle 39, whose outer extremity is provided with a crank 38, while upon its inner extremity is mounted a fast gear 40, meshing with the pinion 41, fast on the crank-spindle 14.

The chambers 42 may, if desired, be of different capacities, whereby the tone of the whistles may be regulated by adjusting a radial partition 48, having a stem 48^a, made fast to a movable cap 49, whose outer extremity is exposed and provided with a nick or groove for convenience of adjustment with a screw-driver. This cap 49 is inserted in the outer open end of a cup 50, centrally located in each of the chambers 42. The wall of this cup is slotted, as shown at 50^a, to permit the necessary movement of the stem of the radial partition. The end wall of each chamber is so graduated (see Fig. 4) that the said partition may be accurately and correspondingly adjusted on any number of devices in order that all may produce the same tone when in operation.

A suitable clamp 52 (see Figs. 1 and 2) is employed to fasten this form of the device to the handle-bar of the machine.

When it is desired to operate the mechanism, the spindle 39 is turned by means of the hand-crank 38. This movement of the spindle operates the gear 40, from which motion is communicated to the pinion 41 on the crank-spindle 14. The resulting movement of the spindle 14 reciprocates the piston 13 through the medium of the pitman 15. This reciprocation of the piston forces the air into the

whistling-chambers, whence it escapes for the purpose heretofore explained.

It is evident that by making the gear 40 and the pinion 41 of the proper relative proportions any desired speed may be imparted to the piston.

Having thus described my invention, what I claim is—

1. In an alarm mechanism, the combination of a casing having a piston-chamber and a whistling-chamber, the two chambers being separated by an apertured partition, the whistling-chamber being provided with a suitable escape for the air, a piston located in the piston-chamber, a crank-spindle journaled in the casing and passing through the piston-chamber, a pitman connecting the piston with the crank of the spindle, a pinion fast on the crank-spindle, another spindle journaled in the casing, a gear fast on the last-named spindle and meshing with said pinion, and exterior means attached to the last-named spindle for operating the mechanism.

2. In an alarm mechanism, the combination of a casing inclosing a piston-chamber and a whistling-chamber separated from the piston-chamber by an apertured partition, an auxiliary chamber formed in the whistling-chamber and communicating with the piston-chamber by the aperture in the said partition,

a suitable escape-port leading from the auxiliary chamber, a movable partition located in the whistling-chamber for varying its volume and controlling the tone of the whistle, a piston located in the piston-chamber, and suitable means for operating the piston.

3. In an alarm mechanism, the combination of a casing inclosing a piston-chamber and two whistling-chambers separated from the piston-chamber by apertured partitions, one whistling-chamber being located in each extremity of the casing, a double-headed piston located in the piston-chamber, the two heads being separated and connected by a suitable arm, a crank-spindle passing through the piston-chamber, a pitman connecting the piston with the crank of the spindle, and suitable means for operating the crank-spindle, whereby the piston is reciprocated, comprising a pinion fast on the crank-spindle, another spindle journaled in the casing, a gear fast on the last-named spindle and meshing with the said pinion, and an exposed hand-crank fast on the gear-spindle.

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

JAMES M. BUTCHER.

Witnesses:

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EDITH HIMSWORTH.