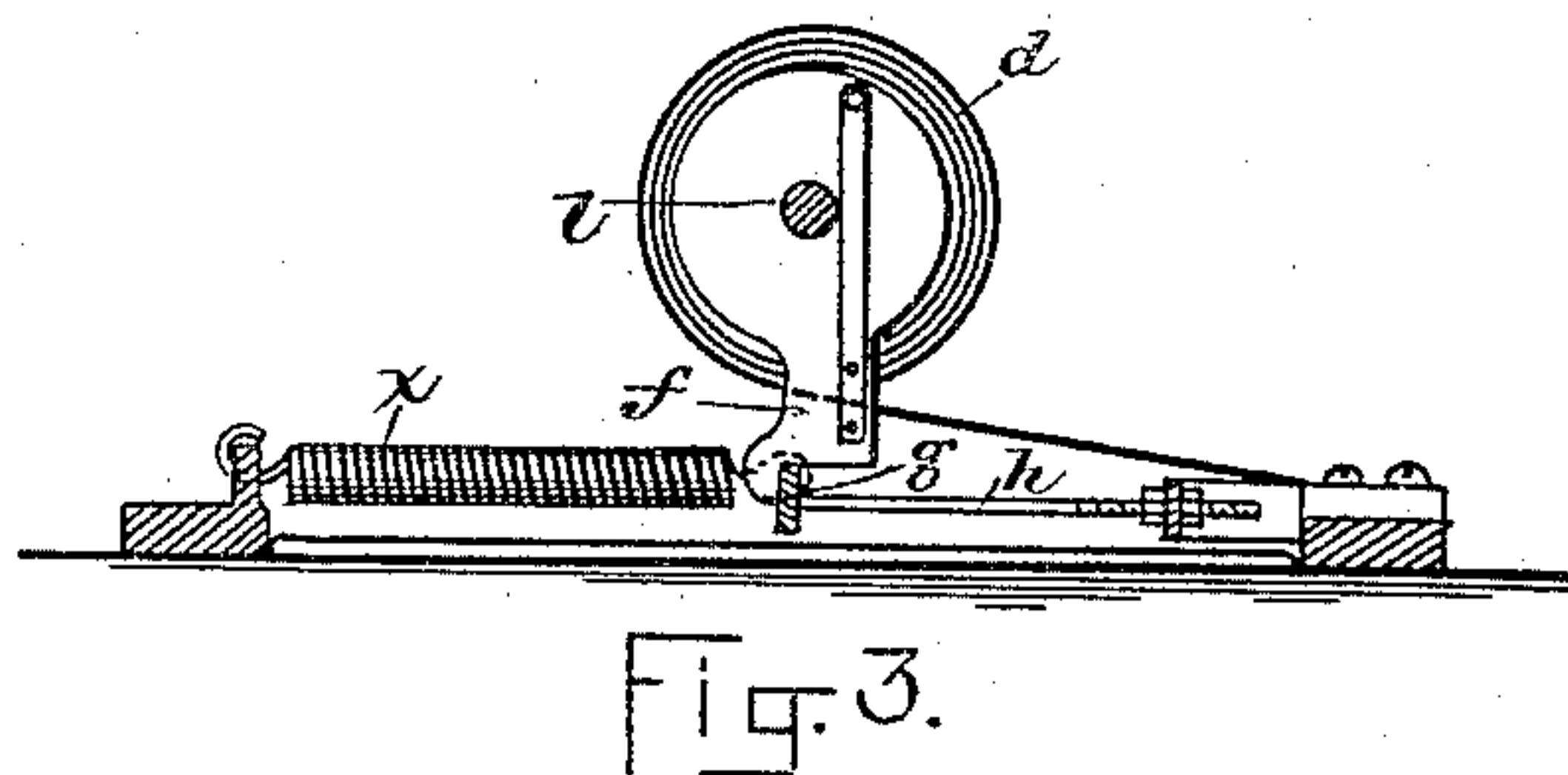
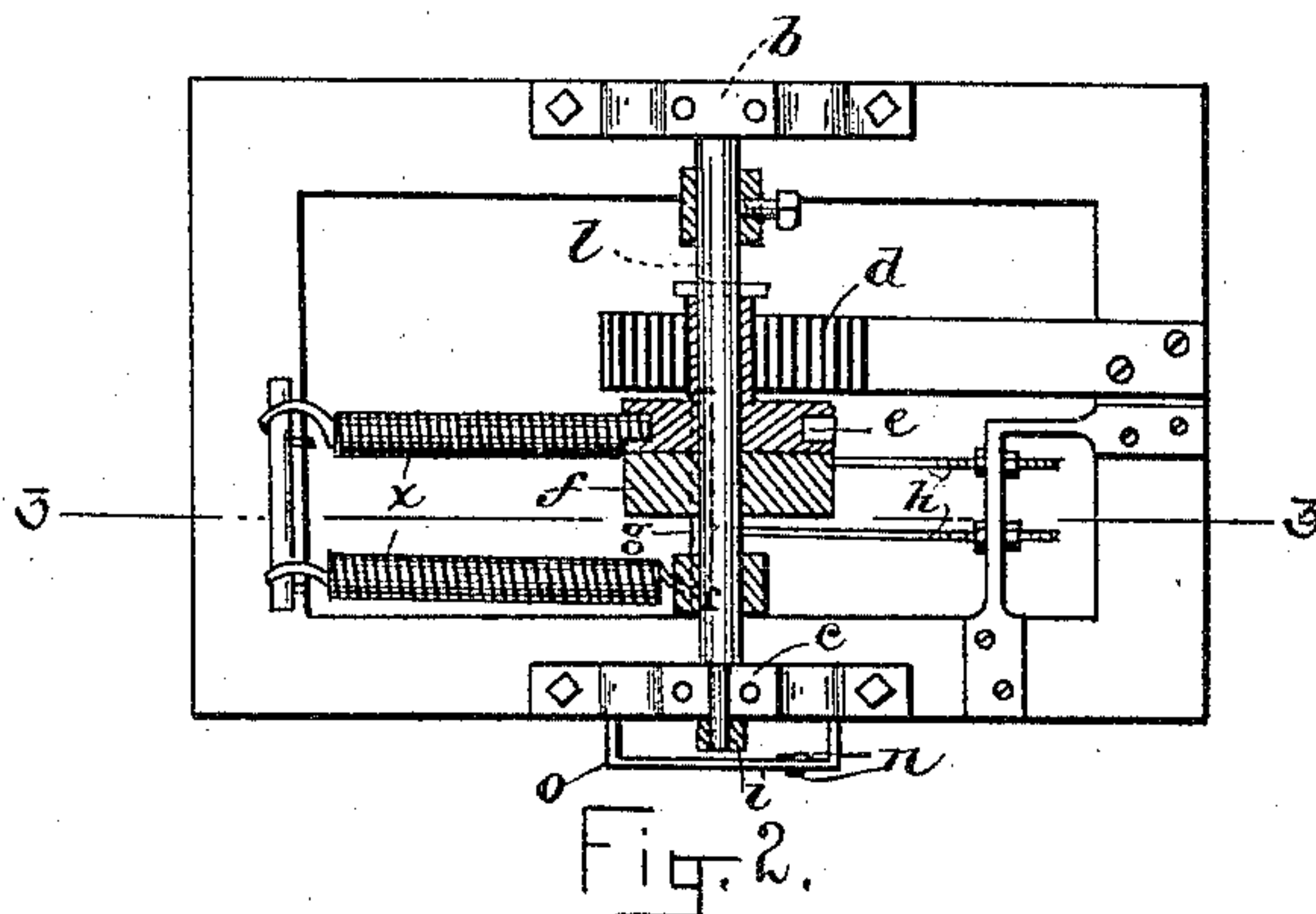
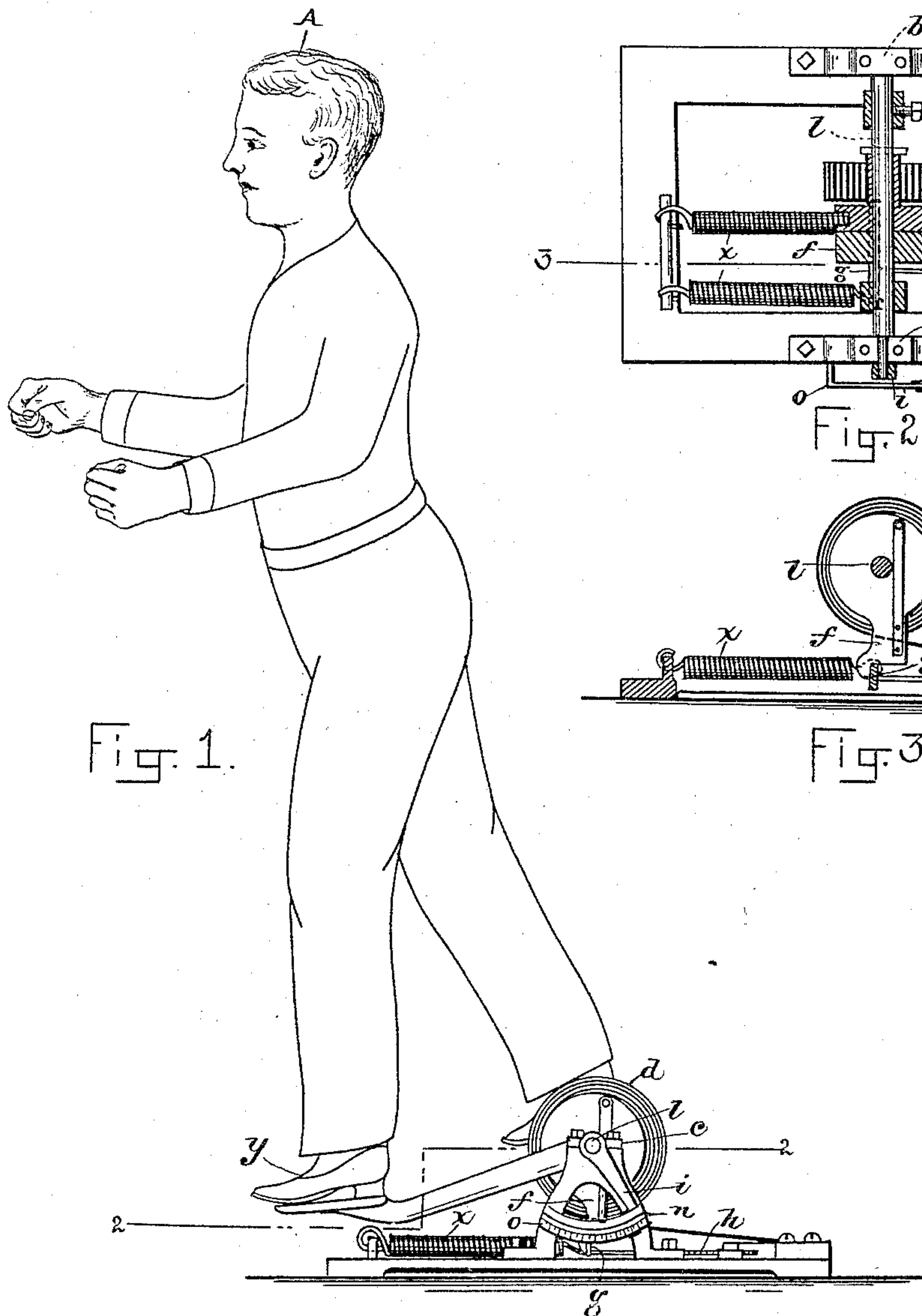


(No Model.)

G. S. SANBORN.
EXERCISING APPARATUS.

No. 444,674.

Patented Jan. 13, 1891.



WITNESSES:

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GEORGE S. SANBORN, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE SANBORN EXERCISING MACHINE COMPANY, OF PORTLAND, MAINE.

EXERCISING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 444,674, dated January 13, 1891.

Application filed January 28, 1890. Serial No. 338,348. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. SANBORN, a citizen of the United States, residing at Lynn, in the county of Essex and Commonwealth of Massachusetts, have invented a new and useful Exercising Apparatus, of which the following is a specification.

My invention relates to improvements in exercising apparatus in which a representation of a human figure is used to receive the blow and the force of said blow indicated by means of a graduated arc.

The object of my invention is to produce an apparatus of the above class which will afford the same exercise obtained in an actual boxing contest and at the same time indicate the force of blows received by it.

The accompanying drawings are illustrations of my invention.

Figure 1 is a side elevation of the entire apparatus. Fig. 2 is a horizontal section on line 2 2, Fig. 1. Fig. 3 is a longitudinal vertical section on line 3 3, Fig. 2.

Similar letters refer to similar parts throughout the several views.

A is a representation of a human figure constructed of wood or other light material of sufficient strength and padded above the belt, so that it may be struck with bare fist. The figure A is rigidly attached to rod *l*, which turns freely in bearings *b* and *c*. To the rod *l* a spring *d* is attached, which is also secured to some permanent part of the apparatus. The purpose of the spring *d* is to maintain figure A in its forward or normal position, as shown in Fig. 1, and at the same time afford greater or less resistance to the force of the blow upon said figure, according to the tension of the spring, which is regulated by means of a device *e*, attached to said rod *l*, and adapted to wind or unwind the same upon the rod.

While I prefer to use a coiled spring for the purpose above specified, I do not wish to limit my invention thereto, as it is evident that other forms of springs may be used to accomplish the same purpose.

To the rod *l* a bar or arm *f* is rigidly attached, one end of which bears against the cross-piece *g*, which runs freely on rods *h*.

To the ends of the cross-piece *g* the springs *x* are attached and also secured to some permanent part of the apparatus. The springs *x* are so adjusted with reference to the force exerted by spring *d* and weight of figure A that when at rest the foot *y* of said figure is held slightly above the base of the apparatus, bringing it nearly on a level with the other foot. When figure A has been thrown back and is moving under the forward impulse given it by spring *d*, the arm *f* catches on the cross-piece *g* before the figure has reached the position just described, and the springs *x* begin to act to retard said motion. In this way I modify the action of spring *d* and prevent violent impact that would otherwise occur were the foot *y* permitted to be brought in contact with the base of the apparatus, while at the same time the lay figure is permitted to be brought to its normal position.

At some convenient position near the rod *l* an arc *o* is secured to the apparatus, said arc being graduated with reference to spring *d*, and so placed that its center falls on rod *l*. Rigidly attached to rod *l* and movable therewith is a small arm *i*, radial to arc *o* and at its extremity almost in contact with the same. When figure A is thrown back by a blow, the force of same may be ascertained by noting position to which arm *i* is carried on the arc *o*.

To further register the force of the blow, so that it may be ascertained after figure A has returned to its normal or forward position, I make use of the following device: In a circular slit running parallel with arc *o* is fitted an elastic strip holding in place on graduated side of said arc by slight pressure against the sides of said slit the pointer *n*. The other end of said strip extends through the slit (see Fig. 2) beyond the end of arm *i*, so that arm *i* when moved comes in contact therewith (see Fig. 1) and carries the same and pointer *n*, attached thereto, around arc *o*. When arm *i* falls back, pointer *n* is left in position to which it has been so carried, and the force of the blow received by figure is thus registered on arc *o*.

I do not consider my invention limited to the particular arrangement of arm *i*, arc *o*, and pointer *n*, described above, for it is very

evident that the same elements with slight modifications can be arranged in several ways to accomplish the same result.

It will be noticed that in my apparatus
5 spring *d* has two functions—to restore figure A to an upright position and by device just described indicate force of blow received by said figure.

I claim as my invention and desire to secure by Letters Patent in an exercising apparatus—

1. The combination of the base, a rod rev-
olubly mounted thereon, a representation of
a human figure rigidly attached to said rod
15 and adapted to move therewith, a spring to
restore said figure to and maintain it in its

normal or upright position, and a spring to restrain the forward motion of said figure, substantially as and for the purposes specified.

2. The combination of the base, a rod rev- 20
olubly mounted thereon, a representation of a human figure rigidly attached to said rod and adapted to move therewith, a spring to restore said figure to and maintain it in its
normal or upright position, a short arm car- 25
ried by said rod, and a graduated arc, substantially as and for the purposes specified.

GEORGE S. SANBORN.

Witnesses:

BENJAMIN PHILLIPS,
JOSEPH A. FLEET.