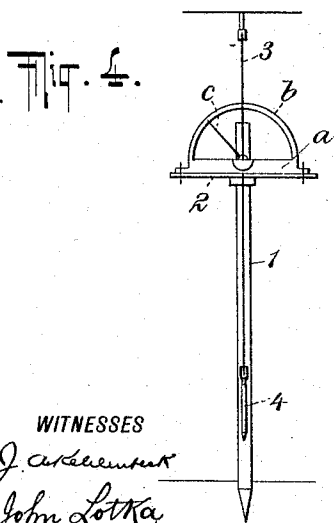
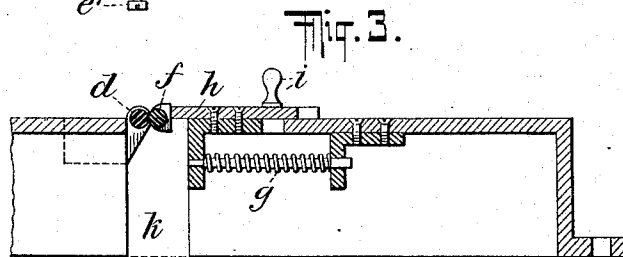
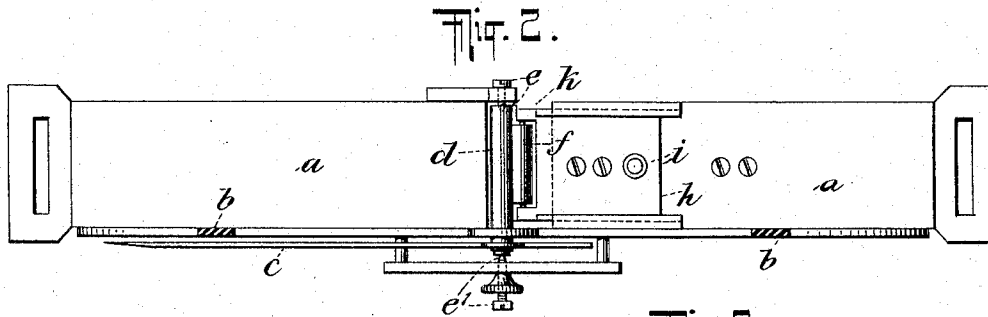
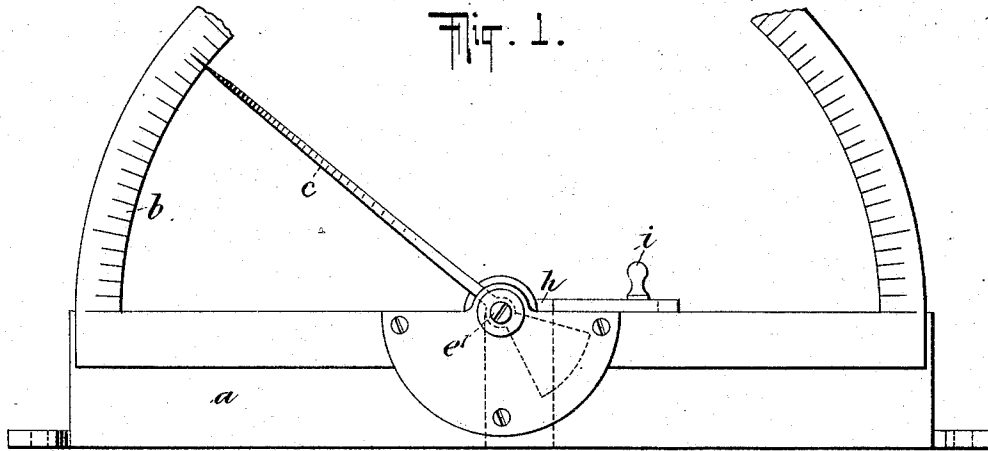


W. FENTZLOFF.
DEFLECTOMETER.
APPLICATION FILED MAY 25, 1909.

1,015,305.

Patented Jan. 23, 1912.



WITNESSES

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DEFLECTOMETER.

1,015,305.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed May 25, 1909. Serial No. 498,335.

To all whom it may concern:

Be it known that I, WILHELM FENTZLOFF, subject of the German Emperor, residing at 25 Schneckenhofstrasse, Frankfort-on-the-Main, in the Empire of Germany, manufacturer, have invented certain new and useful Improvements in Deflectometers, of which the following is a specification.

This invention relates to an improvement in the so-called deflectometers, that is to say apparatus for measuring linear movements by means of a member passing between a friction roller carrying the pointer or index and a pressure piece.

The invention has for its object to correct the insufficient exactness of the ordinary apparatus of this kind, so that the slightest deflections and linear movements can be read off with the greatest exactness rapidly and with certainty.

An example of construction of the invention is represented in the accompanying drawings, in which:—

Figure 1 is a front view with the scale partly broken away; Fig. 2, a plan view; and Fig. 3, a partial section; Fig. 4 shows an example of how the apparatus can be applied.

The apparatus consists of a hollow rectangular frame *a* with a semi-circular scale *b*, in front of which a traveling pointer *c* is provided. This is counterbalanced and mounted on the friction roller *d* which is pivoted between points *e*, *e'*, of which *e'* is adjustable. The pressure piece consists of a roller *f* arranged parallel with the friction roller, and mounted on a slide *h* upon which a helical spring *g* acts and which moves in a straight line. This slide is provided with a handle *i* by which it may be drawn back against the pressure of the spring *g* so far that the member which transmits the movement and is in the form of a wire, band, or the like, can be passed between the friction and the pressure rollers. For the same object the rear wall of the frame *a* has a slot *k* at the place in question. The pressure roller *f* is guided in a straight line in order to cause it to approach the friction roller *d* in an exactly linear direction, so that a uniform pressure is exerted on the transmitting member and causes a uniform movement of the friction roller. The counterbalanced pointer *c* acts on the slightest movement of the friction roller *d* and remains stationary in any position.

The apparatus described is especially intended for measuring deflections, more particularly elastic deflections of iron and concrete constructions in building lofty structures and bridges. It may for this purpose be erected in various ways and acts equally reliably in any position. One method of erection is shown as an example in Fig. 4. In this, 1 indicates a tubular pillar or upright adapted to be driven into the ground, having an attachment plate 2 adapted to be secured or firmly clamped at a suitable height, to which plate the apparatus is screwed.

For the purpose of more conveniently fixing up the apparatus, transverse slots are provided in the frame of the apparatus and longitudinal slots in the fastening plate for the screws. The upper end of the transmitting member, in the form of a band 3, is connected with the object which makes the movement to be measured. For the purpose of drawing the transmitting member taut, its free end is loaded with a weight 4.

In order to introduce the transmitting member between the friction and the pressure rollers, the latter is moved somewhat back by means of the slide *h*, and the transmitting member inserted between the two rollers. The pressure roller is then allowed to spring back again, and it then presses the transmitting member against the friction roller. If the transmitting member makes a linear movement, the friction roller *d* is correspondingly rotated, and the extent of this movement is indicated by the movement of the pointer *c* on the scale *b*.

In consequence of the counterbalancing of the pointer, the mounting of the friction roller on points and the linear pressure of the pressing roller, the greatest possible exactness in the measurement is obtained.

I declare that what I claim is:—

1. In a deflectometer the combination of a scale, a balanced pointer, a roller carrying said pointer, bearings for said roller, which confine it to rotary movement; a pressure roller in contact with the roller which carries the pointer; a slide carrying said pressure roller; a spring crowding said pressure roller against the roller which carries the pointer, and a slotted frame carrying said slide, and a handle for moving said slide, substantially as described.

2. In a deflectometer the combination of a scale, a balanced pointer, a roller carrying

said pointer, bearings for said roller, which
confine it to rotary movement; means for
adjusting the tension of said bearings; a
pressure roller in contact with the roller
5 which carries the pointer; a slide carrying
said pressure roller; a spring crowding said
pressure roller against the roller which car-
ries the pointer, and a slotted frame carry-

ing said slide, and a handle for moving said
slide, substantially as described. 10

In witness whereof I have hereunto set
my hand in presence of two witnesses.

WILHELM FENTZLOFF.

Witnesses:

JEAN GRUND,

CARL GRUND.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
