May 6, 1930. G. KAUFMAN 1,757,313

EXTENSION FOR INDICATORS

Filed May 27, 1927

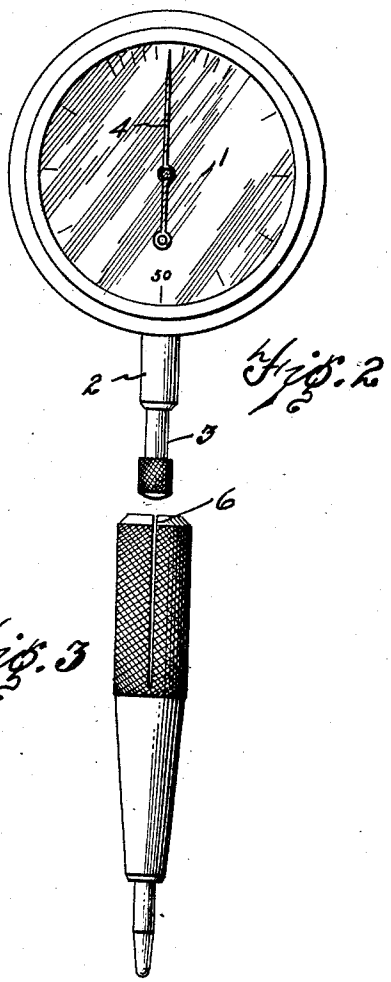


Fig. 2

Fig. 3

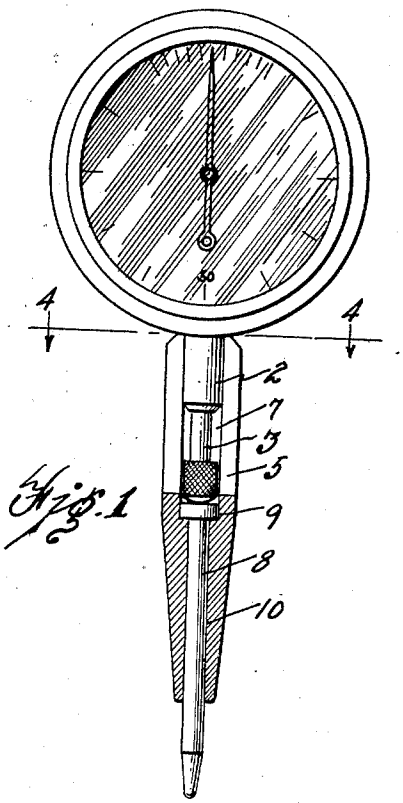


Fig. 1

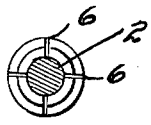


Fig. 4

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UNITED STATES PATENT OFFICE

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EXTENSION FOR INDICATORS

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My invention relates to indicators, and particularly to means for adapting indicators to divers uses by extending the operative mechanism to accommodate the same indicator to uses which it would not otherwise be capable of performing, and at the same time to arrange the extension member that it may be quickly attached and detached. Another object is to so construct the indicator extension that it will be durable and inexpensive to manufacture. Indicators have, of course, been in use for a number of years but have been so constructed that if a variety of work is to be trued, they operate in such narrow limits that several indicators are required. However, with my extension one indicator may be used on a variety of sizes of work, thus reducing the number of indicators required and also saving time in changing indicators.

I accomplish the foregoing object by the mechanism hereinafter described and shown in the accompanying drawings, in which:

Fig. 1 is an elevation of a type of indicator in common use with my extension member applied thereto and shown partly in section.

Fig. 2 is an elevation of the same indicator without my invention applied thereto.

Fig. 3 is a perspective of my extension member.

Fig. 4 is a transverse section on line 4—4 of Fig. 1.

In the accompanying drawings reference numerals are employed to indicate the several parts.

1 is the indicator dial. 2 is a hollow stem provided with a needle 3 which is reciprocal within the stem 2 and moves the pointer 4 when pressed upwardly and is returned to its normal position by a spring not shown. 5 is the body of my extension member, the upper end of which is provided with split sections 6, preferably having four splits so the upper end may be sprung outwardly and form a frictional engagement with the stem 2. This extension has a central bore 7 of slightly less diameter than the diameter of the stem 2 and adapted to be held to the stem by frictional engagement. A needle 8 is provided with a head 9 which seats in the bottom of the bore 7 and contacts with the needle 3 when the latter is in its normal position. Another bore 10 is provided in the extension member 5 and adapted to receive the needle 8.

The operation of the device will be readily understood. When work is to be performed on an object which will not contact with the needle 3 because the needle is too short to reach the object to be operated upon, the extension member is then inserted over the stem 2 and the needle 3 is, for operative purposes, extended to the bottom of the needle 8 and any movement of the needle 8 by contacting with the work will be transmitted to the needle 3 and as the needle 8 is pressed upward, the needle 3 will likewise be pressed upward and the needles will be returned to their normal positions by the same spring heretofore mentioned but not shown because the construction of such indicators is well understood.

My extension member may be made in various lengths and the operator will employ the one most suitable to fit the work to be operated upon.

Having fully described my invention and its mode of operation, what I claim is:

1. In combination with an indicator having a stem and needle, an extension therefor adapted for frictional engagement with the stem of the indicator, a bore in the extension member adapted to receive the stem and the needle of the indicator, an extension needle reciprocable in said bore and means to limit the downward movement of said extension needle.

2. In a combination with an indicator having a stem and needle, an extension member therefor having a split head bored to receive the stem and needle of the indicator, a reciprocal extension needle loosely mounted in said extension member and adapted upon reciprocation to move the needle of the indicator.

Signed at the city of Detroit, county of Wayne, State of Michigan, this 25th day of April, 1927.

GODFREY KAUFMAN.