

No. 693,744.

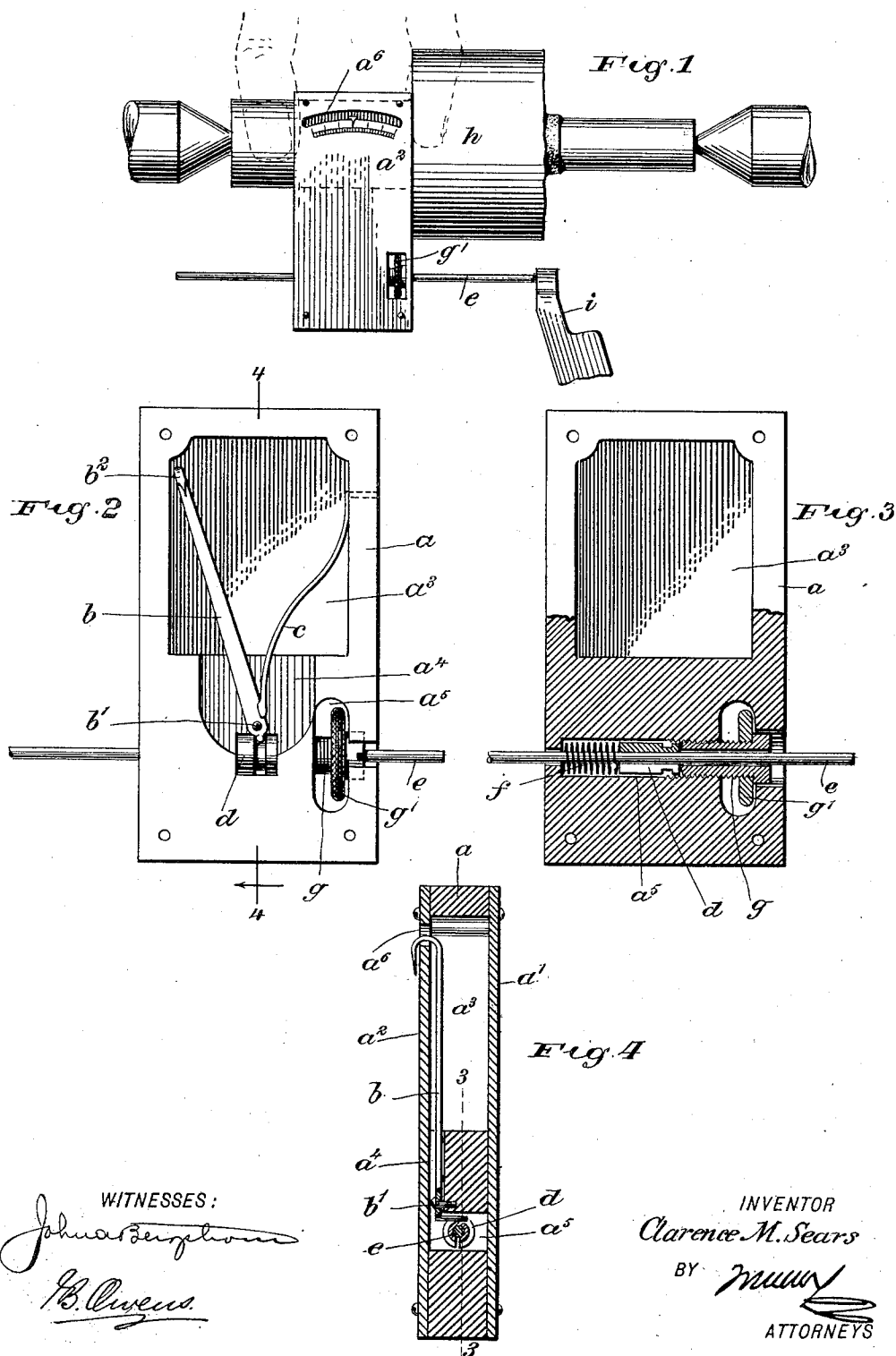
Patented Feb. 18, 1902.

C. M. SEARS.

GAGE.

(Application filed Oct. 15, 1901.)

(No Model.)



WITNESSES:
John A. Thompson
B. Owens

INVENTOR
Clarence M. Sears
BY *M. W. Munn*
ATTORNEYS

UNITED STATES PATENT OFFICE.

CLARENCE M. SEARS, OF BOTSFORD, CONNECTICUT.

GAGE.

SPECIFICATION forming part of Letters Patent No. 693,744, dated February 18, 1902.

Application filed October 15, 1901. Serial No. 78,731. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE M. SEARS, a citizen of the United States, and a resident of Botsford, in the county of Fairfield and State of Connecticut, have invented a new and Improved Gage, of which the following is a full, clear, and exact description.

This invention relates to a gage useful for all purposes for which such instruments are generally employed. It is particularly useful when working with machine-tools, and by its means measurements may be accurately gaged, a tool located with respect to the part to be operated upon by it, and any variation in one direction or the other may be detected.

This specification is a specific description of one form of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a view showing an example of the use of the instrument. Fig. 2 is a face view of the device, showing interior parts. Fig. 3 is a section on the line 3 3 of Fig. 4, and Fig. 4 is a section on the line 4 4 of Fig. 2.

The instrument has a frame a , covered at its faces with plates a' and a'' . The frame is formed with an open space a^3 in one end portion, said space communicating with a cavity a^4 , in turn communicating with a transverse passage a^5 in the other end portion of the frame, which passage runs entirely through the frame from edge to edge and being of varying diameter to accommodate various parts, as will appear hereinafter.

b indicates the gage-needle, which is in the form of a lever fulcrumed at the point b' in the cavity a^4 and having its long arm extended across the space a^3 , the extremity of which arm is return-bent and extended through an arc-shaped slot a^6 in the face-plate a'' , so as to play therein. The face-plate a'' is provided with a graduated scale along said slot whereon the indicator or gage-needle reads.

c is a spring for pressing the needle b to the left. (See Fig. 2.)

In the middle part of the passage a^5 is fitted to move freely a split collar d , which acts as a clutch fastened frictionally to a rod e , which runs completely through the passage a^5 and

beyond the edges of the indicator. The engagement of the clutch-collar d with the rod e is such as to hold these parts together under ordinary pressure, yet by slightly forcing the rod it may be driven out of the collar.

f represents a spring in the passage a^5 and serving to push the clutch-collar to the right, Fig. 3. The clutch-collar d has an annular groove in its outer surface, wherein is engaged the bent short end of the indicator b , so that axial movement of the clutch will cause a corresponding swinging movement of the indicator.

g indicates a hollow screw which is threaded in the passage a^5 and carries a fast finger-wheel g' , projecting through an enlarged part of the passage and also through openings in the face-plates a' and a'' , so that the parts g and g' may be engaged by the finger of the operator, so as to turn the screw g and advance it to or retract it from the collar d , thus to move the collar against the spring f or allow it to be pushed to the right, Fig. 3, by said spring. It will be observed that owing to the arrangement shown the springs c and f act in the same direction.

In using the invention the indicator b is first adjusted to the center of the slot a^6 by manipulation of the screw g . Then the rod e is adjusted so that its right-hand part, (see Figs. 2 and 3,) projecting beyond the frame a , represents the distance to be gaged. To do this, the rod should be moved from left to right until its right-hand end projects as far as desired. Then the screw g should be manipulated, so as to move the indicator b back to the left-hand end of the slot a^6 . The indicator in so moving further projects to the rightward the rod e . Now it will be clear that when the rod e is pushed back to the left, it will move the indicator to the right, and owing to the arrangement of the parts when the indicator is in the center of the slot a^6 the rod will be just at the first adjustment. Should the rod be moved from this adjustment one way or the other, the indicator will move from one side to the other of the center of the slot a^6 , and thus the variation in measurement may be detected. The rod e may be drawn entirely out of the instrument, if desired. Fig. 1 shows one of the many uses to which the instrument may be put. In this

view *h* indicates the work on a machine-tool—for instance, a lathe—and *i* indicates the tool proper. Now it will be seen that by trying the gage with the rod *e* on the tool *i* any variation one way or the other of the tool from its proper position will be at once visible.

It should be understood that my invention is not limited to the use shown, but may be used in a great number of ways, as will suggest themselves to all skilled mechanics.

Various changes in the form, proportions, and minor details of my invention may be resorted to without departing from the spirit and scope of my invention. Hence I consider myself entitled to all such variations as may lie within the scope of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a frame, an indicator, a clutch connected thereto, a member on which the clutch is slidably mounted, and means for adjusting the clutch on the said member.
2. The combination of a frame, an indica-

tor, a clutch connected thereto, a member slidably engaged with the clutch, a spring pushing the clutch one way, and means for adjusting the clutch against the spring.

3. The combination of a frame, an indicator, a clutch in the form of a yielding collar connected with the indicator, a gage-rod fitting friction-tight and removably in the clutch and means for adjusting the clutch on the gage-rod.

4. The combination of a frame, an indicator, a clutch connected thereto, a rod engaged with the clutch, a spring pushing the clutch in one direction, and a hollow screw loosely receiving the rod and engaging the clutch to force it against the spring, said screw working in the frame.

In testimony whereof have I signed my name to this specification in the presence of two subscribing witnesses.

CLARENCE M. SEARS.

Witnesses:

H. C. FAIRCHILD,
F. E. BANKS.