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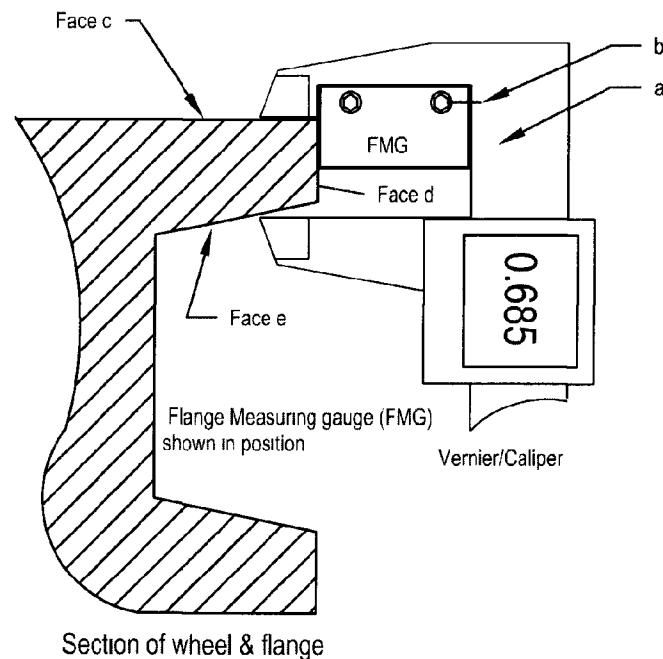
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(54) Titre : JAUGE DE MESURE DE BRIDE

(54) Title: FLANGE MEASURING GAUGE



(57) Abrégé/Abstract:

A machined block used in conjunction with a standard Vernier and or caliper so that comparative readings can be read for wear on wheel flanges.

FLANGE MEASURING GAUGE

ABSTRACT

A machined block used in conjunction with a standard Vernier and or caliper so that comparative readings can be read for wear on wheel flanges.

BACKGROUND OF THE INVENTION

This invention pertains generally to crane & railroad wheel flange measurements, but more specifically to measurements of overhead & portal crane wheel flanges running on steel rails.

By the use of the unique block one is able to obtain a measurement of the flange width from the wheel faces c and rim d, which are constant and not subject to wear, to the wearing face e, reference Drg. 11400-05 Sheets 1 & 2, dated 7/11/19.

Such measurements can be repeated with accuracy, as the measuring point will always be at a consistent point at face e, due to the block providing a consistent depth measurement from face d.

One of the major problems in the crane industry is flange wheel wear is skewing (also known as crabbing) of the whole crane or trolley structure, which occurs either with a mechanical, electrical drive problem or structural misalignment, the cause of which can be difficult to determine, particularly with cranes having spans over 50ft.

Flange wheel wear is that experienced by such misalignment causing face e Drg. 11400-05 Sheets 1 & 2, dated 7/11/19 to rub against the edge of the steel rail thus wearing the flange to a degree causing mechanical failure of the flange and subsequent derailment of the crane wheel.

This invention provides benefits and advantages over known measuring methods as follows.

1. Measurements can be taken easily, the tool complete with block offering a small profile, which is important due to the limited access provided to the crane wheel flanges by safety guards, which, due to their position, size & weight are difficult to remove & replace.
2. Some forewarning of mechanical failure of the flange can be determined, and in this case the 0.375/.379" dimension shown on Drg. 11400-05 Sheet 1, dated 7/11/19 is the minimum safe flange width (thickness) that should be allowed where the original flange width measured at 1" to 1.5"
3. Comparative measurements can be taken of the wheel flanges which are then recorded. By examining these measurements and determining the amount of wear the direction and amount of the skewing can be determined and corrective action taken

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FLANGE MEASURING GAUGE (Continued)

DESCRIPTION OF PRIOR ART

It is known in the prior art that a Patent # CA 1314393 was issued to Mian, Zahid Farooq for a electronic wheel wear gauge, but it is apparent that this device is electrical in nature and does not provide for a consistent measurement of the flange width related to the point of measurement from the diameter of the flange face.

SUMMARY OF THE INVENTION

This invention pertains to the use of a block machined in such a way as to provide a gauge for use with a standard caliper/Vernier for measuring wheel flanges. Flange wheel wear is individual to each wheel and can be of a angular or radial nature. The main features of the invention is it simplicity and that it provides a set point for measuring wheel flange thickness as the measuring point depth is held consistent by the use of the block.

BRIEF DESCRIPTION OF THE DRAWING, 11400-05 Sheets 1 & 2, dated 7/11/19

- Fig. 1 Plan view of Vernier fitted with Block and in measuring position
- Fig. 2 Plan View measuring points with 0.375 measurement
- Fig. 3 Flange measuring block
- Fig. 4 Invention assembled to Vernier/caliper with lower jaw closed to bottom face of block.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the Drawing 11400-05 Sheets 1 & 2, dated 7/11/19 and in particular, with reference to Figs. 1 & 3 the block is of steel, slotted to dimensions shown.

Also included in the Bill of Material are two 1/8" x 1/8" Alan headed cap screws which fasten the block to the upper jaw of the Vernier/caliper.

The Vernier/caliper, shown Figs 1& 4, is first calibrated by closing the jaws together and setting the measurement to zero.

The lower jaw is then opened, and the upper jaw and body inserted in the slot provided in the block.

FLANGE MEASURING GAUGE (Continued)

DESCRIPTION OF THE PREFERRED EMBODIMENT (Continued)

The jaws are then closed again but this time against the inserted block, as shown, in Fig.4., and a reading taken, which should be at 0.375/.379", this denotes the unit is properly calibrated.

Also a check should be made of the measurement from the tip of the Vernier/caliper jaw to the front face of the block, this should be at 0.375/.379" as shown, Fig. 2, this denotes that the block is properly inserted over the body of the Vernier/caliper.

The invention is now ready to measure wheel flanges as shown Fig.4

Although the invention has been described in connection with a preferred embodiment, it should be understood that various modifications, additions and alterations may be made to the invention by one skilled in the art without departing from the spirit and scope of the invention as defined in the appended claims

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS

1. Repeatability of measurements from two constant faces c & d, against one variable, face e. reference Fig. 1, Drg. 11400-05 Sheets 1 & 2, dated 7/11/19 for double or single flanged wheels
2. Ease of use
3. Minimum profile, allowing use in confined space
4. Reliability
5. Minimum working parts

DRAWING 11400-05 Sheets 1 & 2, dated 7/11/ 2019

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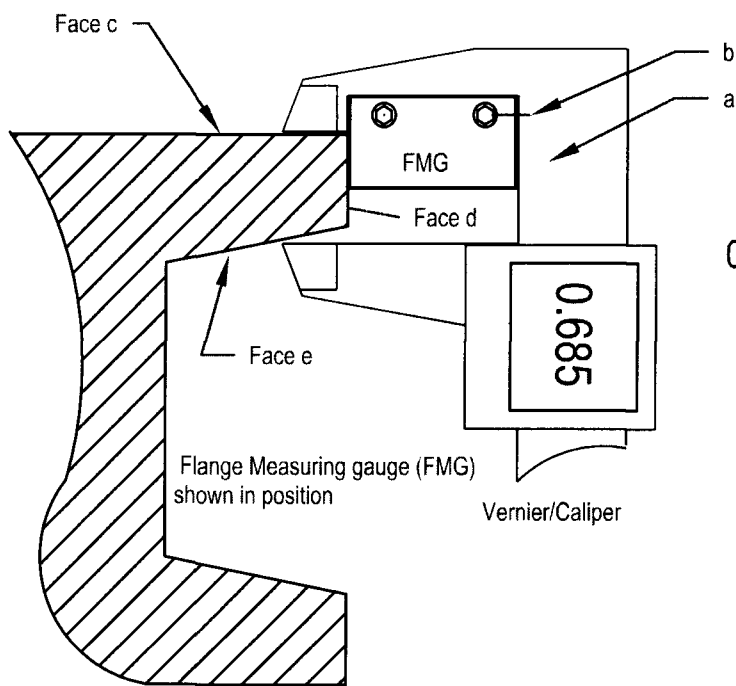
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DRAWING 11400-05 Sheets 1 & 2, dated 7/11/ 2019



Section of wheel & flange

Fig. 1

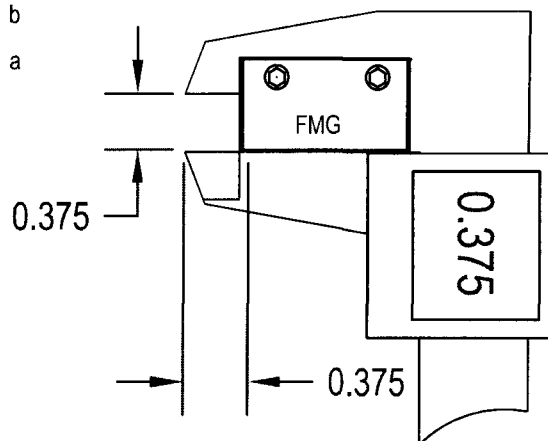


Fig. 2

METHOD OF OPERATION

First close vernier jaws and set zero

Open vernier jaws, fit FMG to top vernier jaw, using slot provided.

Close vernier jaws until lower jaw is against bottom of block. Reading should be at 0.375/.379"

Tighten up Alan screws

Proceed to measure flanges as shown

Hold FMG parallel & against front edge of flange face a.

Record readings.

All dimensions in decimal inches

Work with Sheet 2

Description Flange measuring gauge		
By F.Kemp	Date 7/11/19	Drg. 11400-05 Sheet 1 of 2

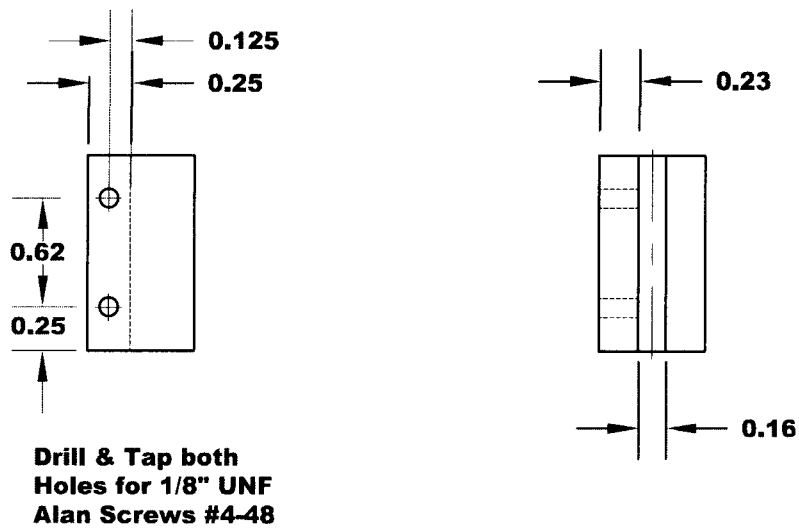


Fig. 3

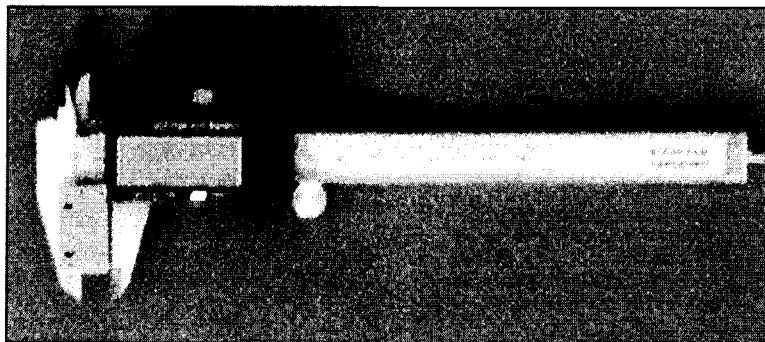


Fig. 4

All dimensions in decimal inches

b	2		1/8" Dia. UNF Alan Head Socket Screw x 1/8" long.
a	1	MS	5/8" Square Bar x 1.13" long.
Item	Qty.	Mtl.	Item reference.
Description	Flange Measuring Block. Work with Sheet 1.		
By. F. Kemp	Date. 7/11/2019	Drawing #.	11400 - 05 Sheet 2 of 2

