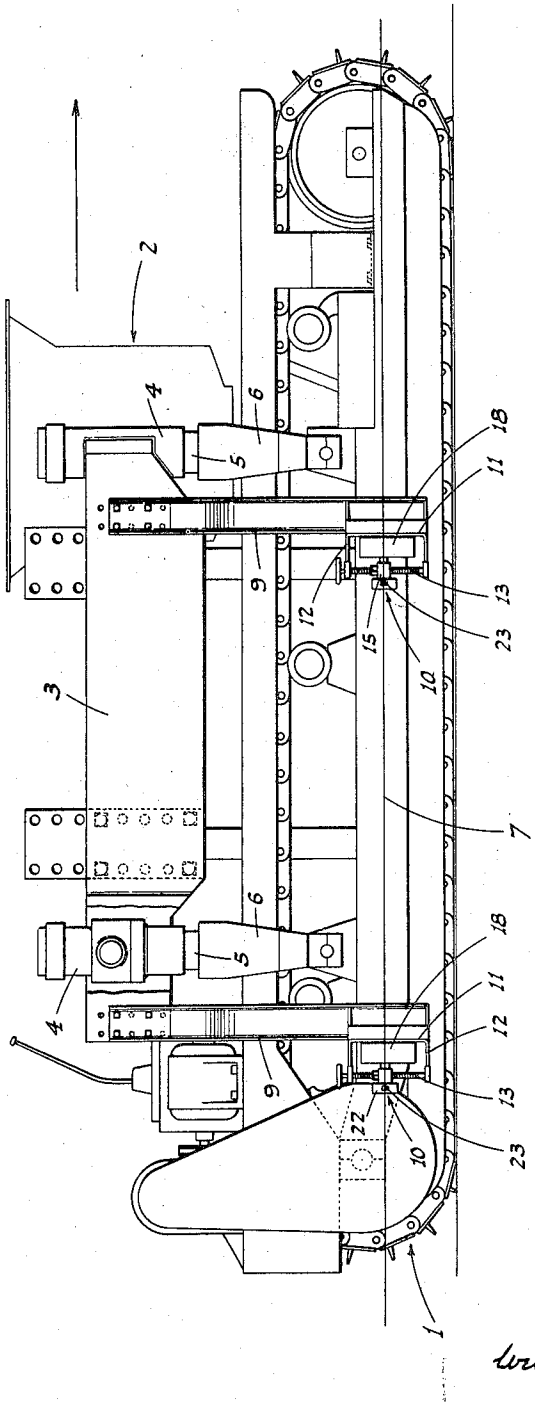
Jan. 13, 1959 R. M. GUNTERT ET AL 2,868,909

FEELER UNIT FOR CONTROL OF TRAVELING MACHINES

Original Filed Nov. 5, 1956 2 Sheets-Sheet 1

Fig. 1



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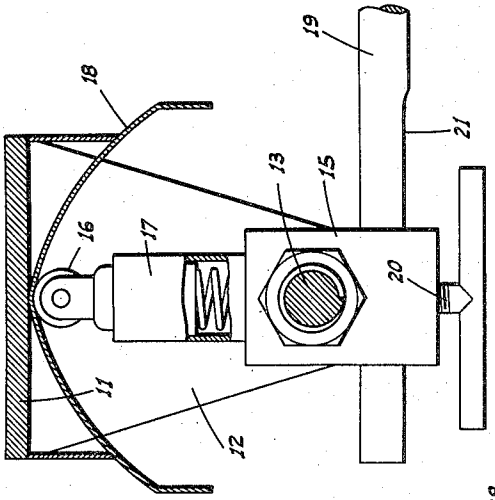


Fig. 3

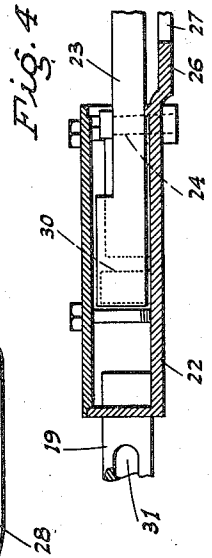
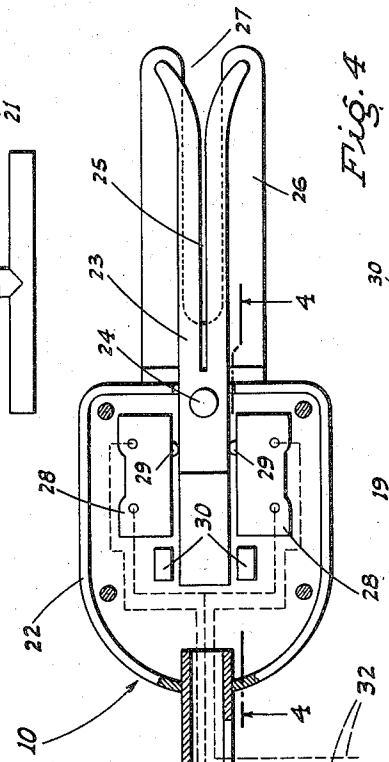


Fig. 4



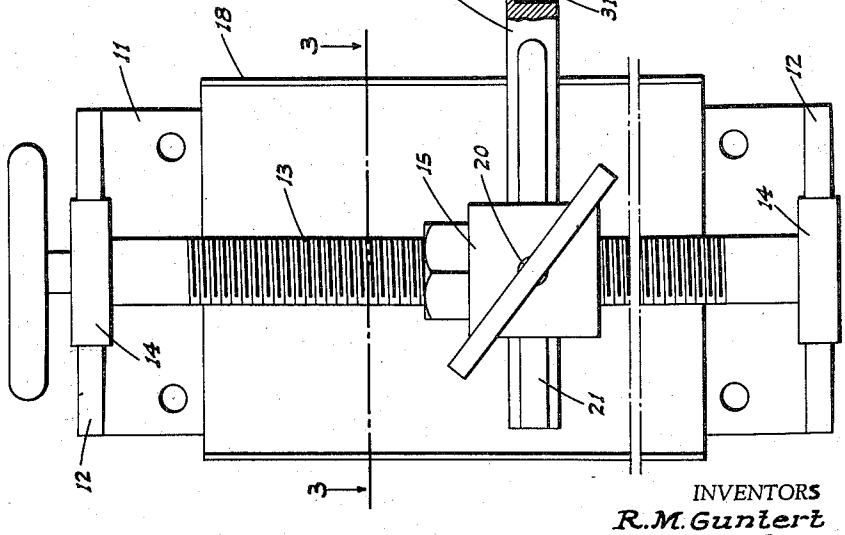


Fig. 2

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FEELER UNIT FOR CONTROL OF TRAVELING MACHINES

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Original application November 5, 1956, Serial No. 620,498. Divided and this application July 7, 1958, Serial No. 747,048

5 Claims. (Cl. 200—61.44)

This invention relates to a control mechanism for a concrete slab laying machine, and particularly to a grade-wire feeler unit included in such control mechanism; this application being a division of copending United States patent application, Serial No. 620,498, filed November 5, 1956.

The principal object of the present invention is to provide an improved and sturdier type of feeler unit for the purpose over what has been previously used and such as is shown, for instance, in copending United States patent application, Serial No. 540,808, filed October 17, 1955, now Patent No. 2,844,882.

Another object of the invention is to provide a practical, reliable, and durable feeler unit for control of traveling machines, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a side elevation of the slab laying machine, showing the improved feeler units mounted thereon.

Fig. 2 is an enlarged rear end elevation, partly broken away and in section, of one of the feeler units.

Fig. 3 is a sectional plan on line 3—3 of Fig. 2.

Fig. 4 is a fragmentary longitudinal section taken on line 4—4 of Fig. 2.

Referring now more particularly to the drawings, and to the characters of reference marked thereon, the machine on which the feeler units are mounted comprises essentially transversely spaced endless track units **1** which support the concrete laying structure **2** therebetween.

Extending lengthwise of and directly above each track unit **1** is a bolster **3** rigid with the structure; such bolster and track unit together forming a supporting truck for the machine. Hydraulic cylinders **4** are mounted on the bolster adjacent its ends; the plungers **5** of the cylinders being rigidly connected to yokes **6** which straddle and are connected to the track unit **1**.

Set accurately to grade on each side of the machine and laterally out from the adjacent track unit is a grade wire **7**, supported at intervals from the ground by stake and bracket units **8**.

The feeler units for each grade wire, and which comprise this invention, are mounted on the lower end of arms **9** rigidly secured to and depending from the bolster **3** in a transverse plane between the track unit **1** and the grade wire **7**.

Each such feeler unit, indicated generally at **10**, comprises a rigid U-shaped bracket **11** facing rearwardly and secured against an adjacent arm **9**. The bracket includes top and bottom flanges **12** between which a vertical hand-controlled screw shaft **13** extends; the flanges **12** being provided with bosses **14** in which the shaft is journaled.

A block **15** is threaded on the shaft, the block being yieldably held against rotation on the shaft by means of

a spring-pressed roller **16** mounted for sliding movement axially of the shaft **13** in a boss **17** rigid with the block **15**. This roller **16** engages a vertically elongated track plate **18** which is curved horizontally and eccentric to shaft **13** in such a manner that the roller **16** becomes increasingly loaded as the unit swings to one side or the other from a neutral position. The eccentricity of the plate **18** relative to shaft **13** is such that the spring-urged roller **16** will always return to a central position after pressure acting to rotate the block is relieved.

A horizontal shank **19** is slidable through the block in front of the shaft **13**; said shank being held in any desired position relative to the block by means of a hand clamping screw **20**. In order that the shank **19**, which is preferably made of round stock, will not turn in the block **15**, said shank is flattened, as shown at **21**, where engaged by the clamping screw **20**. The shank at its outer end is rigidly secured to a housing **22**. A probe in the form of an elongated finger **23**, positioned in longitudinal alinement with the shank, is pivoted intermediate its ends in the housing, as at **24**, on an axis parallel to the grade wire; the portion of the finger outwardly of the housing being longitudinally horizontally slotted from its outer end, as at **25**, so as to form a prong to receive the grade wire **7** in free running relation.

As previously stated, the grade wire **7** is supported at intervals by stake and bracket units **8**, and the yieldable swinging mounting of the feeler unit on shaft **13**, as above described, enables the probe finger **23** to yield and move past the various bracket units **8** in turn. In order to prevent actual contact of the probe finger with any bracket, a rigid guard or strike plate **26** is mounted on the housing **22** and projects in front of the finger **23** for the length thereof and adjacent the same. This striker is formed with a longitudinal slot, as shown at **27**, this slot being considerably wider than slot **25** so as not to contact the wire **7** with any ordinary vertical movements of the feeler unit relative to said wire. The striker when engaging a bracket **8** upon advance of the machine will thus cause the feeler unit to swing clear of the bracket without possible damage being done to the finger **23**.

Mounted in the housing back of the pivot **24** on opposite sides of—or above and below—the probe finger, are sensitive limit switches **28** of conventional design, and each of which includes a press button **29** which engages the adjacent face of the finger **23** even when said finger is in a neutral position and the switch is open.

Stops **30** are fixed in the housing beyond the switches for engagement with, but normally clear of, the probe finger so as to limit the swinging movement of said finger and prevent possible damage being done to the switches by such movement. The housing end of the shank **19** is drilled for some distance to provide a passage **31**, open to the periphery of the shank back of the housing, as shown in Fig. 2, for the wiring, indicated at **32**, leading from the switches **28** to the apparatus which controls the feeding to, or discharge of fluid from, the corresponding hydraulic cylinder or ram, as shown in the aforementioned copending application, Serial No. 620,498.

From the foregoing description it will be readily seen that there has been produced such a device as will substantially fulfill the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention the following is claimed as new and useful, and upon which Letters Patent are desired:

1. A feeler unit for engagement with a grade wire ar-

ranged to control the actuation of the operational-movement control mechanism of a traveling machine and which mechanism includes actuating circuits having switches therein, said unit comprising a mounting member arranged to be mounted in a rigid position on the machine, a shank projecting laterally out from the member, a housing mounted at its inner end on the outer end of the shank, a probe finger projecting from within the housing and having a longitudinal slot outwardly of the housing to extend across and receive the grade wire with a running fit, means pivoting the finger intermediate its ends in the housing, and means mounting said switches in the housing on opposite sides of the finger inwardly of the pivot thereof, said switches each including an actuating element normally engaging the adjacent face of the finger.

2. A feeler unit, as in claim 1, in which the finger extends in alinement with the shank.

3. A feeler unit, as in claim 1, with a block turnably and adjustably mounted on the mounting member, the shank being mounted in the block to one side of the member and being non-turnably slidable therethrough, and means to clamp the shank in any position of adjustment relative to the block.

4. A feeler unit, as in claim 1, with a rigid striker plate projecting laterally out from the housing adjacent and in front of the finger and extending substantially the full length of the projecting portion thereof and in the horizontal plane of said finger, and arranged to clear the grade wire.

5. A feeler unit, as in claim 1, with a rigid striker plate projecting laterally out from the housing adjacent and in front of the finger and extending substantially the full length of the projecting portion thereof and in the horizontal plane of said finger; said striker plate having a longitudinal slot parallel and symmetrically disposed relative to the finger slot but materially wider than said finger slot.

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