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(54) A trip unit for an hydraulic/magnetic circuit breaker

(57) An hydraulic/magnetic trip unit (10) for a circuit breaker (18) is modular and removable from the circuit breaker. The invention also relates to a circuit breaker including a modular and removable hydraulic/magnetic trip unit.

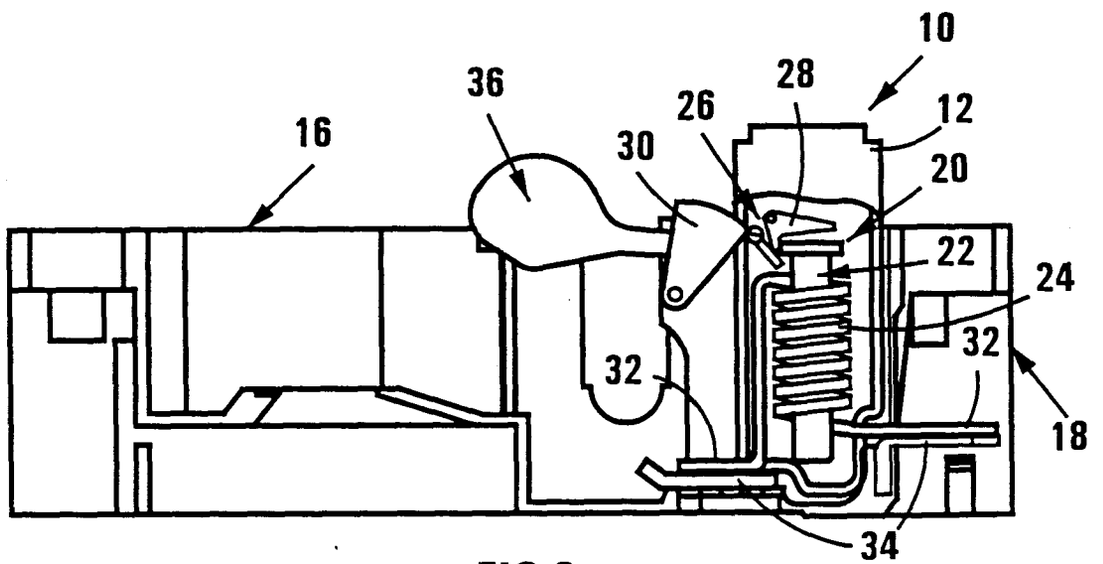

FIG 3

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Description

[0001] **THIS INVENTION** relates to a circuit breaker. More particularly, the invention relates to a trip unit for an hydraulic/magnetic circuit breaker.

[0002] According to a first aspect of the invention, there is provided an hydraulic/magnetic trip unit for a circuit breaker, the trip unit being modular and removable from the circuit breaker.

[0003] The trip unit may include a housing in which an hydraulic/magnetic coil and tube assembly is housed, with the housing being dimensioned to be receivable in a recess in a base of the circuit breaker.

[0004] The trip unit may further include a tripping mechanism which is engageable, in use, with an operating mechanism of the circuit breaker for effecting tripping of the circuit breaker.

[0005] The trip unit may also include an electrical connecting means for connecting the coil and tube assembly of the unit to terminals of the circuit breaker. The electrical connecting means may be in the form of lugs which protrude from the housing and which, in use, engage with the terminals of the circuit breaker which is located in the base.

[0006] According to a second aspect of the invention, there is provided a circuit breaker which includes a modular and removable hydraulic/magnetic trip unit as described above, so that its ratings are changeable by inserting therein a unit with an appropriate rating.

[0007] The invention is now described by way of an example, with reference to the accompanying drawings in which:

Figure 1 shows a schematic sectional side view of a trip unit, in accordance with the invention, for a circuit breaker;

Figure 2 shows, on a reduced scale, a base for a circuit breaker in which the trip unit of Figure 1 is receivable; and

Figure 3 shows, on a further reduced scale, a base of the circuit breaker with the trip unit mounted therein.

[0008] In Figure 1, reference numeral 10 generally designates a trip unit, in accordance with the invention for a circuit breaker. The trip unit 10 is an hydraulic/magnetic trip unit and is modular and removable in nature. Thus, the trip unit 10 comprises a housing 12 which is removably receivable in a recess 14 (Figure 2) of a base 16 of a circuit breaker, illustrated schematically at 18.

[0009] The trip unit 10 comprises an hydraulic/magnetic coil and tube assembly 20 arranged in the housing 12 of the trip unit 10. The assembly 20 comprises a tube 22 arranged within, and surrounded by, a coil 24.

[0010] The trip unit 10 also includes a tripping mechanism 26 having a tripping lever 28 which is attracted by the tube 20 for effecting tripping of the circuit breaker, in use. The tripping lever 28 engages a tripping arm 30 arranged externally of the housing 12 of the trip unit 10.

[0011] The coil 24 of the assembly 22 has electrical connecting means in the form of lugs 32 connected thereto. The lugs 32 protrude from the housing 12.

[0012] Electrical connecting means in the form of electrical terminals 34 are arranged in the recess 14 of the base 16 of the circuit breaker 18. Thus, in use, the trip unit 10 is mounted in the recess 14 of the housing 16 so that the lugs 32 electrically engage and are connected to the terminals 34. The trip arm 30 of the tripping mechanism 26 of the trip unit 10 engages an operating mechanism in the form of a cradle 36 mounted pivotally on the base 16 for effecting tripping of the circuit breaker 18, in use.

[0013] Hence, it is an advantage of the invention that an hydraulic/magnetic circuit breaker 18 is provided which has a removable and modular trip unit 10. In so doing, the rating of the circuit breaker 18 can easily and quickly be changed by insertion of the appropriate trip unit 10.

Claims

1. An hydraulic/magnetic trip unit for a circuit breaker, the trip unit being modular and removable from the circuit breaker.

2. The trip unit as claimed in Claim 1, which includes a housing in which an hydraulic/magnetic coil and tube assembly is housed, with the housing being dimensioned to be receivable in a recess in a base of the circuit breaker.

3. The trip unit as claimed in Claim 1 or Claim 2, which includes a tripping mechanism which is engageable, in use, with an operating mechanism of the circuit breaker for effecting tripping of the circuit breaker.

4. The trip unit as claimed in Claim 3, which includes an electrical connecting means for connecting the coil and tube assembly of the unit to terminals of the circuit breaker.

5. The trip unit as claimed in Claim 4, in which the electrical connecting means is in the form of lugs which protrude from the housing and which, in use, engage with the terminals of the circuit breaker which is located in the base.

6. A circuit breaker which includes a modular and removable hydraulic/magnetic trip unit as claimed in any one of the preceding claims, so that its ratings are changeable by inserting therein a unit with an appropriate rating.

7. An hydraulic/magnetic trip unit for a circuit breaker,

substantially as herein described with reference to the accompanying drawings.

8. A circuit breaker, substantially as herein described with reference to the accompanying drawings.

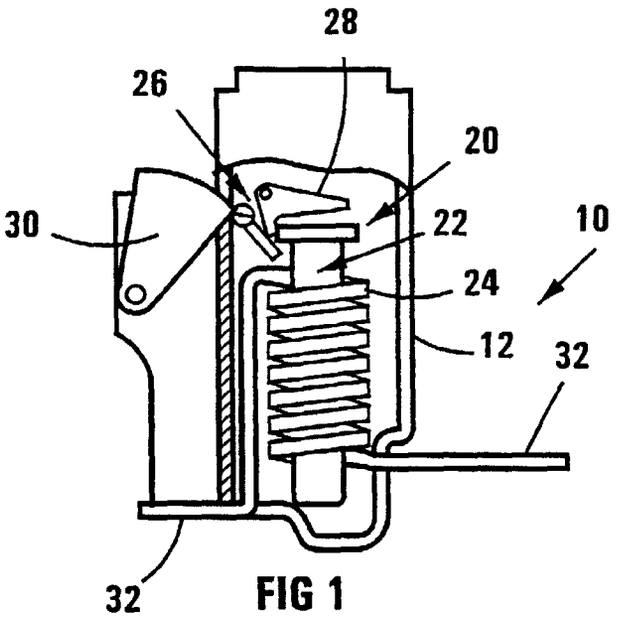

FIG 1

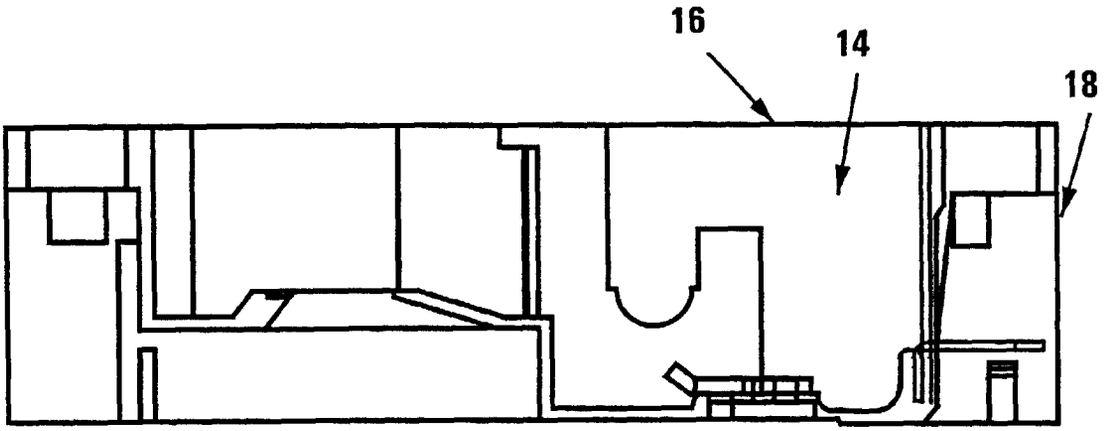

FIG 2

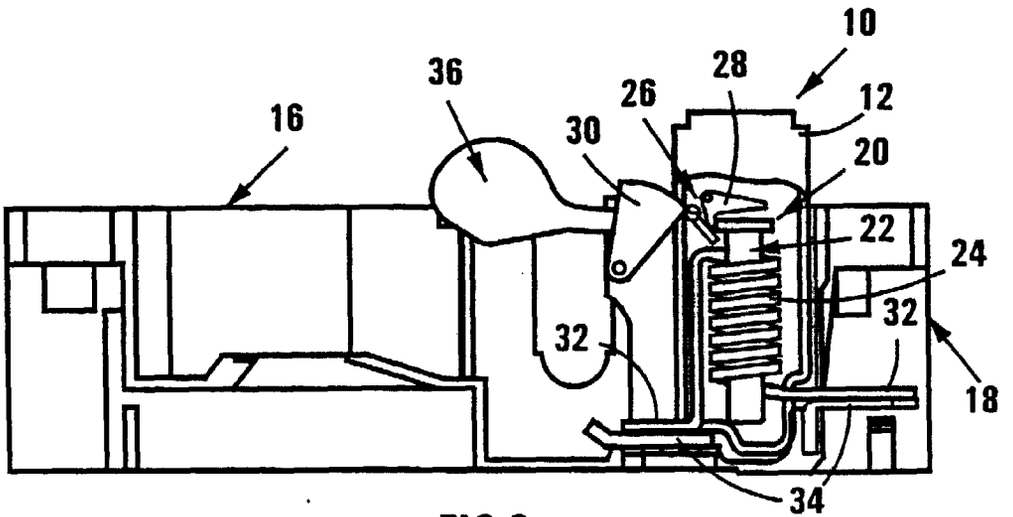

FIG 3