

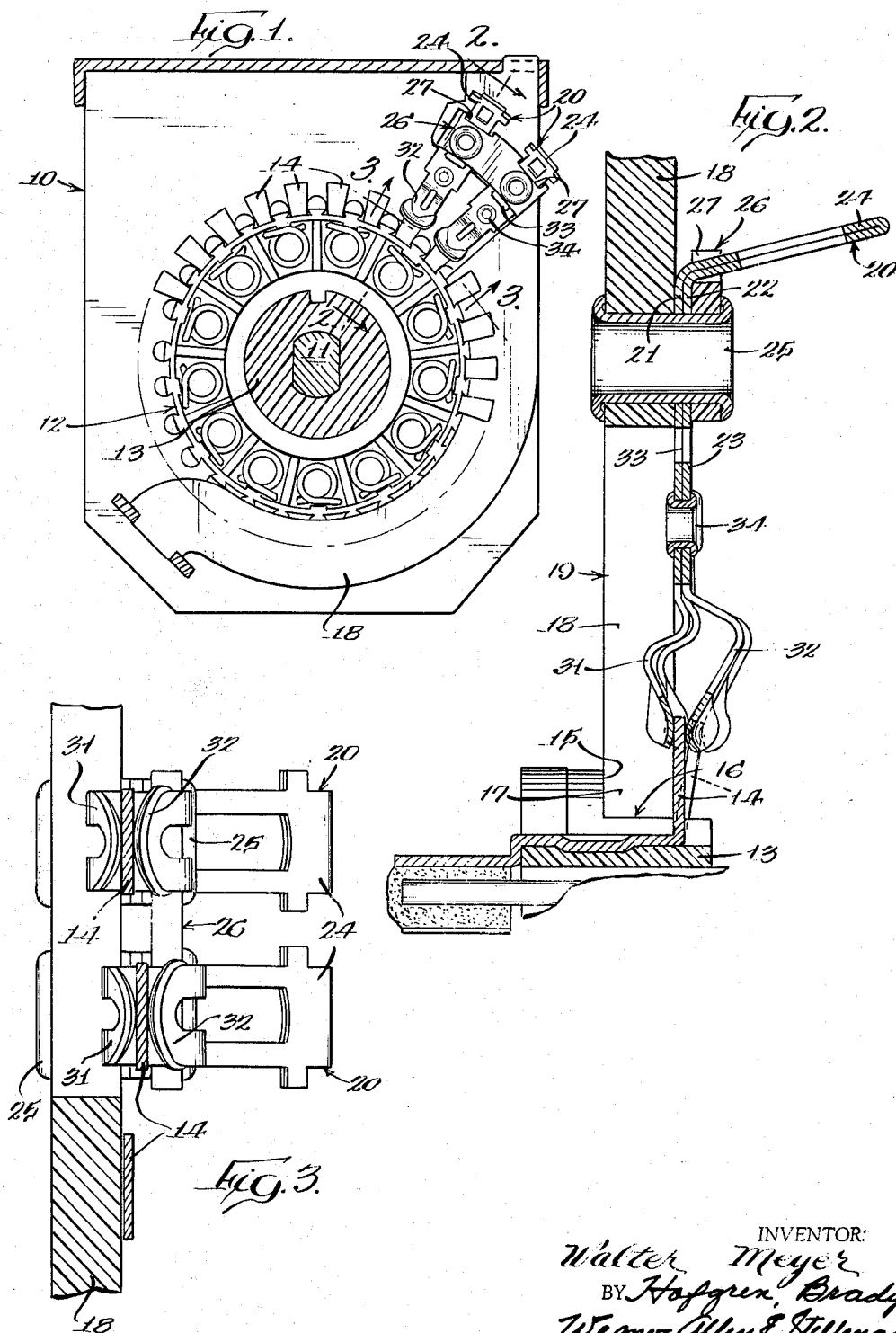
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W. MEYER

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SELF-ALIGNING CONTACT ASSEMBLY

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INVENTOR:
Walter Meyer
 BY *Hoffman, Brady,*
Wegner, Allen & Stillman
Attys

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SELF-ALIGNING CONTACT ASSEMBLY
Walter Meyer, McHenry, Ill., assignor to Oak
Manufacturing Co., a corporation of Delaware
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This invention relates to a contact assembly, and more particularly to such an assembly incorporating an improved contact and contact mounting.

The primary object of this invention is to provide a new and useful contact assembly.

Another object is provision of a new and useful mounting for electrical contacts.

Still another object is provision of a new and useful flexible contact which adjusts to misalignment of a cooperating contact.

A further object is provision of a new and improved contact assembly having contact carriers mounting contacts with cooperating contacting portions, the contacting portions of one of the carriers being movable in a plane into engagement with the other carrier contacting portions, and a first of the carriers having contacts with a flexible portion having a free end defining a respective contacting portion and providing for movement thereof transversely of the plane to compensate for misalignment with the contacting portions on the cooperating carrier.

Another object is the provision of a double jaw contact assembly having means securing the jaws together and further means mounting the assembly for movement to accommodate misalignment of a cooperating contact.

A still further object is provision of a new and improved contact assembly wherein fasteners mount a pair of contacts on a carrier, one fastener for each of the contacts, each fastener extending through the respective contact and into the carrier and a key which spans the contacts and holds the contacts in operative position. A related object is provision of such a contact assembly wherein each contact has a contacting portion flexibly supported to compensate for misalignment of a cooperating contact.

Other objects and advantages of the invention will become readily apparent from the following detailed description taken in connection with the accompanying drawings, in which:

FIGURE 1 is a front view of a preferred embodiment of the invention, with parts broken away for clearer illustration;

FIGURE 2 is a fragmentary, enlarged sectional view taken generally along the line 2—2 of FIGURE 1; and

FIGURE 3 is a fragmentary enlarged sectional view taken generally along the line 3—3 of FIGURE 1.

While an illustrative embodiment of the invention is shown in the drawings and will be described in detail herein, the invention is susceptible of embodiment in many different forms, and it should be understood that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated. The scope of the invention will be pointed out in the appended claims.

The invention is, in brief, directed to a contact assembly illustrated in a preferred embodiment in the form of a stator and rotor unit in a television tuner. A pair of resilient jaw contact clips are firmly secured to the stator and selectively receive pairs of contact blades mounted along the periphery of the rotor. The stator contact clips each have a flexible leg carrying respective resilient jaws so that the jaws may flex sufficiently to compensate for misalignment with the rotor blades. In order to enhance such flexibility and provide a practical and economical assembly, the stator contact clips are mounted

on a stator body in a novel manner, as will appear hereinafter.

Referring to FIGURE 1 of the drawings, a television tuner includes a chassis 10 journaling a shaft 11 suitably held against substantial axial movement with respect to the chassis. A rotor 12 is suitably mounted on shaft 11 for rotation therewith, as by cooperating flats on the shaft and rotor body 13, and is suitably held against any substantial axial movement on the shaft. Rotor body 13 provides a carrier for a plurality of radially extending contact blades, as 14, each firmly secured to body 13 in any suitable manner. Blades 14 cooperate with radially extending shoulder means 15 of the body in defining a channel 16 receiving a peripheral edge portion 17 of a body 18 of a stator 19, to retain the rotor and stator in general operative alignment.

Stator 19 has a pair of contact clips 20 mounted on a carrier defined by body 18 and extending substantially radially toward shaft 11. Each contact clip 20 is illustrated in the form of a strip of resiliently flexible metal folded upon itself to define a pair of facially opposed members 21 and 22 of generally L-shaped configuration and providing a first leg 23 generally coplanar with body 18 and a second leg 24 extending transversely outwardly from body 18 and defining a terminal end for connection with a lead.

Means is provided firmly securing contact clips 20 to stator body 18 and holding these clips operatively positioned. In the illustrated embodiment this means is provided for each clip by a fastener in the form of a rivet 25 extending through aligned openings in first leg 23 adjacent second leg 24, and through aligned openings in stator body 18 and an opening in a key member 26 which is common to both clips. Key member 26 is facially seated on clip legs 23 spanning clips 20 and has a pair of notches 27, one snugly receiving each of the legs 24, thus retaining the clips in general radial alignment with shaft 11.

Resilient jaws 31 and 32 are provided on a free end of second leg 23 opposite fastener 25, and these jaws are defined by free ends of members 21 and 22, respectively. Jaws 31 and 32 have opposed contacting portions receiving cooperating contacting portions of rotor contact blades 14 as these blades are rotated in a plane generally normal to the axis of shaft 11. In order to provide flexibility in the mounting of jaws 31 and 32, each contact clip 20 is formed of resiliently flexible material and is relatively wide in the direction of the plane of movement of rotor contact blades 14 and is relatively thin transversely of this plane so that leg 23 is relatively rigid in the direction of the plane of movement of contact blades 14 and is sufficiently flexible in the direction of the axis of shaft 11 so that jaws 31 and 32 may move transversely of rotor blades 14 to compensate for any misalignment between the cooperating blade and clip contacting portions.

To further enhance the flexibility of each leg 23, an aperture 33 may be provided extending through legs 23 in the general direction of the axis of shaft 11. By providing apertures, rather than notches in the edges of each leg 23, flexibility of the leg is increased in the direction of the shaft axis while rigidity of the leg is effectively unchanged in the direction of the plane of movement of rotor contact blades 14.

Members 21 and 22 are secured to each other adjacent jaws 31 and 32, as by a rivet 34, to insure adequate contact pressure between jaws 31 and 32, enhancing the wiping action between the contacts. Both contact surfaces of the jaws are active, as they flex together, to compensate for misalignment of the rotor contacts.

I claim:

1. An electrical contact assembly comprising: a stator;

at least one stator contact, each stator contact including a flexible thin and wide leg having opposite ends and defined by a pair of facially opposed members, whereby said stator contact is relatively rigid in a direction generally parallel to the width of the members and is flexible in a direction transverse thereto; first means securing each stator contact to said stator at one end of its leg to provide free relatively movable contacting portions including arched sections on the facially opposed members at the opposite end of each stator contact leg; second means securing the facially opposed members of each stator contact to one another between said first means and the arched section of said contacting portions to urge the contacting portions of the respective facially opposed members toward one another; a rotor; at least one rotor contact carried by said rotor, said rotor contact having a contacting portion that is movable along a path generally parallel to the width of said stator contact leg between said contacting portions to move into and out of engagement with the contacting portions of at least one stator contact upon rotation of said rotor, and said second means urging said stator contact contacting portions into engagement with the contacting portions of said rotor contacts with a predetermined force, and the flexibility of said stator contact members allowing said rotor contacts to move into and out of engagement with said stator contacts regardless of slight misalignment between the rotor contacts and the stator contacts.

2. An electrical contact assembly as defined in claim 1 wherein at least one pair of stator contacts are mounted adjacent to one another on said stator, and wherein a notched member is fixed on said stator with each of said pair of stator contacts being received in one of the notches to retain the stator contacts in alignment.

3. An electrical contact assembly as defined in claim 1 wherein each stator contact is provided with a weakened portion between said first and second means.

4. An electrical contact assembly as defined in claim 3

wherein the weakened portion of the stator contacts include an aperture extending through the contacts.

5. An electrical contact assembly comprising: a stator; at least one stator contact, each stator contact including a flexible thin and wide leg defined by a pair of leg members; first means securing said stator contact to said stator at one end thereof to provide a contact which is flexible transversely of a plane generally parallel to the width of said stator contact legs; contacting portions joined by arched sections to the free end of each stator contact leg member; second means securing the leg members of each stator contact to one another between said first means and said arched sections to urge the contacting portions of the stator contacts toward one another; a rotor; at least one rotor contact carried by said rotor, said rotor contact having a contacting portion that is movable along a path generally parallel to the width of said stator contact leg between said contacting portions to move into and out of engagement with the contacting portions of at least one stator contact upon rotation of said rotor, and said second means urging said stator contact contacting portions into engagement with the contacting portions of said rotor contacts with a predetermined force, and the flexibility of said stator contact members allowing said rotor contacts to move into and out of engagement with said stator contacts regardless of slight misalignment between the rotor contacts and the stator contacts.

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BERNARD A. GILHEANY, *Primary Examiner.*