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MEANS FOR ADJUSTMENT, PARTICULARLY FOR TELEGRAPH APPARATUS

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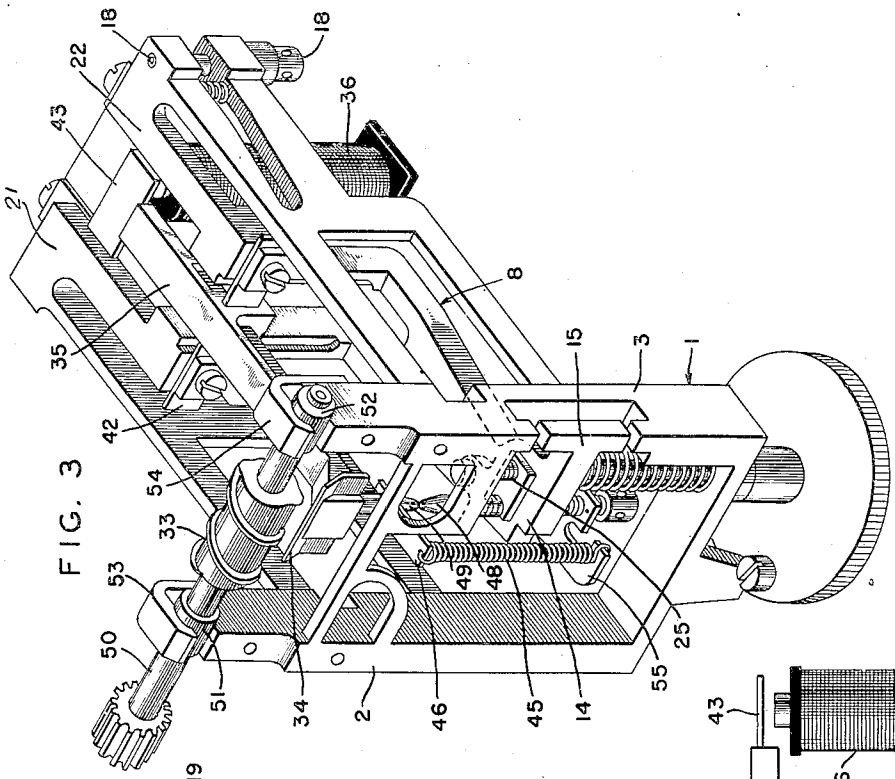


FIG. 3

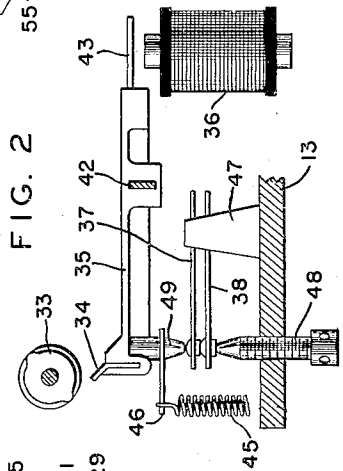


FIG. 2

FIG. 1

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MEANS FOR ADJUSTMENT, PARTICULARLY FOR TELEGRAPH APPARATUS

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8 Claims. (Cl. 178—11)

This invention pertains to adjustment means, especially for telegraph instruments.

More particularly, the invention pertains to frame construction for telegraph instruments in which adjustment means is embodied in the supporting frame of the structure to adjust relative positions of operating members of the telegraph instrument.

Past practice in assembling mutually adjustable parts has been to make one part slidable or rotatable upon the other, or upon a frame member supporting the other.

The object of this invention is to simplify adjustment by mounting a plurality of cooperative members rigidly or non-adjustably upon a supporting frame, the frame itself being formed with a yielding portion between the mounted members with provision for deforming the yielding portion to change relative positions of the mounted members.

This object is accomplished by constructing a supporting frame having comparatively heavy or angularly braced rigid portions integral with comparatively light, weak, or unbraced intervening portions, the rigid portions having facilities for springs and screw members whereby they may be forced through small differences of relative position by virtue of bending or twisting the weaker portions of the frame. In assembling a telegraph instrument, cooperative parts of the instrument may be fixed to the frame members, in close approximation to desired relative positions and final adjustment may be made by bending the frame structure according to this invention.

A more complete understanding of the invention will be obtained from the following description, taken in connection with the accompanying drawing, in which like numerals indicate like parts, and in which

Fig. 1 illustrates a frame structure with adjustment parts added;

Fig. 2 is a sectional view of a complete assembly, embodying also a modification; and

Fig. 3 illustrates a frame structure as in Fig. 1 with further adjustment parts and operating parts added.

A frame casting, indicated generally by numeral 1, comprises columns 2, 3, side beams 4, 5, and cross braces 6, 7, all forming a single rigid main frame portion, with which is associated a further rigid frame portion indicated generally by numeral 8 and comprising columns 11, 12, and a horizontal bar 13, with head 14, and cross head bar 15. Side beam 4 has full rigidity at the junction between beam 4 and web 21 while side beam 5 is weakened by slot 16. The slot 16 may be widened or narrowed to a small extent by adjustment members comprising a compression spring 17 and a screw 18, the extent of such adjustment being limited by a bushing 19 which surrounds the screw 18.

The rigid frame member 8 is integral with the frame 1 through two webs 21, 22, relatively thin as compared with frame portions 4, 5. Frame member 8 may be moved relatively to columns 2, 3, by adjustment members comprising compression spring 24 and screw 25 having a head 26 of large diameter. Movement of member 8 in response to screw 25 is limited to less than a single turn of the screw by two abutments; namely, 27 on the screw and 28 on the frame brace 6. A further precaution against bending the webs 21, 22 beyond limits of elasticity is provided in lugs 29, 30 formed on the frame column 3 in the path of the cross head bar 15, a maximum separation between adjacent lugs being equal to maximum permissible motion of cross head bar 15. By engagement with either lug 29 or 30, further movement of cross head bar 15 and of frame portion 8 is estopped.

Telegraph operating members comprising spiral 33, platen blade 34, armature lever 35, and magnet 36 are mounted on the frame casting. On rigid frame portion 8 and held clamped against faces 40, 41, thereof by screws is a flat spring torsion hinge member 42 to which is rigidly fixed the armature lever 35 bearing at one end a magnetic armature 43 and at the other end the knife edge printing platen 34. Magnet 36 is supported on the rigid frame portion 8 in position to cooperate with armature 43. A spring 45 is attached at one end to a plate 55 on member 8 and at the other end to an extension plate 46 on armature lever 35, providing retractile tension for armature 43.

In a modification illustrated in Fig. 2, contact springs 37, 38, for remote control of connections in response to armature lever 35 are mounted on frame member 13 by means of insulation block 47. By inherent tension, the spring 38 engages an adjustment screw 48. A boss 49 on lever 35 presses the contact spring 37 into engagement with contact spring 38 by tension of spring 45 when magnet 36 is not energized. Position of lever 35 relative to magnet 36 may be adjusted by means of screw 48.

Spiral 33 and shaft 50 are carried in journals 51, 52, which are clamped on tops of columns 2, 3 by clamp members 53, 54. To adjust the platen

blade 34 precisely parallel to spiral 33, the screw 18 is operated, thus moving downward or upward the web 22 and producing a torsion in the web 21, thereby tilting the axis of the torsional spring hinge 42 and accordingly tilting the rigid frame member 8, together with the armature lever 35 and the platen blade 34. To change the distance of blade 34 from spiral 33, screw 25 is operated, thus moving upward or downward that rigid portion 8 of the frame comprising frame elements 11, 12, 13 and carrying upon them the magnet 36, armature lever 35 and platen blade 34, the movement being effective by weakness or pliability of relatively thin webs 21, 22, resulting in change in relative positions of spiral 33 and platen blade 34 without change in position of armature lever 35 relative to magnet 36 and its several adjustments.

The invention has been illustrated herein by embodiment in a specific structure, but it is to be considered as accurately described only by the spirit and scope of the appended claims.

What is claimed is:

1. In an article of manufacture, a pair of elements requiring predetermined separation and parallelism with respect to each other, a first rigid frame member supporting one of said elements, a second rigid frame member supporting the other element, and an elastic frame member integral with said rigid frame members, and means for adjusting said elastic frame member with respect to said rigid frame members for effecting the specified relative adjustment between said pair of elements.

2. The invention described in claim 1 in which all frame members are comprised in a single integral casting.

3. In an article of manufacture, a pair of elements requiring predetermined separation and parallelism with respect to each other, a first rigid frame member supporting one of said elements, a second rigid frame member supporting the other element, a pair of elastic frame members extending substantially in parallel between said rigid frame members and integral with said frame members, and means for adjusting said elastic frame members with respect to said rigid frame members for effecting the specified relative adjustment between said pair of elements.

4. The invention described in claim 3 in which the described integral frame member is a single integral casting, the said elastic members being thin places in the casting.

5. In an article of manufacture, a pair of elements requiring predetermined separation and parallelism with respect to each other, a first rigid frame member supporting one of said elements, a second rigid frame member supporting the other element, first and second elastic members integrally connected to said rigid frame members, a third elastic frame member integral with said first rigid frame member, means for adjustable flexing said third elastic frame member for correcting for parallelism between said elements, and further means for adjustably flexing said first and elastic frame members for varying the separation between said elements.

6. The invention described in claim 5 in which all frame members are comprised in an integral moulded frame structure.

7. In an article of manufacture, a first frame member, a second frame member, an elastic frame member integral with said first and second frame members, adjusting means for varying the relative positions of said first and second frame members by flexing said elastic frame member, and mutually engageable lugs on said first and second frame members respectively.

8. In an article of manufacture, a first frame member, a second frame member, an elastic frame member integral with said first and second frame members, adjusting means for varying the relative positions of said first and second frame members by flexing said elastic frame member, and mutually engageable lugs on said first and second frame members respectively, said lugs located with a maximum relative separation equal to a maximum relative movement of said first and second frame members.

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