

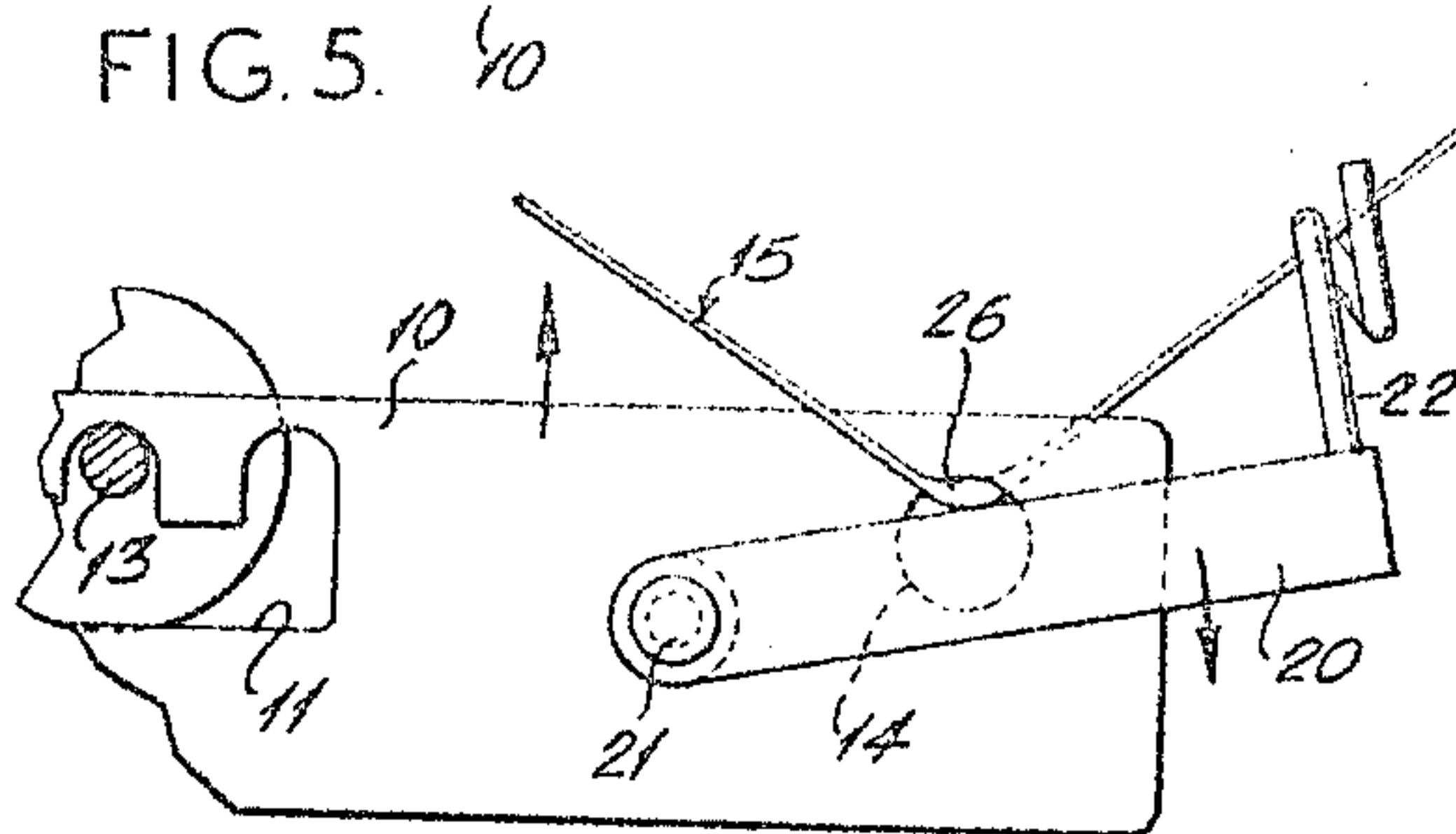
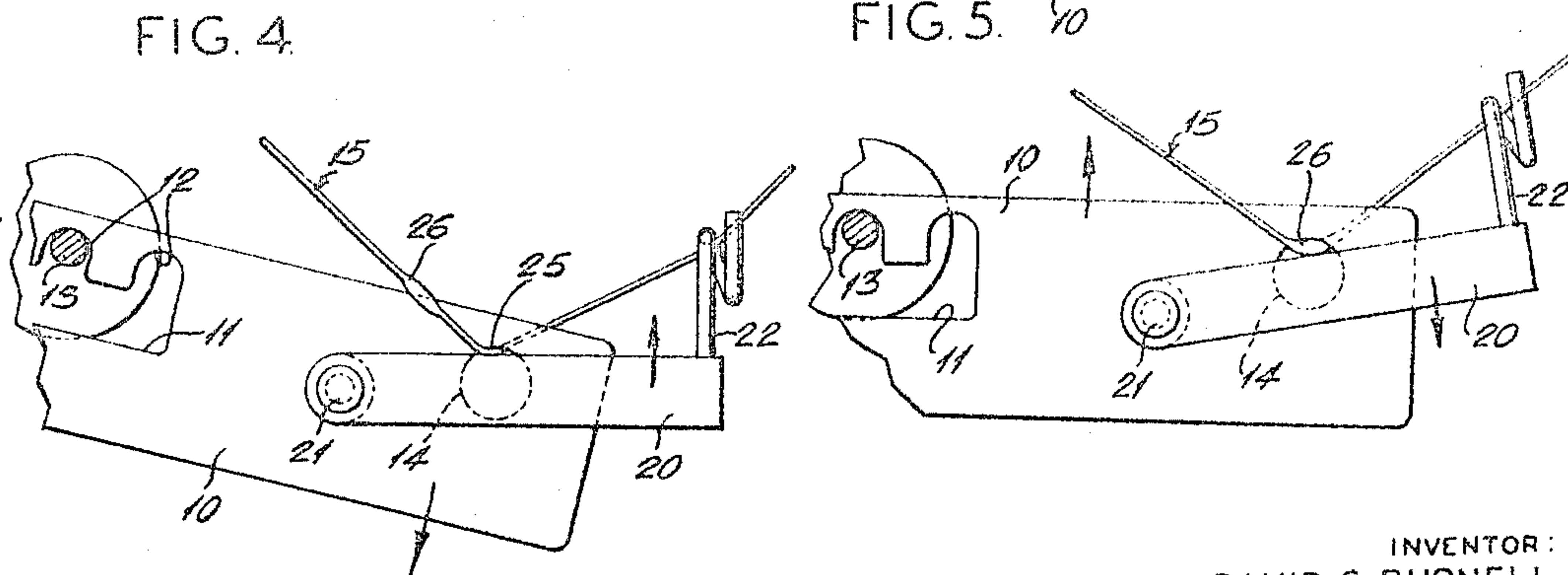
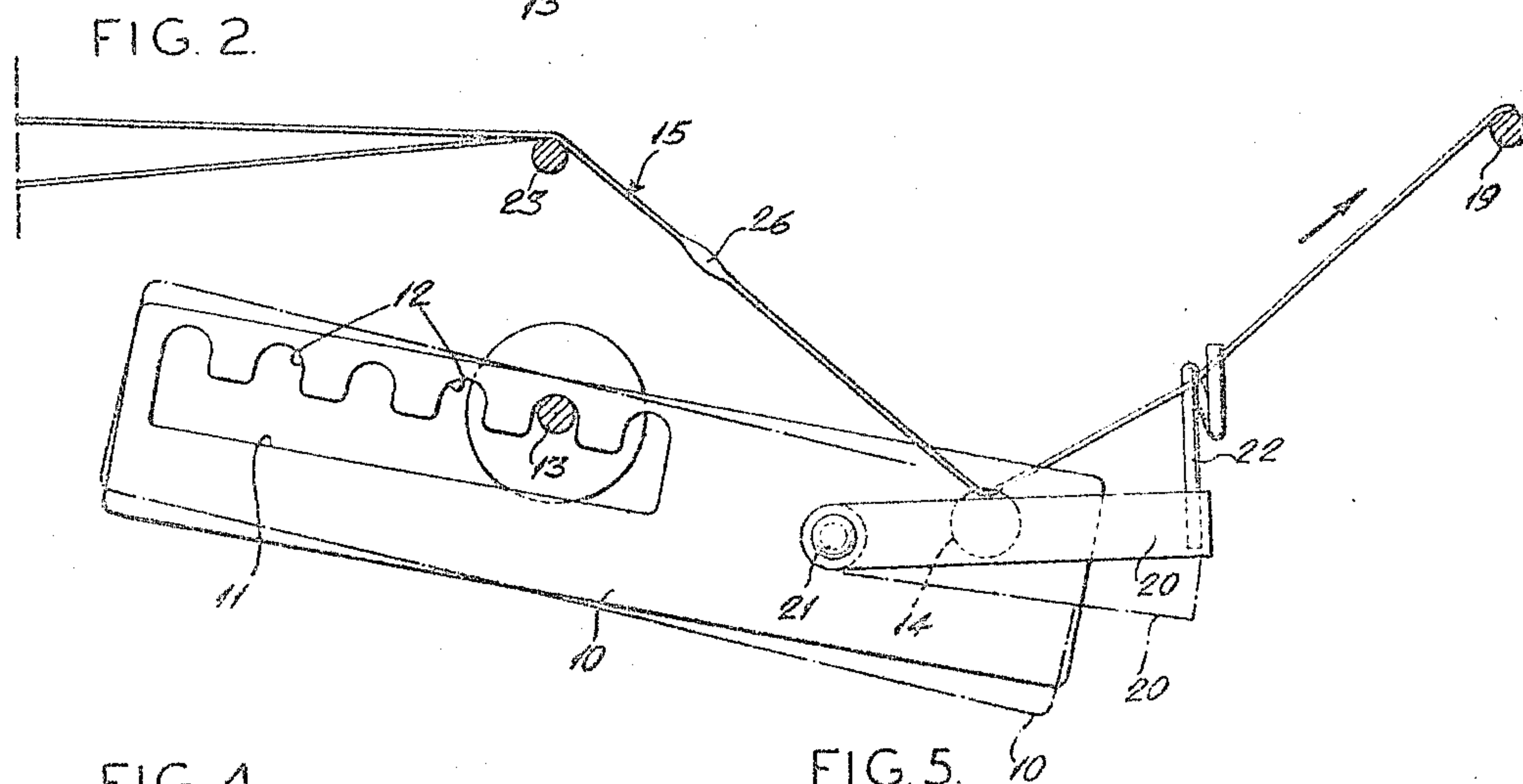
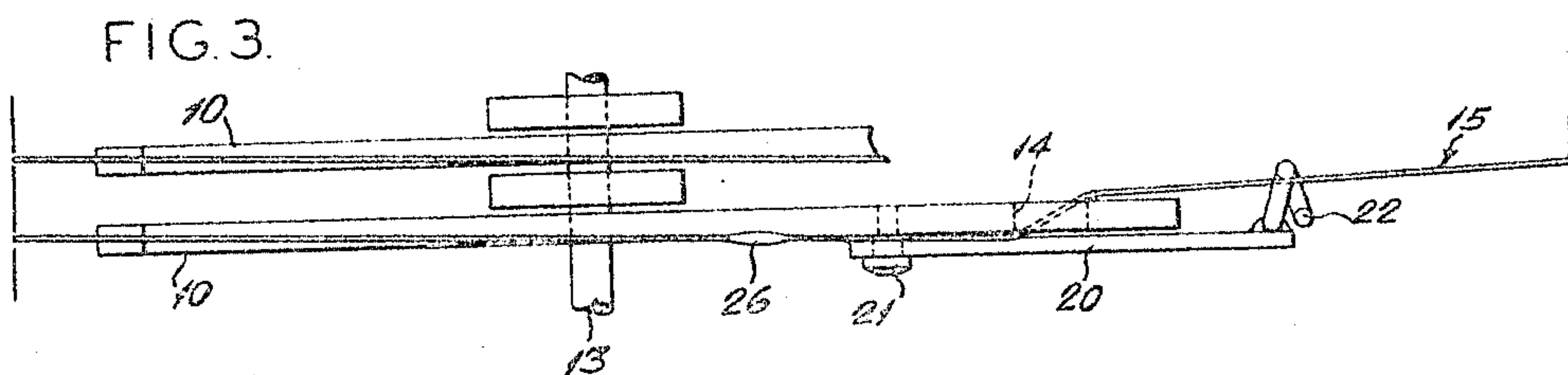
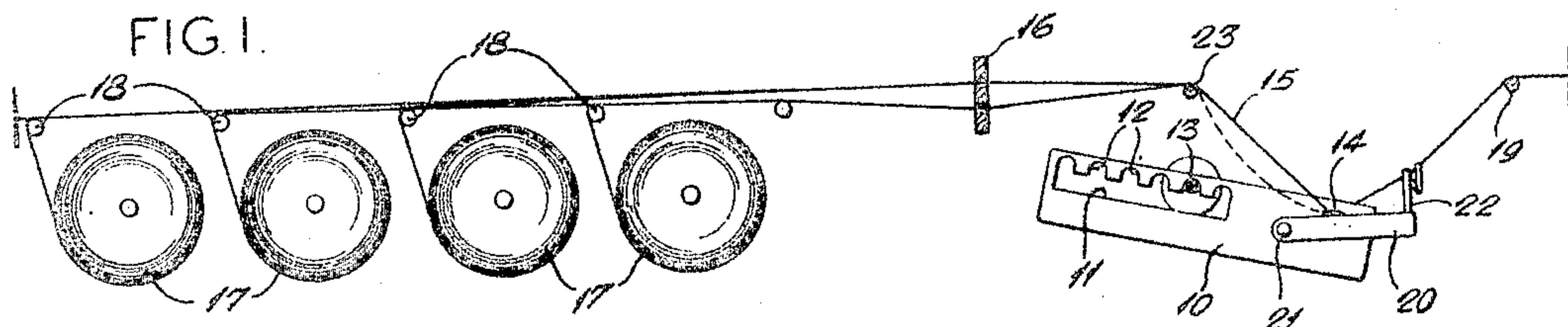
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YARN TENSIONING DEVICE FOR CREELS AND THE LIKE

Filed June 7, 1960



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2,995,316
YARN TENSIONING DEVICE FOR
CREELS AND THE LIKE

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This invention relates to yarn tensioning devices and more particularly to a tension weight for yarn creels which provides a relatively constant tension over a wide range of operating conditions.

A primary object of the present invention is to provide an improved tensioning weight for yarn ends running from a yarn supply preferably a creel which maintains the predetermined weight on the yarn even though excessive slack occurs.

A further object of the invention is to provide a snubber for a creel tension weight which clamps the yarn end to maintain a constant tension when the weight drops to a predetermined angle.

A further object of the invention is to provide an improved yarn tension device which permits knots and slubs to pass through the device without breaking.

Further objects will be apparent from the specification and drawings in which:

FIGURE 1 is a side view of my improved yarn tensioning device installed on a creel,

FIGURE 2 is an enlarged detail showing the device in operation,

FIGURE 3 is a top view of the structure of FIGURE 2, and

FIGURES 4 and 5 are details showing the manner in which a knot or slub is permitted to pass through the tensioning device.

The conventional creel tension weight comprises a rectangular metal plate 10 having a slot 11 adjacent one end thereof and with a series of indentations 12 in the slot on which the weight 10 may be pivoted at 13. The lever arm from pivot 13 to the eye 14 of the weight is proportional to the weight of tension developed in the weight. Positioning of the weight in the desired indentation 12 therefore adjusts the weight to which each of the yarns 15 may be subjected. The yarns are fed through a guide 16 and are supplied from yarn packages 17, 17 on the creel. The individual yarn ends may be run around a series of guides 18 which, if desired, may be constant tensioning devices employed in addition to weight 10. After passing through the eye 14 in the weight 10 the yarns 15 pass over a guide 19 and thence to the loom or other textile apparatus.

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In order to prevent undue pivoting of the tension weight 10 on pin 13 which would effectively reduce the angle of the weight with respect to the yarn, I provide a snubber arm 20 which is pivoted to the weight body at 21 and which also carries a pigtail yarn guide 22 at the opposite end. If the tension in yarn 15 between guides 19 and 23 decreases so that the weight 10 continues to drop, lever 20 is pivoted in counterclockwise by action of the yarn in pigtail guide 22 so that the yarn is snubbed at 25 with the result that no further downward pivoting of the guide takes place even though an excessive slack condition shown in dotted lines in FIG. 1 should occur in the yarn between the eye 14 and the package 17. In this way the effective leverage of the weight is maintained within fairly close limits so that the mass applied to the yarn between eye 14 and guide 19 is substantially constant under all operating conditions.

In the event a knot or slub 26 occurs in the yarn as shown in FIGURE 2, it can still pass through the tensioning device because when it reaches the eye 14 the obstruction automatically raises the weight 10 as shown by the arrow in FIGURE 5 thus permitting the arm 20 to drop and expose a larger area of the eye 14 and thereby allow free passage of the slub or knot 26. As soon as the knot has cleared the eye 14 the weight pivots in a clockwise direction as shown in FIGURE 4 until the yarn is snubbed by the arm 20 and when increased tension in the loom occurs the lever pivots upward in a counterclockwise position sufficiently to permit the yarn to run.

The present yarn tensioning device is highly efficient and solves an important difficulty in the use of pivoting creel tension weights since it maintains a constant tension on the yarns at all times between the tension devices and the loom or tufting machine. Contrary to most other tension devices, a variation is permitted so that knots pass freely and thus undesired yarn breakage is avoided.

Having thus described my invention, I claim:

1. A pivoting yarn tension device for creels and the like comprising a flat weight having an eye near one end thereof, a pivot for supporting the weight at the other end thereof, an arm pivoted to the weight and positioned to cover the eye in one pivoted position, and a yarn guide secured to the arm at the end opposite the pivot.

2. Apparatus in accordance with claim 1 in which the yarn guide on the arm is a pigtail guide.

3. Apparatus in accordance with claim 2 in which the eye in the weight is located substantially midway between the pigtail yarn guide and the arm pivot.

References Cited in the file of this patent

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