April 13, 1965 KIYOSHI ONISHI 3,177,824

TABLE WITH LEAF

Filed April 3, 1963 3 Sheets-Sheet 1

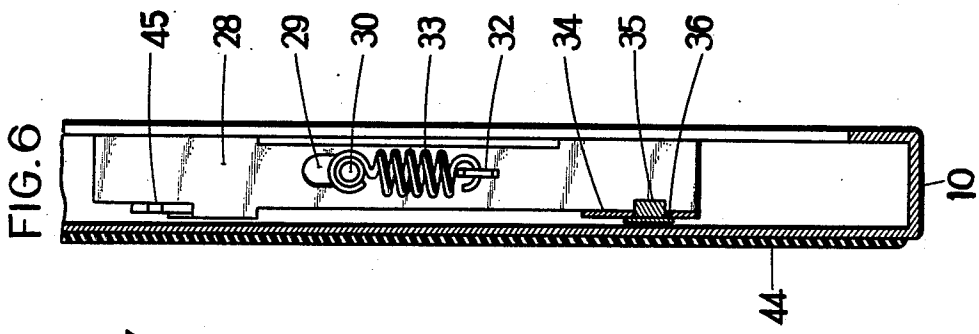

FIG. 6

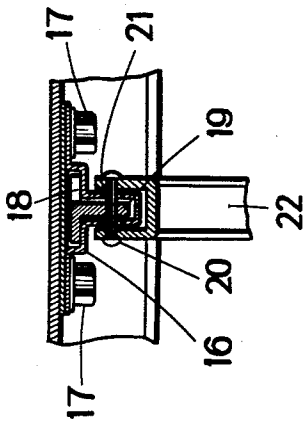

FIG. 3

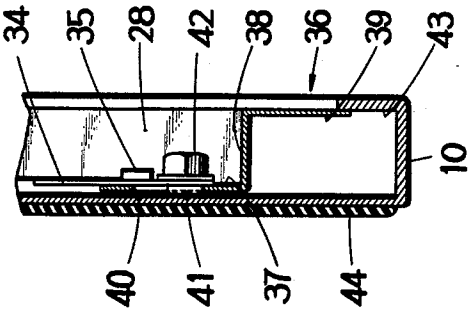

FIG. 5

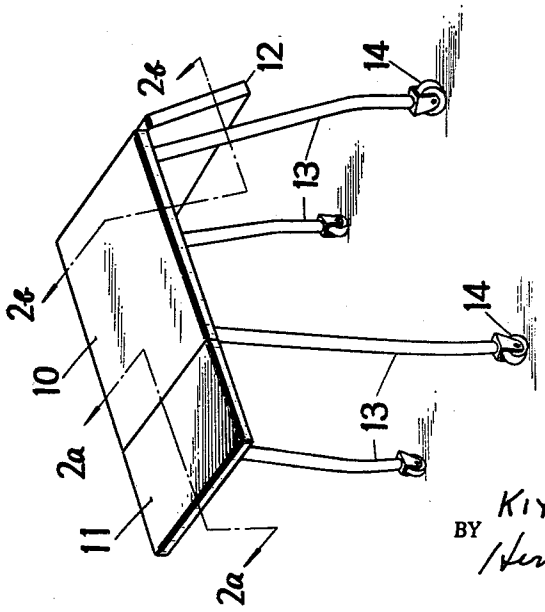

FIG. 1

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April 13, 1965 KIYOSHI ONISHI 3,177,824

TABLE WITH LEAF

Filed April 3, 1963 3 Sheets-Sheet 2

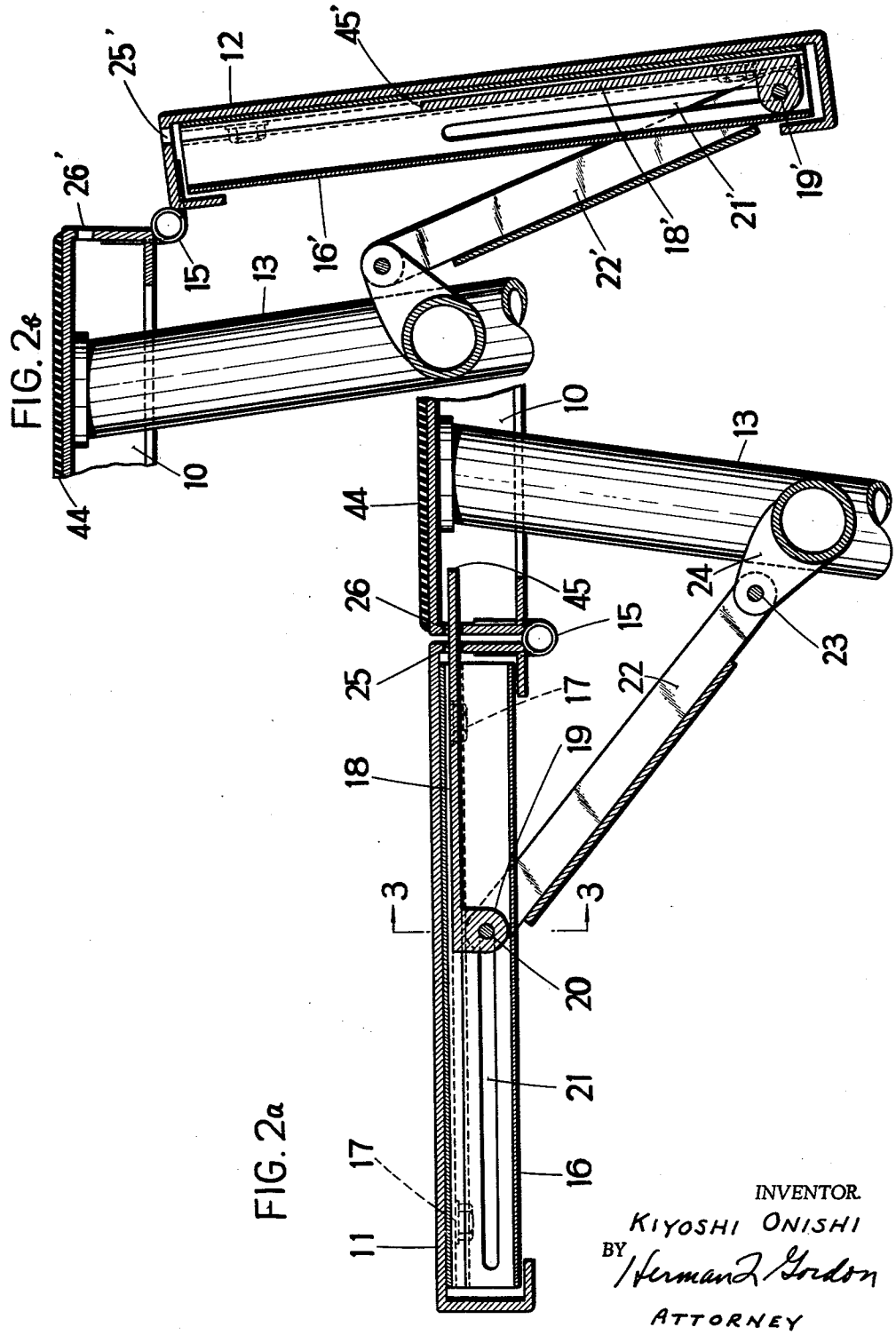

FIG. 2a

FIG. 2a

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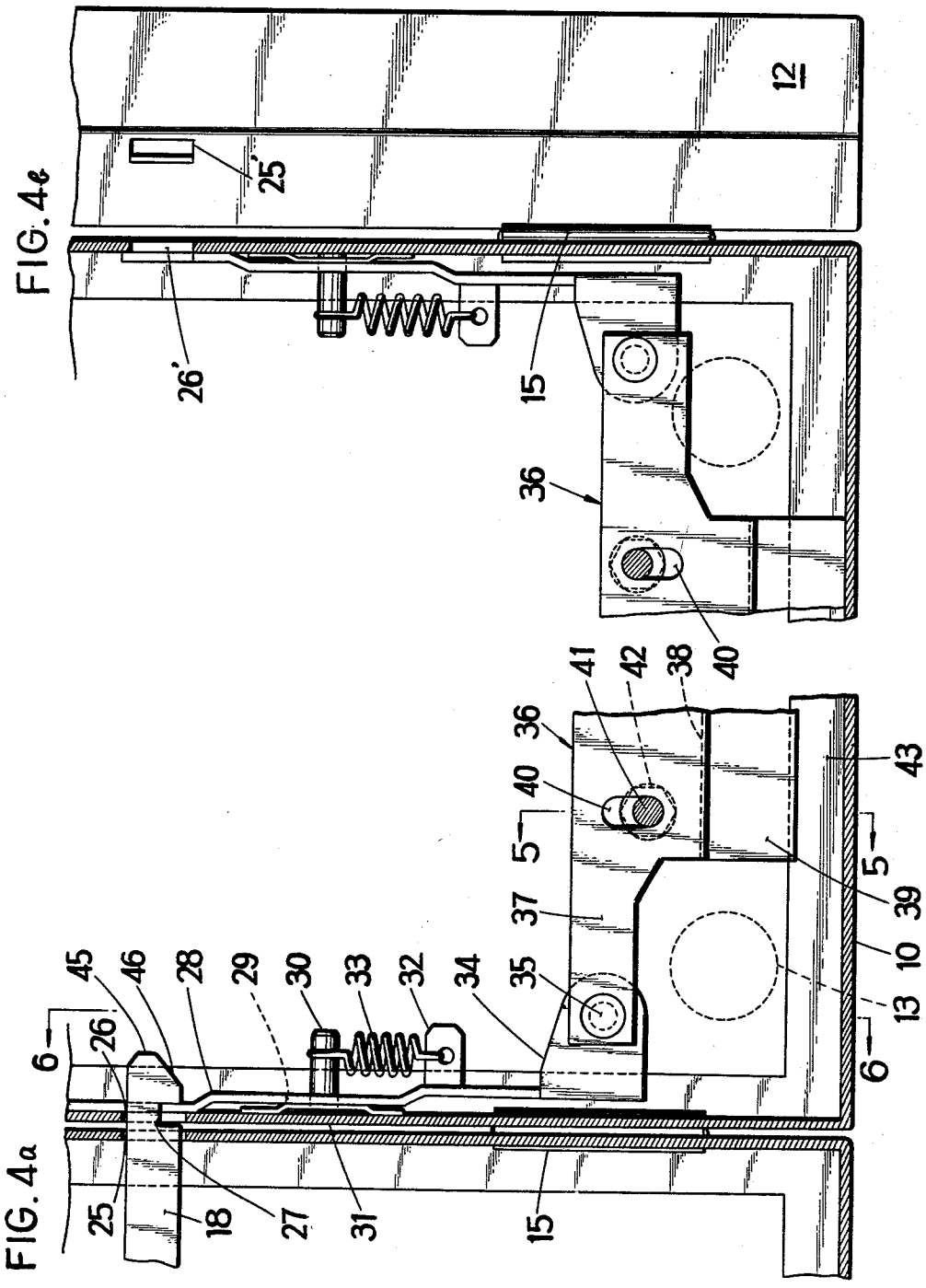
April 13, 1965 KIYOSHI ONISHI 3,177,824

TABLE WITH LEAF

Filed April 3, 1963 3 Sheets-Sheet 3



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3,177,824

TABLE WITH LEAF

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4 Claims. (Cl. 108—77)

This invention relates in general to a table with leaf and it relates more particularly to a table with leaf which, as hereinafter set forth in greater detail, has certain advantages in respect to the structural relationship between the table and the leaf by the fact that the leaf is provided with a slide member which moves with the swing-up and -down motion of the said leaf in such manner that when the leaf has approached the horizontal position to extend the surface of the table, the tip end of the slide member comes out of the said leaf so as to engage with a lock mechanism disposed within the table. The lock mechanism includes somewhat a heavy tension spring connected between a lock bar and a release lever which are pivotally connected with each other. This release lever serves to disengage the lock bar from the abovementioned slide member of the leaf, whereby enabling to flap down the leaf about a hinge connection when the said leaf is unnecessary. The release lever is also disposed in a position hidden by the table body so that there is no fear of unintensional release of the leaf in use. Although not limited thereto, the invention finds special utility for applying to typewriter stands.

In accordance with a preferred embodiment of the invention, the leaf is provided at both sides of a typewriter stand. The lock bar for two leaves are pivotally connected to the ends of the release lever in such manner that when the release lever is drawn with its middle portion against the force of the tension spring, both of the lock bars are disengaged from the slide members of two leaves, and when drawn with a portion biased to either side, one side only of the leaf may be flapped down.

Referring to the drawings:

FIG. 1 is a perspective view of a typewriter stand constructed in accordance with the preferred form of the invention;

FIGS. 2*a* and 2*b* are fragmentary sections taken on the broken lines 2*a*—2*a* and 2*b*—2*b* of FIG. 1 looking in the direction of the arrows, respectively;

FIG. 3 is a transverse section as along the line 3—3 of FIG. 2*a*;

FIG. 4*a* is a plan view, with the upper surface plate of the table cut away, of the lock mechanism portion for the left leaf;

FIG. 4*b* is a view similar to FIG. 4*a*, but showing the lock bar at disengaged position, for the right leaf; and

FIGS. 5 and 6 are sections as along lines 5—5 and 6—6 of FIG. 4*a*, respectively.

The main table of the typewriter stand is represented by the reference character 10. This typewriter stand has two leaves, 11 on the left side and 12 on the right side. The references 13, 13 denotes the legs of the table 10. Fixed to the lower end of each leg 13 is a caster 14.

The leaves 11 and 12 are hinged at 15 to the table 10, respectively. The following construction and mechanism are common to both the leaves 11 and 12. For convenience' sake, therefore, the description will hereinafter be made on a single leaf, e.g., the left leaf 11.

The leaf 11 is provided with a transverse guide rail 16 fixed at 17, 17 to the back side of the leaf 11. The guide rail 16 has a contour to carry therein the slide member 18. According to the preferred embodiment as shown in FIG. 3, the guide rail 16 has a cross section of T-shaped hollow space, of which horizontal space supports the slide member 18. The vertical space of the T-shaped

guide rail 16 serves to guide a bent projection 19 of the slide member 18. The bent projection 19 is pierced by a pivot pin 20 which extends through slots 21, 21 in the guide rail 16 and terminates at one end of a support arm 22, another end of which arm 22 is pivotally mounted at 23 on a bracket 24 of the leg 13 of the table 10. Consequently, the leaf 11 may be supported at the horizontal position, when it is in use, by means of the lock mechanism which will be hereinafter described further in detail. On the contrary, when the leaf is unnecessary, the leaf may flap down under its own weight if the lock is disengaged. In this instant, the support arm 22 swings about the pivot 23, resulting in the slide of the member 18 until the position as shown in FIG. 2*b*.

The opposite side wall of the leaf 11 and the table 10 have openings 25 and 26, respectively, through which passes the tip end portion of the slide member 18.

The slide member 18 has at its tip end portion a notch 27 adapted to engage with the lock bar 28. As indicated in FIGS. 4*a* and 6, the lock bar 28 has a slot 29 pierced by a pin 30, which pin 30 is secured at 31 to the side wall of the table 10. The lock bar 28 is also provided with a spring rest 32 of the tension spring 33, other end of which spring connected to the pin 30. Thus, the lock bar 28 is biased normally by means of the tension spring 33 (somewhat heavy spring) to the position to engage with the notch 27 of the slide member 18. The root portion of the lock bar 28 has a lug 34 pivotally connected at 35 with one end of the release lever 36.

The release lever 36 has a crank-formed cross section as shown in FIG. 5, that is to say it consists of the upper horizontal wall portion 37—the horizon means the plane of the table—the vertical wall portion 38 and the lower horizontal wall portion 39. The upper horizontal wall portion 37 has a slot pierced by a guide pin 41 which serves to position the release lever 36. One end of the guide pin 41 is firmly fixed to the back side of the table 10, and other end of which pin has a screw threaded part to engage with a nut 42. The lower horizontal wall portion 39 of the release lever 36 rests on a reinforced bent rim 43 of the table 10. Thus formed the construction, the release lever 36 can move along the plane of the table 10.

Reference character 44 denotes a rubber sheet covering the surface of the table 10.

Considering now the operation of the typewriter stand illustrated in the accompanying drawings, firstly in FIG. 2*b* the leaf 12 is shown at the idle position. The slide member 18' is entirely retired into the body of the leaf 12 by swinging down the support arm 22'.

When the leaf 12 is necessary to use, the operator may easily and manually swing it up to the horizontal position. And in this instant, the slide member 18' is sliding forward. When, the leaf 12 has approached the horizontal position it exposes tip end 45' of the slide member 18' from the opening 25'. Then, the tip end 45' advances into the opening 26' of the opposite side wall of the table 10, the opening 26' being of sufficient vertical height to allow the tip end 45' to freely enter same as slide member 18' swings upwardly toward a horizontal position. Similarly, the opening 26 for the tip end 45 of slide member 18 is of sufficient vertical height to allow tip end 45 to freely enter opening 26 as slide member 18 is raised to a horizontal position.

Referring to FIG. 4*a*, when the tip end 45 of the slide member 18 has projected into the opening 26 of the table 10, it brushes, with its inclined cam-like surface 46, aside the lock bar 28. Thence, the lock bar 28 is drawn back, resulting in tension of the spring 33. And, when the tip end portion has penetrated enough, that is to say, the notch 27 has passed the lock bar 28, the latter bar 28 suddenly falls into the notch 27 by the restoration of

the tension spring 33, thus it locks the slide member 18. This holds leaf 11 in an almost horizontal position.

The leaf is easily released by withdrawing the release lever 36 downwardly as viewed in FIG. 4*a*. This withdrawal is effected by engagement of finger tip ends to the vertical wall portion 38 of the release lever 36. The release lever 36 is, as shown in FIG. 5, enclosed and covered by the table 10. So that the lock mechanism can be safely protected from unintentional disengagement.

While the invention has been disclosed as carried out by the above described specific forms of typewriter stand, it should be understood that changes may be made therein without departing from the invention in its broader aspects, within the scope of the appended claims.

I claim:

1. A table having a transverse hinged leaf and a depending supporting frame, a slide member slidably mounted in said leaf for sliding movement in a direction substantially perpendicular to the hinge axis of the leaf, a support arm pivotally connected at one end to said slide member and at the other end to said supporting frame, said slide member being of sufficient length to extend inwardly beyond the hinged edge of the leaf when the leaf is in a substantially horizontal position, the transverse edge of the table adjacent the hinged edge of the leaf having a depending flange formed with an opening to receive the inwardly extending end portion of the slide member, a lock bar slidably mounted on said table edge inwardly adjacent said flange, said end portion of the slide member being formed with a detent notch and the lock bar being lockingly engageable in said notch, spring means urging said lock bar toward said opening and toward locking engagement with the notch of the slide member, a horizontal release bar pivoted to a bottom longitudinal side marginal portion of the table, and means pivotally connecting said release bar to said lock bar, whereby the lock bar may be retracted from the detent notch by rotating said release bar.

2. A table having respective transverse hinged leaves at opposite ends thereof and having a depending supporting frame, each leaf having a slide member slidably mounted therein for sliding movement substantially perpendicular to the hinge axis of the leaf, each leaf being provided with a support arm pivotally connected at one end to its slide member and at the other end to the supporting frame, each slide member being of sufficient length to extend inwardly beyond the hinged edge of the

associated leaf when the leaf is in a substantially horizontal position, the transverse edges of the table adjacent the hinged edges of the leaves having depending flanges formed with openings to receive the inwardly extending end portions of the slide members, each transverse edge of the table being provided with a lock bar slidably mounted inwardly adjacent the flange thereat, the inner end portions of the slide members being formed with detent notches and the lock bars being lockingly engageable in said notches, spring means urging the lock bars toward the openings in the adjacent flanges, and toward locking engagement with the notches in the slide members, a horizontal release lever movably supported beneath a longitudinal side margin of the table, and means pivotally connecting the opposite end portions of the release lever to the lock bars, whereby the lock bars may be selectively retracted to release positions by retracting the adjacent portions of the release lever.

3. The structure of claim 2, and wherein the release lever is slidably mounted beneath the table so that it can be moved in a substantially transverse direction, whereby both lock bars may be simultaneously retracted.

4. The structure of claim 2, and wherein the release lever is movably supported by means of respective depending headed guide pins secured to the table adjacent the opposite end portions of the release lever, the release lever being formed with transverse guide slots slidably receiving the respective headed guide pins, whereby the release lever can be moved in a substantially transverse direction to simultaneously retract both lock bars.

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