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A. ADELMANN

COMBINATION TOOL

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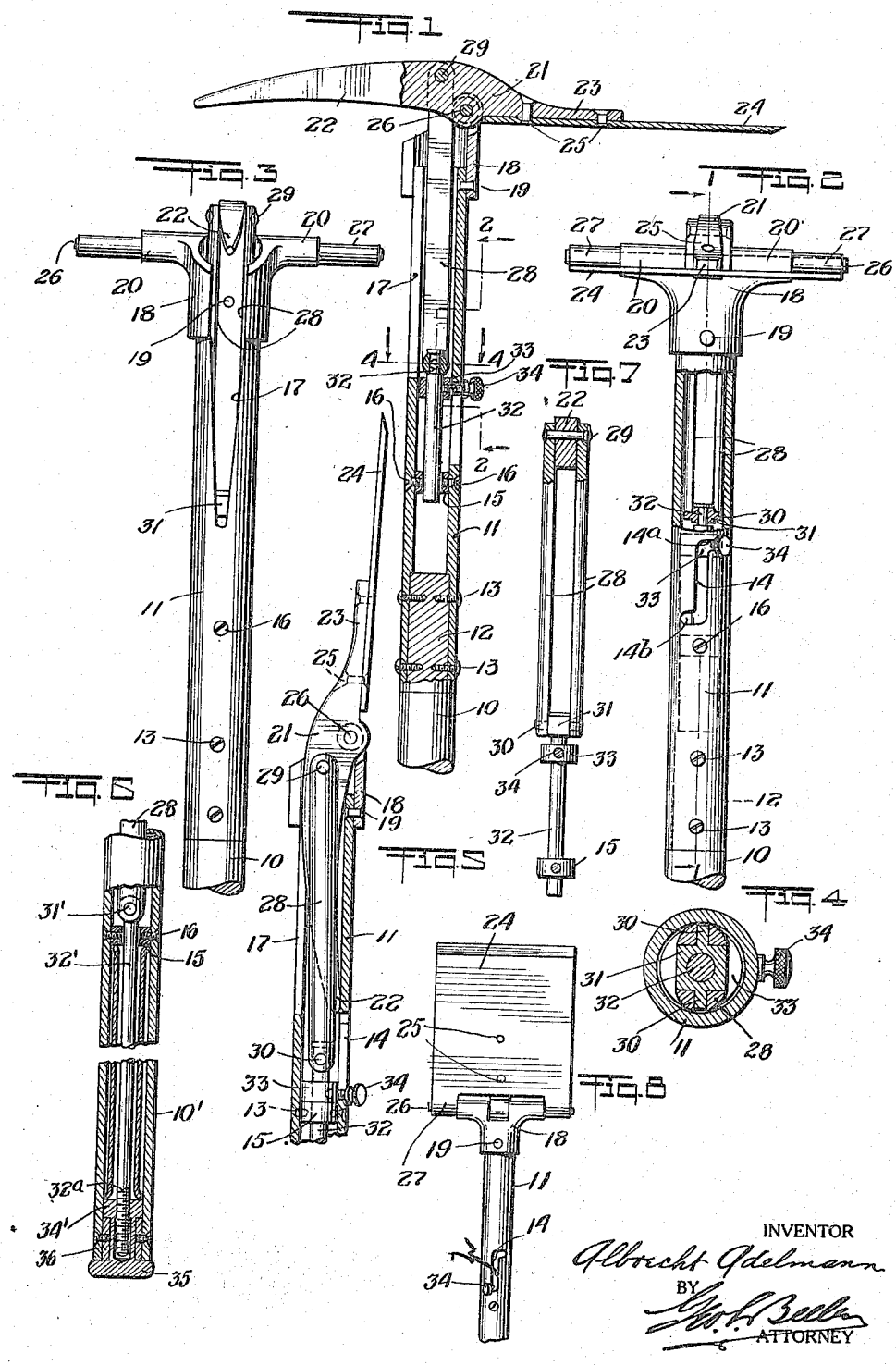

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COMBINATION TOOL.

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To all whom it may concern:

Be it known that I, ALBRECHT ADELMANN, a citizen of Germany, residing at New York city, borough of the Bronx, in the county of Bronx and State of New York, have invented certain new and useful Improvements in Combination Tools, of which the following is a specification.

This invention relates to combination implements or tools and has particular reference to hand operated tools for various uses such as spades, hoes, or picks.

Among the objects of the invention is to provide a tool having a suitable manually operated handle for manipulating the head portions thereof and having means associated with the handle for adjusting said head portions according to various functions or uses.

More specifically, among the objects of the invention is to provide a tool comprising a handle, a head for the end of the handle, and a rigid tool body so hinged to the head as to swing around an axis perpendicular to the axis of the handle, said tool body carrying at one end a cutting blade which may be used as a hoe, a spade, or the like, and having at the other end a pointed member in the nature of a pick and which may be used as a pick in one position and serving as a stiffener or brace for the body in another position.

Another object of the invention is to provide for an adjustable tool of the general nature set forth, manual means for adjusting the tool members in the most rapid and convenient manner.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings, in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a partial side elevation and partial central section of my improved tool adjusted for use as a hoe and a pick, the section being substantially on the line 1—1 of Fig. 2.

Fig. 2 is a front elevation with parts in section.

Fig. 3 is a rear elevation of the same.

Fig. 4 is a transverse sectional detail on the line 4—4 of Fig. 1 on a somewhat larger scale.

Fig. 5 is a view similar to Fig. 1, but showing the adjustment of the tool for use as a spade or other similar digger.

Fig. 6 is a detail view of a modification showing a variation in adjusting means.

Fig. 7 is a detail view of the adjustment means for the body.

Fig. 8 is a face view of the device in the position of Fig. 5 set for use as a spade.

Referring now more specifically to the drawings I show my improvement as comprising a handle 10 of any suitable construction, design, or length, and fitted to it a tubular extension 11 preferably of metal, the same being shown attached to the reduced neck portion 12 of the handle and locked thereto by suitable screws 13 or the equivalent. The tubular shank portion 11 of the handle is provided along its front side with a bayonet slot 14 having at its opposite ends angular extensions 14^a and 14^b for locking purposes soon to be seen. Fitted in the shank adjacent to the end 14^b of the slot is a collar 15 serving as a guide and held in place by clamping means such as screws 16. On the rear side of the shank and remote from the handle 10 is provided a narrow V-shaped slot 17 which merges into a strong relatively heavy head 18 formed on or fixed to the shank 11 by any suitable means including, for example, rivets 19. This head includes laterally extending hubs 20.

The principal active part of the tool comprises a body 21 of a strong substantial nature and having at one end a sharp tool or pick 22 and at the other end a plate 23 to which is secured a cutting blade 24, as by means of rivets 25. The parts 22 and 24 may have any desired individual construction or design. The means for attaching the body 21 to the head includes a strong pivot pin 26 which projects through the hubs 20 and around the ends of which the ear portions 27 of the blade 24 extend. The pivot pin 26 passes directly through the head 18 transversely.

As a suitable means for swinging the body 21 around the axis of the pivot pin 26 I provide a pair of links 28 connected pivotally at 29 to the body eccentric to the axis of the pivot 26, and at the other ends the links are pivoted at 30 upon a cross head 31 movable

lengthwise along the shank 11 and in which is journaled a center guide 32 in the nature of a bolt, the head or neck portion of which is swiveled in the cross head and so is adapted to rotate through a short angle in addition to being movable bodily lengthwise of the handle. Fixed to the guide 32 is a collar 33, a set screw 34 passing through the slot 14 serving to bind the collar to the guide. The screw 34 constitutes a finger piece for manipulating the guide 32 both longitudinally and around its axis. The set screw furthermore serves as a locking means for co-operation in the angular extensions of the slot. The remote end of the guide is slidable in the collar 15 and thus is maintained in its substantially central position. As will be apparent by comparison of Figs. 1 and 5, when the link pivot 29 is thrown upward or outward from the handle by movement of the set screw in such direction along the slot into registry with the extension 14^a, the pick 22 will be projected from its bracing housed position and substantially at a right angle from the handle and the blade 24 will likewise be projected at an angle for use as a hoe. By rotating the guide pin 32 by bringing the set screw into the end of the angular extension 14^a, the parts will be locked in such position and either the pick or the blade may be used according to the immediate necessity. When the blade is to be used as a spade or other analogous digger, the operator simply unlocks the set screw 34 and slides it along the slot 14 until the angle portion 14^b is reached where the set screw is locked again at which time the parts will be in the position of Fig. 5 and locked for such use. The hub and ear extensions 20 and 27 serve, therefore, not only as pivotal connections, but also as shoulders for the application of the operator's foot in the use of the tool as a spade.

The variation in adjustment means shown in Fig. 6 includes a center guide rod 32′ connected as before described to the links 28 at a cross head 31′ and extending all the way to the opposite end of the handle 10′ where it is screw threaded at 32^a for co-operation with a rotatable finger piece in the form of a nut 34′ having a knurled head 35 journaled by means of a shoulder or collar 36 in the end of the handle. This nut being thus held from endwise movement will cause the movement of the rod 32′ endwise when rotated and thereby the endwise movement of the links and the swinging of the tool members as before described. The portion of the guide adjacent to the cross head is guided in a collar 15 fixed in the tubular portion of the handle. In either form of the invention the tool parts 22 and 24 are easily adjusted to different angles for various uses and the adjustment may be effected quickly by finger manipulation, although the form of the invention shown in the principal figures is the one in which the adjustment is quicker than in the form shown in Fig. 6.

I claim:

1. A combination tool comprising a handle having a tubular shank portion, a head at the end of the shank, a tool body connected by a transverse pivot to said head at one side of the axis of the handle, the shank being slitted adjacent to the head at the opposite side from the pivot, a portion of the body being movable around said pivot through the slit into the hollow shank, another portion of the body being swingable through an angle around said pivot and carrying a tool adapted for different purposes according to position, link means pivoted to the body eccentric to the pivot aforesaid, and manual means connected to the link means for swinging the body around its pivot.

2. Mechanism as set forth in claim 1 in which a guide rod is connected to the link means and is movable endwise along the handle and the manual means for adjusting the body is associated with said guide rod.

3. A device as set forth in claim 1 in which the link means comprises a pair of links pivoted on opposite sides of the body at one end and between which the portion of the body that swings into the tubular shank is adapted to nest in one position of the body.

4. In a combination tool, the combination of a handle having a tubular portion, a head fixed to the tubular portion at the remote end thereof, a body pivoted in said head for movement around a transverse axis so as to bring one end of the body within the tubular member, a pair of links pivoted to the body eccentrically of the pivot aforesaid, manual means connected to the opposite ends of the links for moving the same endwise of the handle and for causing the swinging of the body, and means to lock the manually controlled means from accidental movement.

In testimony whereof I affix my signature.

ALBRECHT ADELMANN.