Oct. 8, 1957 S. L. SIMKINS 2,808,862

MAGNETIC SCREWDRIVER BIT

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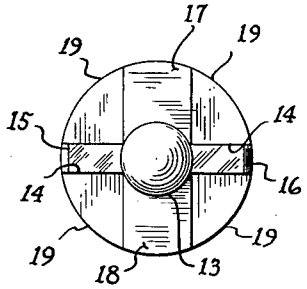


Fig. 2

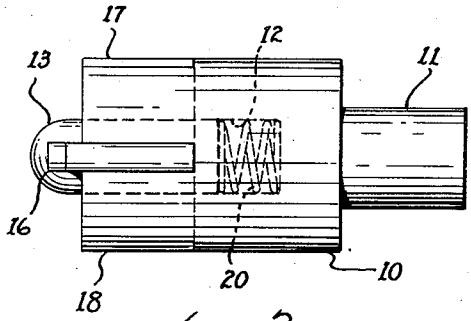


Fig. 3

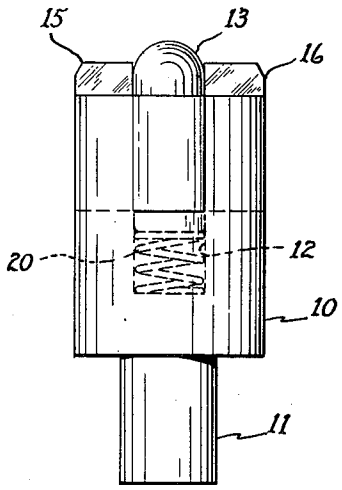


Fig. 1

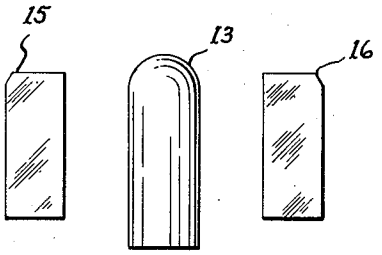


Fig. 4

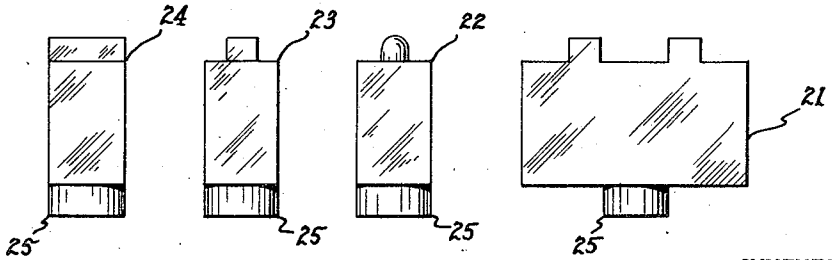


Fig. 5

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MAGNETIC SCREWDRIVER BIT

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2 Claims. (Cl. 145—50)

This invention pertains to improvements in screwdriver bits and is particularly directed to an improved bit wherein a pilot plug and various forms of screw engaging elements may be rapidly and easily applied to the end of the bit or removed therefrom while being held in position magnetically.

Further features and advantages of this invention will appear from a detailed description of the drawings in which:

Fig. 1 is an elevational view showing the assembled screwdriver bit with pilot plug.

Fig. 2 is a plan view of the screwdriver bit shown in Fig. 1.

Fig. 3 is a side elevation of the screwdriver bit of Fig. 1 at a 90 degree circumferentially removed position from Fig. 1.

Fig. 4 is an exploded view showing the plug and screwdriver elements of the standard bit.

Fig. 5 shows various forms of alternate screwdriver ends which may be applied to the bit.

As an example of one embodiment of this invention there is shown a screwdriver bit having a main body **10** and a shank **11** adapted to be received by the driving apparatus. A central counter bore **12** is formed in the body **10** in which is slidably mounted the centering plug **13**. A radially disposed cross slot **14** receives a pair of screwdriver lugs **15** and **16** which nicely fit in the slots **14**. At diametrically opposite positions and 90 degrees circumferentially removed from the slot **14** are magnetic pieces **17** and **18** preferably rigidly fixed into the body portions **19** of the main body **10**. It may also be desirable to have a light compression spring **20** in the bore **12** in order to normally urge the plug **13** outwardly in part but not fully out of the bore **12**.

Thus in this arrangement the magnetic fields of force between the members **17** and **18** proceeding through the portions **19** hold the screwdriver bit pieces **15** and **16** in the slot **14** and at the same time restrain the plug **13** that it does not come out of the main body **10** but still is free to slide axially in the bore **12** in compressing the spring **20** as the tool is engaged with the screw to be driven.

The device is also well adapted to an arrangement where no pilot plug **13** is required but various forms of screwdriver bits of special character such as shown at **21**, **22**, **23** and **24** of Fig. 5 may be placed in the slot **14**

across the counter bore **12** with the tongue **25** of the various forms of bits in Fig. 5 entering in the bore **20**. Again the magnetic fields of force between the members **17** and **18** rigidly hold the various bit forms of Fig. 5 in the shank **10**.

In order to change the bits it is merely necessary to appropriately tap on the body **10** or swing it down hard to dislodge the members **15** and **16** and **13** or the members of Fig. 5 from the bit without requiring the use of any wrenches, clamping devices or the like. Likewise the new pieces may be easily inserted into the slot **14** and the bore **12** as described.

While the apparatus herein disclosed and described constitutes a preferred form of the invention, it is also to be understood that the apparatus is capable of mechanical alteration without departing from the spirit of the invention and that such mechanical arrangement and commerical adaptation as fall within the scope of the appendent claims are intended to be included herein.

Having thus fully set forth and described this invention what is claimed and desired to be obtained by United States Letters Patent is:

1. A screwdriver bit having, a cylindrical body, a driving shank fixed coaxially to the rear end of said body, a central axial bore formed in the front end face of said cylindrical body, a cylindrical centering plug axially slidable in said bore having a rounded outer end projecting beyond the front end face of said body, a diametrically disposed cross slot in said front end face extending from the outer periphery of said body through said bore, a pair of screwdriver slot engaging lugs removably carried in said cross slot having screw engaging ends projecting outwardly beyond said front end face of said cylindrical body on opposite sides of the bore and in engagement with said centering plug, a further slot diametrically formed in the front end face of said body at right angles to said cross slot, magnet pieces fixed in said slots with their outer ends flush with said front end face of said body and having inner concave surfaces concentric with said bore and contacting said cylindrical centering plug, said magnets being thus positioned to magnetically hold said centering plug and said lugs removably in said body.

2. In a screwdriver bit as set forth in claim 1 wherein a yielding compression spring in the bottom of said counterbore behind said centering plug allows movement of the plug inwardly of said body by engagement with the screw head while said magnets normally hold said plug in said body in outwardly thrust position by said spring when released from the screw head.

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