Nov. 8, 1932. L. B. EHRLICH 1,887,085

CENTER PUNCH CONSTRUCTION

Filed June 27, 1930

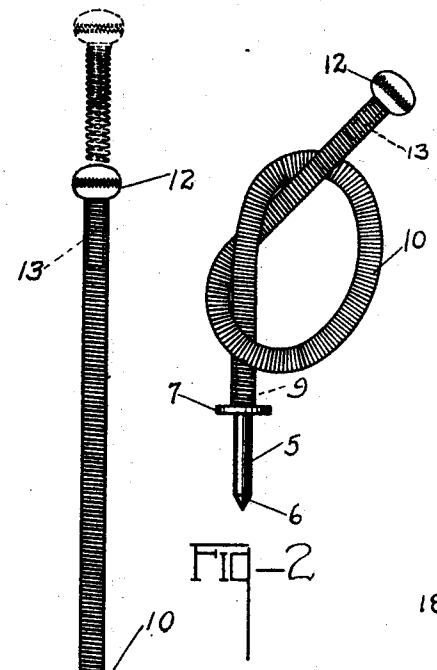


FIG-2

FIG-1

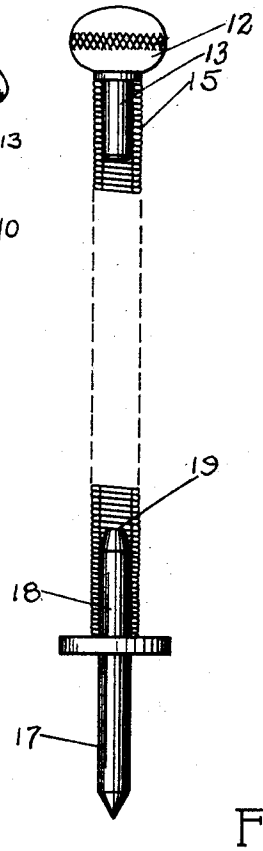


FIG-3

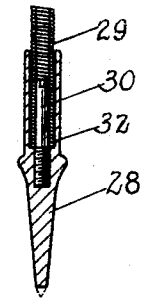


FIG-6

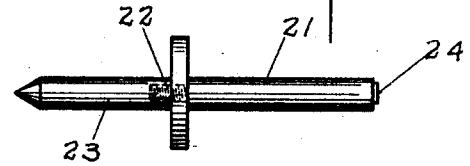


FIG-4

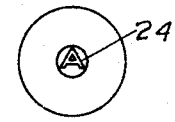


FIG-5

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UNITED STATES PATENT OFFICE

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CENTER PUNCH CONSTRUCTION

Application filed June 27, 1930. Serial No. 464,247.

The invention relates to devices adapted to utilize the reactive force of a contractile member as a driven or impinging force.

The invention embraces the adaptation of the reactive force resulting from the distortion and release of a contractile coiled member having its convolutions in close contact for marking and stamping tools such as used for center punching, nail setting, chiseling and analogous operations.

One of the objects of the invention is to simplify and accomplish in a more efficient manner the operations above cited.

Another object of the invention is to effect the driving of tools adapted for this purpose without the aid of hammers or analogous instrumentalities.

Another object is the utilization of the inherent stress of a coil member to grip or hold in place the tool member and its actuating element.

A further object of the invention is the provision of a simple and efficient tool of this character which may be distorted to occupy a comparatively small space when not in use.

Further objects and advantages are within the scope of this invention such as relate to the arrangement, operation and function of the related elements of the structure, to various details of construction and to combinations of parts, elements per se, and to economies of manufacture and numerous other features as will be apparent from a consideration of the specification and drawing of a form of the invention, which may be preferred, in which

Figure 1 is an elevational view of the tool of my invention;

Figure 2 is a view showing the device coiled or distorted to occupy a small space;

Figure 3 is an enlarged view showing certain details of assembly of the several parts of the tool;

Figure 4 is a view illustrating the interchangeability of my device for various uses;

Figure 5 is an end view of parts shown in Figure 4;

Figure 6 is a view showing a modified form of my device.

It is to be understood that although I have shown a form of the tool of my invention adapted for certain particular uses, it is to be understood that I contemplate the use of various forms of my device wherever the same may be found to be applicable.

Referring to the drawing in detail, the device consists substantially of a cylindrical tool member 5 in the particular embodiment shown in Figures 1, 3 and 6, it being of the configuration of a so-called "center punch" having a conical extremity 6 and an enlarged disc-like portion 7 forming a finger piece for ready positioning of the tool upon the work. The tool member 5 is provided with a cylindrical tenon or extension 9 which is snugly received into the hollow central portion of a contractile coil member 10 which is so constructed that its convolutions are in close contact with one another, the opposite extremity of the coil member being provided with a cylindrical finger piece 12, the finger piece being formed with the tenon 13 which projects into the coil member or retractile element. It should be noted that the tenons 9 and 13 of the tool 5 and finger piece 12 respectively snugly fit the hollow portion of the spring in such a manner that they may be easily and quickly inserted in the spring. The inherent tendency of the spring to coil to its contractile position provides the necessary stress exerted upon these tenons and serves the purpose without additional means of holding these tenons in place. The finger piece and the tool may be easily removed by grasping the spring in such a manner as to slightly uncoil the same which action causes the spring to lose its grip upon the tenons, and the same may be easily removed thus facilitating the assembly of several parts of my invention.

In the operation of my device, the tool point 6 is properly positioned upon the work to be punched or marked, the finger piece 12 being withdrawn thus extending the coil spring 10 approximately to a position shown by the dotted line in Figure 1. The finger piece 12 is then released and the tendency of the spring to return to its original closely coiled position results in the tremendous impact produced by the integration or addition of the impact of each single convolution

against the adjacent one which total is imparted to the tool 5 thus effectively driving it into the work.

In the form of my device shown in Figure 3 the spring 15, wound of wire of substantially rectangular cross-section is connected to the tool 17, the latter being provided with the tenon 18 which is also hardened, i. e., the extremity of the tenon 18 may be formed with another tool or marking device 19 of any suitable configuration depending upon the use to which the tool may be subjected. Obviously, by making the tool member of this form, the same may contain two separate marking tools carried by the extremities of the tenons 17 and 18. In order to change from one tool to another, it is only necessary to withdraw one tenon from the end of the spring 15 and insert the opposite tenon thus bringing the other tool into operative position.

In still another form of my device shown in Figures 4 and 5, one of the tenons 21 may be provided with a threaded portion 22 adapted to be threaded into an axially aligned opening in a tool member 23. The tenon 21 may also have an extremity of a configuration as, for example, a letter as illustrated at 24. By this means a number of tenons corresponding in size to the tenon 21 containing various markings may be used with the conical tool member 23.

The form of my device illustrated in Figure 6 shows still a further method of securing the tool member 28 to the spring 29, the means shown being in the form of a threaded member preferably a headless machine screw 30 threaded into an opening in the tool member 28, the coil spring 29 being carried upon the threads of the member 30. The tool member 28 in this form of device is also provided with an integral upwardly projecting sleeve portion 32, its exterior portion being preferably knurled in order to facilitate manipulation of the device.

It is apparent that, within the scope of the invention modifications and different arrangements may be made other than is herein disclosed, and the present disclosure is illustrative merely, the invention comprehending all variations thereof.

What I claim is:—

1. In combination, a tool carrying member having a shank portion; an impact member in the form of a coiled element having its convolutions in normally close contact with one another, a portion of said element being secured to the shank portion of said member whereby the tool receives the impact resulting from the striking action of the convolutions against one another when the element is tensioned and released, and the space enclosed by the coiled element except for limited portions at the end thereof being unoccupied so the body of the element may be distorted to a substantial degree from the line of a blow to be delivered or for storage in a shorter space.

2. In combination, a tool carrying member having a smooth shank portion throughout its length; an impact member in the form of a uniformly coiled element having its convolutions normally in close contact with one another, a portion of said coiled element being secured to the shank portion of said member by the inherent stress of the convolutions of said element whereby the member receives the total impact resulting from the reactive force of each convolution against the other when the coiled element is tensioned and released, the space within the coil element being open and unobstructed except at the end adjacent said shank portion of the tool member so that the coiled element may be distorted to a substantial degree from the line of a blow to be delivered.

3. In combination, a tool carrying member having a smooth shank portion; an impact member in the form of a substantially rectangular coiled element having an inner diameter complemental to said smooth shank portion to secure the tool member to the coiled element by the inherent stress of said coiled element, the convolutions of said impact member being normally in close contact with one another whereby the member receives the total impact resulting from the reactive force of each convolution against the other when the coiled element is tensioned and released, the space within the coil element being open and unobstructed except at the end adjacent said shank portion of the tool member so that the coiled element may be distorted to a substantial degree from the line of a blow to be delivered.

In testimony whereof, I affix my signature.

LOUIS B. EHRLICH.