

C. H. LINDSTEDT & H. TRAVERS.

PUNCHING DEVICE.

APPLICATION FILED FEB. 17, 1913.

1,092,274.

Patented Apr. 7, 1914.

FIG. 1.

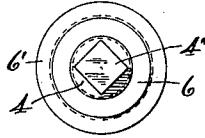


FIG. 2.

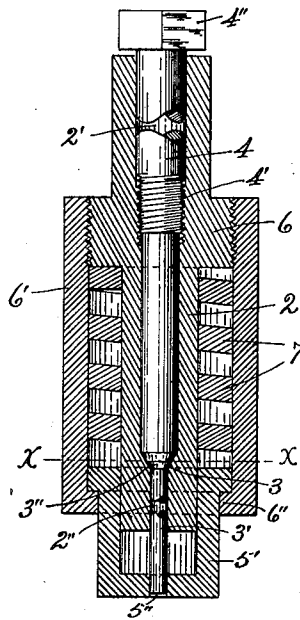
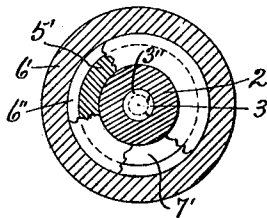


FIG. 3.



Witnesses:

R. S. Wagstaff.
F. W. Beardsley.

Inventors:

Carl H. Lindstedt.
Harry Travers
By Albert C. Tanner
Att'y.

UNITED STATES PATENT OFFICE.

CARL H. LINDSTEDT AND HARRY TRAVERS, OF HOTCHKISSVILLE, CONNECTICUT.

PUNCHING DEVICE.

1,092,274.

Specification of Letters Patent.

Patented Apr. 7, 1914.

Application filed February 17, 1913. Serial No. 748,983.

To all whom it may concern:

Be it known that we, CARL H. LINDSTEDT and HARRY TRAVERS, citizens of the United States, and residents of Hotchkissville, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Punching Devices, which improvements are fully set forth in the following specification.

This invention relates to improvements in constructions of that class quite widely availed of for forming holes in various materials more or less in sheet-form, such constructions being appropriately designated punching devices.

The object of this invention is to provide a punching device which shall be simple and comparatively inexpensive as regards its construction, durable, efficient and reliable in practical service, which shall embody a replaceable element whereby marked economy is insured in the use of the device, and which shall possess certain well-defined advantages over prior analogous constructions.

The invention consists in the combinations, details and parts whereby, together with the novel disposition and relative arrangement of said parts, the attainment of the foregoing object is rendered practicable, all of which will be hereinafter more specifically referred to and set forth in the appended claims.

The invention is clearly illustrated in the accompanying drawing, wherein similar reference characters denote like parts throughout the several views, as to which:

Figure 1 is a top plan view of a punching device embodying our said improvements. Fig. 2 is a central, longitudinal section thereof, the scale being enlarged. Fig. 3 is a cross section of same, along the line $x-x$ of Fig. 2.

In carrying out our invention, reference being had to the accompanying drawing, we essentially make use of a stock 2, having a bore 2' extending continuously therethrough endwise, a portion thereof, as indicated by 2'', being reduced diametrically to form a continuous, annular seat 3; preferably flared upwardly as clearly indicated in Fig. 2. The reduced portion 2'' of the bore 2' is provided to receive a replaceable hole-forming tip 3', which, when in position, projects a suitable distance below the lower end of the stock 2, and, having a head 3'' shaped to engage the flared seat 3, is checked against endwise displacement downwardly therefrom.

The tip 3' nicely fits the reduced portion 2'' of the bore 2', and to firmly secure the same, when positioned as stated, against upward endwise displacement relatively to the stock 2, we provide a fastening spindle 4, which has a threaded engagement with the stock 2, interiorly of the bore 2', and as at the point 4', and is provided at its upper end with a many-sided head or nut 4'', by means of which the same may be duly turned to cause its inner end to bind firmly against the head of the tip 3', thereby locking said tip securely in position for service. Upon the spindle 4 being duly reversely turned, the same may be removed from the bore 2', thus permitting dislodgment of tip 3', and, should the same become damaged in use, or for any reason unfit for service, the substitution thereof of a fresh tip.

5' denotes a cylindrical stripper, generally closed at its lower end, save for a central orifice 5'', said stripper being telescopically mounted on the lower end of the stock 2, with, under proper conditions, its orifice 5'' nicely occupied by the free end-portion of the tip 3'. Hence, stripper 5', being nicely fitted to the stock 2, is not only supported primarily by said stock, and guided thereby for a sliding movement to and fro therealong, but serves by reason of tip 3' being nicely fitted within the orifice 5'', to reinforce the latter, and in such a manner as to markedly prolong its life, particularly when such tip is of comparatively small diameter.

It is essential that the movement of the stripper 5' downwardly on the stock 2 be limited, and also that the same operate on said stock under a pressure exerted elastically thereon downwardly. With a view to the attainment of these ends, we provide the stock 2 with an annular shoulder 6, fitting into, at one end thereof, and having a threaded engagement with, a general cylindrical casing 6'. This casing has, at its opposite end, an inturred lip 6'', forming an opening 7' downwardly through which extends, and outwardly by way of which, from said casing, protrudes, for free to and fro movement on the stock 2, the stripper 5', said stripper having, at its inner end, an annular flange which overlies the lip 6'', whereby its movement downwardly, as along the stock 2, is limited, and the casing 6' being duly adjusted to the threaded shoulder 6.

7 denotes a spring, preferably constructed of flattened material and having a general spiral form, said spring encircling the stock 2, and elastically bearing, upwardly against the shoulder 6 and downwardly against the stripper 5', thereby tending at all times to hold said stripper to the limit of its downward movement on the stock 2, as above defined, and at the same time permitting it to yield upwardly along said stock.

The device is compact, provides for all needful adjustments of its parts, and the operation thereof will be clearly apparent from the foregoing description of same.

It will be seen that our improved punching device is particularly well adapted for the purposes for which it is intended, and further that the same may be modified to a considerable extent without departing from the scope of the appended claims.

We claim:

1. A punching device comprising a stock having a bore varying in diameter to form a seat; a headed hole-forming tip replaceably occupying the reduced portion of said bore, with its head in engagement with said seat, said tip protruding partially endwise from said stock; and means for locking said tip in position, when disposed as stated.

2. A punching device comprising a stock having a bore varying in diameter to form a seat; a headed hole-forming tip replaceably occupying the reduced portion of said bore, with its head in engagement with said

seat; and a fastening spindle, the latter having a threaded engagement with said stock, and adapted, when duly turned, to bear on the head of said tip, and lock the same in position, when disposed as stated, said tip protruding partially endwise from said stock.

3. A punching device comprising a stock; a hole-forming tip supported by, and projecting endwise from, said stock; and an elastically controlled stripper, the latter slidably mounted on said stock and having an orifice in alinement with, and occupied by, the free end-portion of said tip.

4. A punching device comprising a stock having an annular shoulder; a hole-forming tip supported by, and projecting endwise from, said stock; a flanged stripper, slidably mounted on said stock and having an orifice in alinement with, and occupied by the free end-portion of said tip; a casing, adjustably engaging said shoulder, at one of its ends, and having an intumed lip at its opposite end, the flange of said stripper overlying said lip; and a spring, said spring disposed within said casing, between said shoulder and said stripper, and exerting a yielding pressure downwardly on the latter.

CARL H. LINDSTEDT.
HARRY TRAVERS.

Witnesses:

JOSEPH GUILFOIL,
PAUL SUMMA.