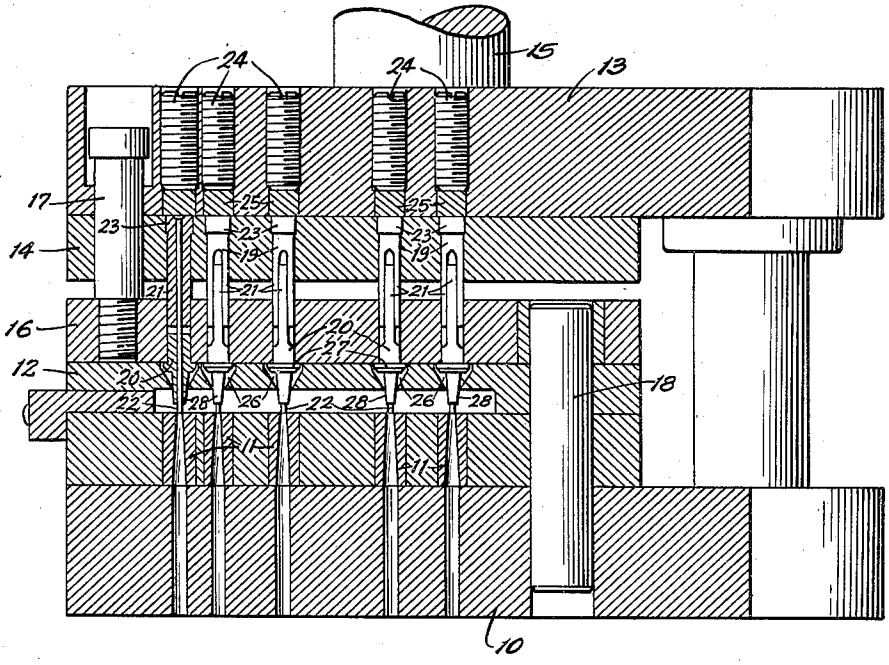
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PUNCH MOUNTING

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## PUNCH MOUNTING

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6 Claims. (Cl. 164—124)

This invention relates to punch mounting and more particularly to a punch mounting for use with a punch press having a fixed stripper plate.

One of the objects of the invention is to provide a punch mounting in which the punch is supported substantially throughout its full length against lateral bending.

Another object of the invention is to provide a punch mounting for use with a punch having a fixed stripper plate in which the end portion of the punch extending between the stripper plate and the work is supported against lateral bending.

The above and other objects and advantages will be more readily apparent from the following description when read in connection with the accompany drawing in which the single figure is a sectional view with parts in elevation of a punch mounting embodying the invention.

The punch illustrated on the drawing comprises a die pad 10 on which one or more dies 11 may be supported. The dies as shown are formed with tapered openings so that the punchings may fall therethrough. A fixed stripper plate 12 is connected to the die pad and is spaced above the dies to provide room for a work piece to be inserted.

Above the stripper plate a punch holder 13 is mounted for movement toward and away from the dies and carries a punch pad 14 in which the punch mounting means are supported. The punch holder is carried by a shank 15 by which it may be connected to a moving part of the press to be moved vertically toward and away from the dies.

Below the punch pad a sleeve holder 16 is supported on bolts 17 loosely connected to the punch holder so that the sleeve holder may have limited movement toward and away from the punch holder. The sleeve holder 16 is held in alignment with the stripper plate and dies by a guide pin 18 secured in the stripper plate and die pad and slidably fitting into an opening in the sleeve holder.

The punch pad is adapted to support one or more punches which are mounted in a manner substantially similar to that described and claimed in my Patent No. 2,108,619. As shown, the mounting comprises a pair of tubular parts 19 and 20 having slidably interfitting prongs 21 to provide telescopic engagement between the parts. The parts are formed with an elongated central opening to receive and support punches 22 which extend through the parts and are adapted to project therebeyond. The part 19 is formed at its upper end with an enlargement 23 in which the upper end of the punch is secured and which is held in place in the die pad by adjustable screws 24. The screws force backing blocks 25 against the upper ends of the punches and mounting parts 19 to hold them securely in place. The lower ends of the mounting parts 20 are secured in openings in the sleeve holder as shown.

The punches 22 are adapted to project through the fixed stripper plate 12 which is formed with tapered openings 26 for this purpose. The mounting parts 20 are formed at their lower ends with enlargements 27 adapted to enter the openings 26 and engage the sides thereof so that downward movement of the parts 20 is limited.

In order to support the punches against lateral bending between the stripper plate 12 and the work piece which is normally spaced below the stripper plate, the mounting parts 20 are provided with reduced hollow extensions 28 which are adapted to extend thru the openings 26 in the stripper plate substantially to the upper surface of the work.

In operation when the punch holder is elevated the sleeve holder 16 will be raised to raise the reduced extensions 28 above the level of the work and to elevate the punches. At this time the work can easily be inserted between the dies and the fixed stripper plate in a position to be punched. Upon lowering the punch holder the extensions 28 will project through the openings 26 in the stripper plate substantially to the upper surface of the work so that the punches are supported throughout their length. Upon further lowering the punch holder the parts 19 and 20 will telescope together causing the lower ends of the punches to punch the work. Upon raising the punch holder the punches and mounting parts will be elevated and the work will be stripped from the punches either by the extensions 28 or by engagement of the work with the stripper plate 12.

While one embodiment of the invention has been shown and described in detail herein, it will be understood that this is illustrative only and is not intended as a definition of the scope of the invention, reference being had for this purpose to the appended claims.

What is claimed is:

1. For use with a punch press having a fixed die, a stripper plate fixed above the die, and a punch pad above the stripper plate movable toward and away from the stripper plate and die, a punch mounting comprising a pair of elongated members having telescopically interengaging

parts for relative longitudinal telescoping movement and formed with a longitudinal punch receiving opening, a punch in said opening supported against lateral bending by said parts, one of the parts and one end of the punch being secured against movement relative to the punch pad, a reduced extension at the end of the other part to support the punch and adapted to extend thru an opening in the stripper plate, and an enlargement on the other part adjacent the upper end of the extension to engage the stripper plate.

2. For use with a punch press having a fixed die, a stripper plate fixed above the die, and a punch pad above the stripper plate movable toward and away from the stripper plate and die, a punch mounting comprising a pair of elongated members having telescopically interengaging parts for relative longitudinal telescoping movement and formed with a longitudinal punch receiving opening, a punch in said opening supported against lateral bending by said parts, one of the parts and one end of the punch being secured against movement relative to the punch pad, the stripper plate having a downwardly tapering opening therein, the other of the parts being engageable with the stripper plate adjacent the opening, and a hollow extension on the other of the parts to extend thru said opening and to support the punch below the stripper plate.

3. For use with a punch press having a fixed die, a stripper plate fixed above the dies, and a punch pad above the stripper plate movable toward and away from the stripper plate and die, a punch mounting comprising a pair of elongated members having telescopically interengaging parts for relative longitudinal telescoping movement and formed with a longitudinal punch receiving opening, a punch in said opening supported against lateral bending by said parts, one of the parts and one end of the punch being secured against movement relative to the punch pad, a locating plate secured to the other of the parts and movable toward and away from the stripper plate, and an extension on the other of the parts projecting beyond the locating plate to extend thru an opening in the stripper plate and support the punch below the stripper plate.

4. A punch mounting comprising a pair of elongated members having telescopically interengaging parts for relative longitudinal telescoping movement and formed with a longitudinal punch receiving opening, a punch fitting in the opening supported against lateral bending by the parts, the ends of the parts being formed for connection to relatively movable punch press elements, and a hollow extension of smaller external diameter than the parts rigid with and projecting beyond one end portion of one of the parts to support the end of the punch where it projects beyond the part.

5. For use with a punch press having a fixed die, a stripper plate fixed above the dies, and a punch pad above the stripper plate movable toward and away from the stripper plate and die, a punch mounting comprising a pair of elongated members having telescopically interengaging parts for relative longitudinal telescoping movement and formed with a longitudinal punch receiving opening, a punch in said opening supported against lateral bending by said parts, one of the parts and one end of the punch being secured to the punch pad, a locating plate secured to the other of the parts and movable toward and away from the stripper plate, and an extension on the other of the parts projecting beyond the locating plate to extend thru an opening in the stripper plate and support the punch below the stripper plate, and a guide member engaging the stripper plate and the locating plate to prevent relative lateral movement therebetween.

6. For use with a punch press having a fixed die, a stripper plate fixed above the dies, and a punch pad above the stripper plate movable toward and away from the stripper plate and die, a punch mounting comprising a pair of elongated members having telescopically interengaging parts for relative longitudinal telescoping movement and formed with a longitudinal punch receiving opening, a punch in said opening supported against lateral bending by said parts, one of the parts and one end of the punch being secured to the punch pad, a locating plate secured to the other of the parts and movable toward and away from the stripper plate, and an extension on the other of the parts projecting beyond the locating plate to extend thru an opening in the stripper plate and support the punch below the stripper plate, and an elongated guide pin secured to the stripper plate and extending slidably thru an opening in the locating plate.

JACOB A. SMITH.