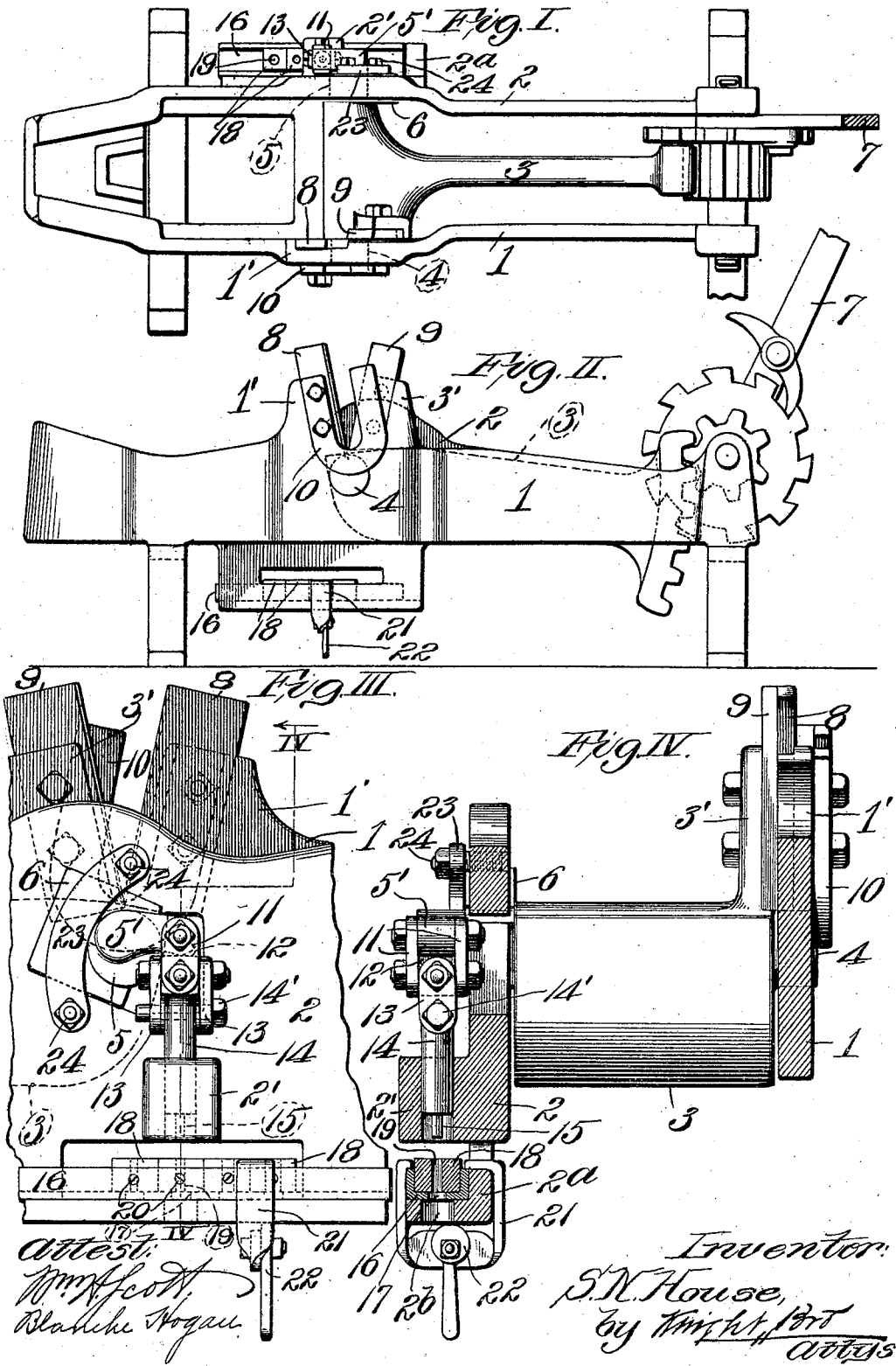


No. 848,552.

PATENTED MAR. 26, 1907.

S. N. HOUSE.  
ATTACHMENT FOR COLD TIRE SHRINKING MACHINES.  
APPLICATION FILED DEC. 12, 1905.



# UNITED STATES PATENT OFFICE.

SAMUEL NELSON HOUSE, OF ST. LOUIS, MISSOURI.

## ATTACHMENT FOR COLD-TIRE-SHRINKING MACHINES.

No. 848,552.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed December 12, 1905. Serial No. 291,453.

*To all whom it may concern:*

Be it known that I, SAMUEL NELSON HOUSE, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Attachments for Cold-Tire-Shrinking Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to the provision, in connection with a cold-tire-shrinking machine of the character of that illustrated in United States Letters Patent issued to me November 28, 1905, No. 805,798, of metal cutting shear and punch mechanisms by which the machine is made to include the advantageous features of metal-shearing members and metal-punch members, all of which are of great value in a cold-tire-shrinking machine.

Figure I is a top or plan view of my machine. Fig. II is a side elevation of the machine. Fig. III is an enlarged side elevation looking at the punch-mechanism side of the machine. Fig. IV is a vertical cross-section taken on line IV IV, Fig. III.

1 and 2 designate, respectively, the side walls of the frame of my machine.

3 designates a power-lever which is provided with trunnions 4 and 5, that are journaled, respectively, in the frame side walls 1 and 2. The trunnion 4 is preferably journaled directly in the frame side wall 1, while the trunnion 5 is journaled in a box 6, loosely seated in the side wall 2 in order that it may be shifted laterally for a purpose to be hereinafter mentioned.

7 is a hand-lever journaled in the frame of the machine and geared to the power-lever 3 in a suitable manner, such as that illustrated in my patent hereinbefore mentioned.

No invention *per se* is herein claimed for the parts thus far described, they being practically of the same construction that is illustrated in said patent.

The frame side wall 1 is provided with an upwardly-extending lug 1'. This lug has attached to it a shear-blade 8, the cutting edge of which faces forwardly, as seen most clearly in Figs. II and III. The power-lever 3 is provided with an upwardly-extending arm 3' located at the side of said lever that is adjacent to the side wall 1. This arm has fixed to it a shear-blade 9, the cutting edge of which faces rearwardly, or in a direction to-

ward the cutting edge of the shear-blade 8. It will be seen that when the power-lever is operated the shear-blade 9 carried thereby may be moved toward the fixed shear-blade 8 and shearing action be produced between said blades on a piece of metal, such as a vehicle-tire introduced between the blades.

10 is a guide, preferably of U shape, that is fixed to the frame side wall 1 adjacent to the shearing-blades and into which the piece of metal to be cut may be laid and held. The frame side wall 2 is provided at its outer side and adjacent to its lower edge with a projecting guide member 2', that is located at a lower level than the trunnion 5 of the power-lever that passes through the side wall 2, but which is out of vertical line with the axis of said trunnion. The trunnion 5 is provided with a crank-arm 5', that extends into a position above the guide member 2' and has pivoted to it a pair of depending links 11. Interposed between the links 11 is a block 12, located immediately beneath the outer end of the crank-arm 5' and pivotally connected to said links.

13 are links arranged at right angles to the links 11 and having their upper ends pivotally connected to the block 12, whereby in combination with said first-named links a universal connection is provided for the part that is to be operated through the medium of the crank-arm.

14 designates a punch that operates loosely in the guide member 2' and the upper end of which is detachably connected to the lower links 13 by a key 14'. This punch carries a punch-point 15. The object in detachably connecting the punch to its supporting-links is to permit of the interchange of punches having points of varying diameters for use in punching holes of various sizes. Located beneath the guide member 2' and the bottom of the frame side wall 2 is a ledge 2<sup>a</sup>, that is preferably supported by said side wall. This ledge is provided with a vertical perforation 2<sup>b</sup>, that is located immediately beneath the perforation in the guide member in which the punch 14 operates, said perforation being of sufficient diameter to permit of the punch being withdrawn and inserted therethrough when it is detached from its supporting-links.

16 designates a channel die-holding bar that rests upon the ledge 2<sup>a</sup> and is provided with a plurality of perforations 17 of sufficient dimensions to permit the largest punch-

point 15 used in the machine to pass there-through.

18 designates a series of die-blocks seated in the die-holding bar 16. These blocks are provided with punch-holes 19 of various dimensions, the punch-hole in each die-block being different in size from that in either of the other die-blocks. The die-blocks are held from movement in the die-holding bar by fastening-screws 20, (see Fig. III,) that pass through one of the side walls of said bar and engage in the die-block.

21 designates a clamp-yoke the arms of which embrace the ledge 2<sup>a</sup> and the upper ends of which are turned inwardly, as seen in Fig. IV, so that they engage the upper edges of the side walls of the die-holding bar 16. This clamp-yoke has pivoted to it a cam-lever 22, that is adapted to be shifted for the purpose of drawing the inturned ends of the yoke-arms firmly to the die-holding bar to hold it from movement on the ledge 2<sup>a</sup>. When the clamp-yoke is in loosened condition, the die-holding bar may be readily shifted longitudinally on its supporting-ledge and again clamped to hold it in any desired position in order that the point of the punch in use in the machine may operate into the die-block having a hole corresponding to the size of the particular punch.

For the purpose of compensating for the wear caused by the action of the shear-blades 8 and 9 against each other I provide a pressure-bar 23, that is movably supported against the outer face of the journal-box 6 by set-screws 24, which are seated in the frame side wall 2. When the shear-blades become worn, the set-screws 24 are adjusted inwardly, thereby forcing the pressure-bar 23 against the journal-box 6 and causing said journal-box to be shifted laterally in the side wall 2 to exert pressure against the facing end of the head of the power-lever 3, with a result of causing the shear-blade 9, carried by said lever, to be carried into a position that will place its cutting edge in the proper cutting line relative to the cutting edge of the frame-supported shear-blade 8.

It will be understood from the foregoing description that both the shears and punch of the machine are operated through the medium of the power-lever 3.

I claim as my invention—

1. The combination with a frame-wall of a tire-shrinking machine, of a shear-blade fixed to said frame-wall, a power-lever journaled to said frame-wall, a shear-blade fixed to said power-lever, and means for shifting said power-lever laterally, substantially as set forth.

2. The combination with the frame side walls of a tire-shrinking machine, of a movable journal-box in one of said side walls, a power-lever having trunnions, one of which is journaled in said journal-box, a shear-

blade fixed to one of said side walls, a shear-blade fixed to said lever, and means for moving said journal-box to shift said lever laterally, substantially as set forth.

3. The combination with the frame side walls of a tire-shrinking machine, of a movable journal-box in one of said side walls, a power-lever having trunnions, one of which is journaled in said journal-box, a shear-blade fixed to one of said side walls, a shear-blade fixed to said lever, a pressure-bar arranged to bear against said journal-box, and set-screws passing through said pressure-bar and seated in the frame side wall in which said journal-box is located, substantially as set forth.

4. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion provided with a crank-arm, a punch connected to said crank-arm, a plurality of independent dies to which said punch is adapted to be moved, and shiftable means on which said dies are loosely seated, substantially as set forth.

5. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion provided with a crank-arm, a punch detachably connected to said crank-arm, a shiftable die-holder located beneath said punch, and a plurality of independent dies supported by said die-holder, substantially as set forth.

6. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion provided with a crank-arm, a punch suspended from said crank-arm and arranged to operate in said guide member, a channeled die-holder shiftable supported beneath said guide member, and a plurality of dies loosely seated on said die-holder, substantially as set forth.

7. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion extending through said side wall and provided with a crank-arm, a pair of links pivoted to said crank-arm, a block interposed between said links, a second pair of links pivoted to said block, a punch pivoted to said second pair of links, a shiftable die-holder located beneath said punch, and a plurality of dies carried by said die-holder, substantially as set forth.

8. The combination with a frame side wall of a tire-shrinking machine, of a power-lever having a trunnion provided with a crank-arm, a punch connected to said crank-arm, a shiftable die-holder located beneath said punch, a plurality of independent dies loosely seated on said die-holder, and means for holding said die-holder in set positions, substantially as set forth.

SAMUEL NELSON HOUSE.

In presence of—

NELLIE V. ALEXANDER,  
BLANCHE HOGAN.