

(No Model.)

2 Sheets—Sheet 1.

F. L. WHITE.
MACHINE FOR SEPARATING CHAIN LINKS.

No. 499,901.

Patented June 20, 1893.

Fig. 1.

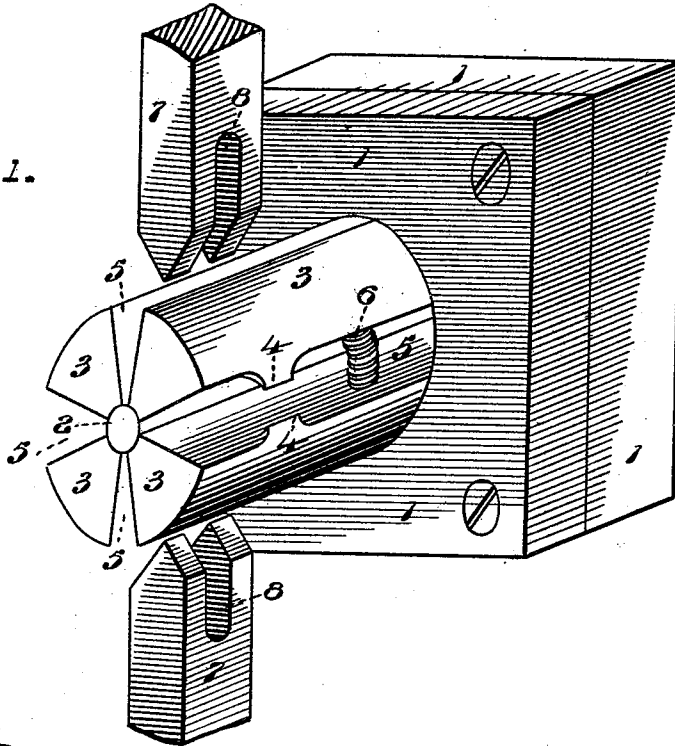
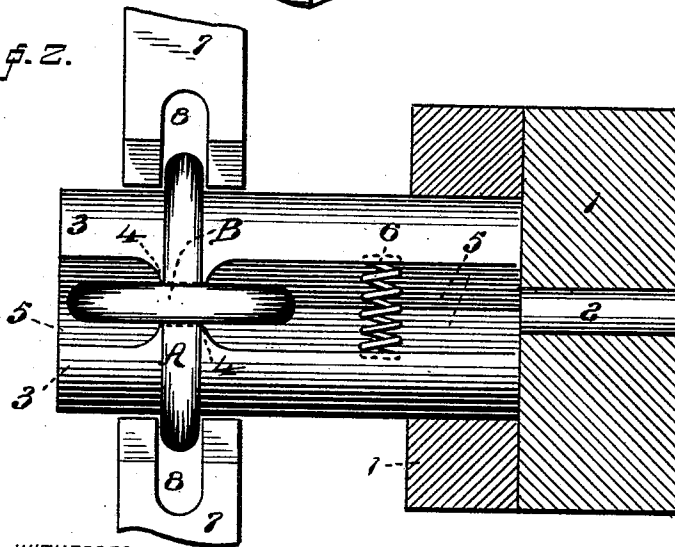


Fig. 2.



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ATTORNEY

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Fig. 3.

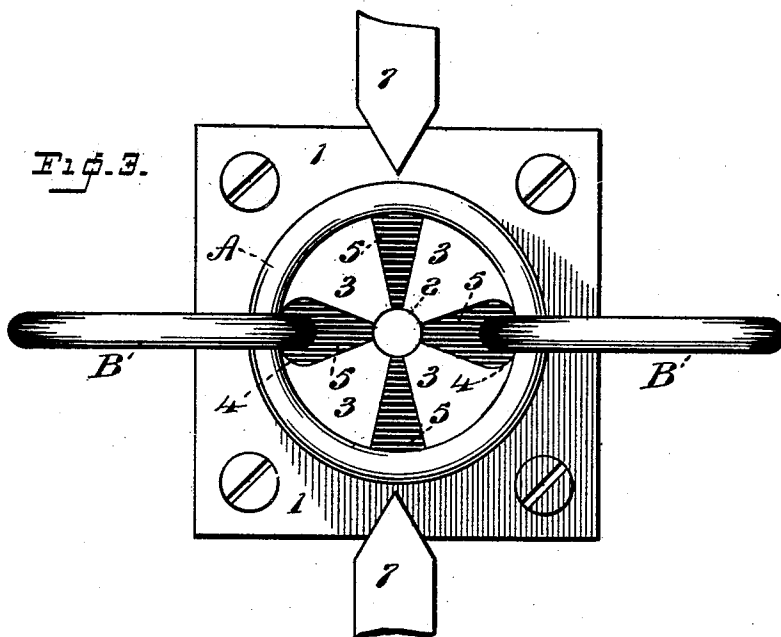
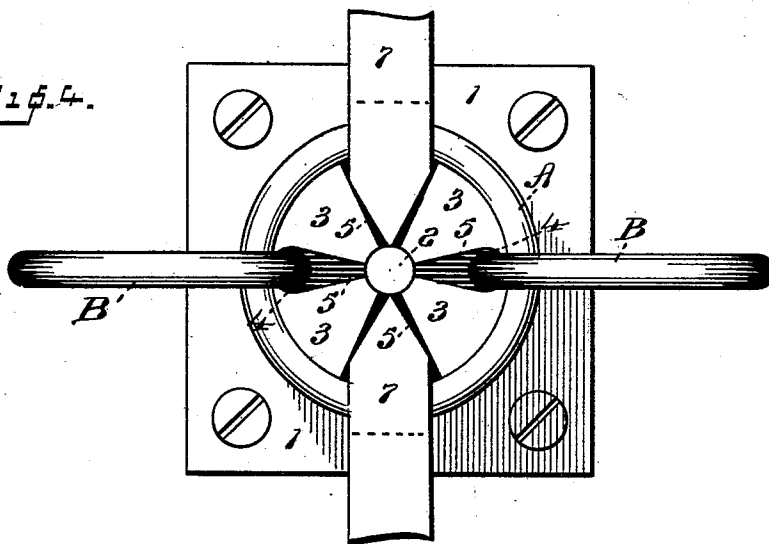


Fig. 4.



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UNITED STATES PATENT OFFICE.

FREDERICK L. WHITE, OF MILWAUKEE, WISCONSIN.

MACHINE FOR SEPARATING CHAIN-LINKS.

SPECIFICATION forming part of Letters Patent No. 499,901, dated June 20, 1893.

Application filed July 11, 1892. Serial No. 439,624. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK L. WHITE, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Machines for Separating Links of Chain; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain novel and useful improvements in machine tools for severing or separating links of chain from a blank which has been rolled or otherwise formed into approximately the shape of a length of chain, except that the several links are connected or joined at their points of intersection.

The object of my invention is to provide a machine tool whereby the links may be severed and separated from each other without any waste of metal and with the certainty that each joining section of metal between the links shall as nearly as possible be cut at its exact center, thereby leaving the severed links of the same diameter; and with these ends in view my invention consists and resides in the construction and combination of elements hereinafter fully explained and then recited in the claims.

In order that such persons as are skilled in the art to which my invention appertains may fully understand its construction and method of operation, I will proceed to describe the same in detail, reference being had to the accompanying drawings which form a part of this specification, and in which—

Figure 1, shows my invention in perspective; Fig. 2, in side elevation; Fig. 3, in end elevation with the chain link in position preparatory to being cut; Fig. 4, a similar view, but showing the cutting operation as completed.

The same numerals and letters of reference denote the same parts in each of the figures.

By the numeral 1 I denote a block which forms the base of the tool shown in the drawings, and this block may form a part of a large and organized machine, or it may be supported in any other suitable manner according to the work to be done. This block has therein a

cylindrical socket whose shape and size may be readily gathered from an inspection and comparison of Figs. 1 and 2, and at the center of this socket a diminished opening of circular section extends through or deeply into the block. In this last-named opening is firmly seated a rod 2 round in cross section and projecting outward at right angles to the face of the block to a considerable distance. Around this rod and with their inner ends seated in the recess above referred to are four sector-shaped jaws 3 each of which, as will be readily understood from the drawings, has an interior bearing against the rod 2 and an outer bearing against the wall of the socket in the block. The sectional shape of these jaws is somewhat less than a quadrant for the purpose of leaving space through which they may rock upon the inner and outer bearings just referred to, so as to accomplish their cutting operation. Each of the jaws 3 is provided with a cutting tooth 4, each tooth being arranged opposite to a complementary tooth so that they form two pairs, one upon each side of the cylindrical portion of the tool, as clearly appears at Fig. 3. Each of the jaws is recessed behind and at the sides of its tooth so as to form an open space, which is designated by the numeral 5 and which is adapted to accommodate certain portions of the chain which is to be severed or articulated.

Between each pair of tooth-bearing jaws is interposed any usual or ordinary spring 6 whereby said jaws are normally kept separated, and whereby they are separated after each cutting operation to allow of the free removal of the pieces operated on.

For the purpose of separating the jaws and driving the cutting teeth together I provide a pair of wedges 7, and for the purpose of equally distributing the closing strain I prefer that these wedges should be bifurcated, as shown at 8, thereby making the wedge double-faced.

In the operation of my invention the cylindrical portion of the tool is inserted through a chain link, which in Figs. 2, 3 and 4 is designated by A, and this brings the ends of the adjacent links on either side, which are denoted by B, within the field of action of the cutting teeth. When the link has thus been placed in position, the wedges 7 are driven

downward between the adjacent faces of the jaws shown at the top and bottom of Figs. 3 and 4 in such manner as to separate them and thereby force the cutting teeth of both pairs of jaws together and cause them to sever the connection between the links A and B, and thereby convert the stiff bar into a true chain having articulated links. After the cutting operation the wedges are withdrawn and the jaw sections are returned by the springs to their normal position, as shown at Figs. 1 and 3.

I have shown the tool as operating in connection with circular links, but of course it will be readily understood that its use is not limited to links of that specific shape, but that links having a considerable elongation might be cut by a tool having its parts modified in accordance with the work to be done by it.

In the operation of the tool it is immaterial whether the link is moved up to and over the cylindrical portion of the tool, or whether the link is held fast and the tool passes into it, since the operation is in both cases the same. By the use of the bifurcated wedge the power is applied equally on both sides of the link over which the open portion of the wedge descends. By this means the strain is equalized and a certain portion thereof is sustained by the link itself which serves as a binder and guide for the jaws, and this to some degree relieves the strain upon the socket.

In this my invention I do not wish to be confined to the exact details of construction herein shown and described, since many minor changes and variations may be made therein without departing from the essentials of my invention.

I claim—

1. In a device of the character described, the combination of two pairs of jaws each provided with a pair of cutting teeth and having their exterior contour conformed to the interior of a chain link, of means for separating said jaws and driving together the teeth thereon, substantially as described.

2. In a device of the character described, the combination of two pairs of jaws, each of which is approximately a sector in cross section, of two pairs of cutting teeth carried by said jaws, a socket or bearing in which said jaws are seated and may rotate, and means as described for separating said jaws to effect the approach of the cutting teeth, substantially as described.

3. In a device of the character described, the combination of the two pairs of jaws shaped in cross section substantially as described, a central bearing against which said jaws abut, an outer bearing in which said jaws are seated, and a pair of wedges for separating said jaws to effect the cutting operation.

4. In a device of the character described, the combination with the two pairs of jaws having cutting teeth as described, of a central bearing rod against which said jaws abut, a socket wherein said jaws are held, springs for the separation of the cutting teeth, and means as described for rocking the jaws upon their central bearing, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK L. WHITE.

Witnesses:

C. T. BENEDICT,

J. M. C. BENEDICT.