

(No Model.)

J. V. MUEHLIG & F. N. SLADE.
DRIVING AND CUTTING CHAIN.

No. 496,529.

Patented May 2, 1893.

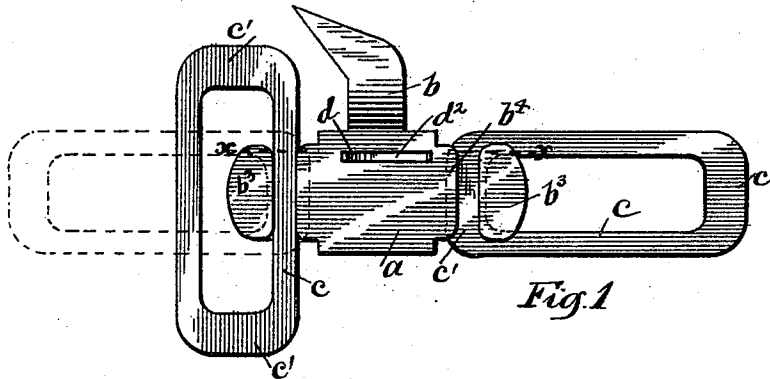


Fig. 1

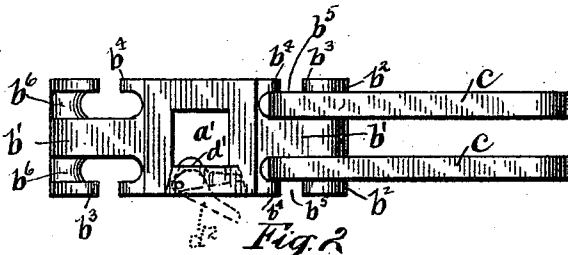


Fig. 2

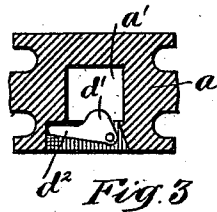


Fig. 3

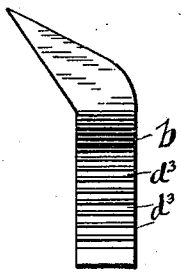


Fig. 5

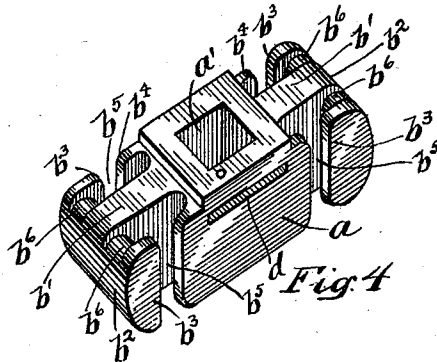


Fig. 4

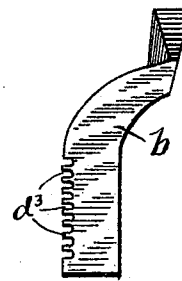


Fig. 6

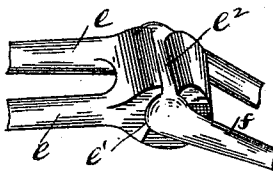


Fig. 7

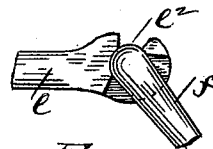


Fig. 8

WITNESSES:

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DRIVING AND CUTTING CHAIN.

SPECIFICATION forming part of Letters Patent No. 496,529, dated May 2, 1893.

Application filed May 13, 1892. Serial No. 432,875. (No model.)

To all whom it may concern:

Be it known that we, JOHN V. MUEHLIG, of Chicago, Cook county, Illinois, and FRANK N. SLADE, of Columbus, Franklin county, Ohio, both citizens of the United States, have invented a certain new and useful Improvement in Driving and Cutting Chains, of which the following is a specification.

Our invention relates to the improvement of driving and cutting chains and the objects of our invention are, to provide a strong, durable and reliable chain of this class of superior construction and arrangement; to so construct the same as to admit of the links thereof, being readily separated when desired and at the same time prevent the separation of said links when the chain is in use; to provide in connection with said chain, an improved tool-holding link; the latter being constructed with superior means for retaining the tool in place; to admit of our improved chain being constructed at a slight expense and to otherwise produce a desirable chain for mining and gearing purposes. These objects we accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of three links of our improved chain, showing one of said links in position for detachment. Fig. 2 is a side elevation. Fig. 3 is a sectional view through a portion of the tool-holding links taken on the plane indicated by line $x x$ of Fig. 1. Fig. 4 is a detail view in perspective of my improved tool-holding link. Fig. 5 is a view in elevation of one of the cutting tools. Fig. 6 is a view of a cutting tool taken at right-angles with the view shown in Fig. 5. Fig. 7 is a view in perspective of a modified form of chain embodying our improvement or a portion thereof and Fig. 8 is a side elevation of the chain joint employed in the modification shown in Fig. 7.

a represents one of the tool-holding links which has the general form of an oblong block. The central portion of this block is provided on one side with a tool-socket a' which is adapted to receive the shank of a suitable cutting tool b , said shank being firmly held therein, as described. From this tool-holding portion of the link project in opposite directions central tongue extensions b' , the en-

larged transverse heads or outer ends b^2 of which are in alignment with the upper and lower sides of the link body. The upper and lower ends of the tongue heads b^2 project a short distance inwardly in the direction of the length of the tongue body, forming lips b^3 . The upper and lower sides of the tongue body a or tool holding portions thereof, are also provided with short lips or extensions b^4 which project outwardly toward the lips b^3 . These lips b^3, b^4 are thus arranged at such distance apart as to form transverse entrances or ways b^5 to the spaces adjoining the tongues b' . Adjoining the outer end of each of the tongues b' , the heads b^2 are cut away slightly at opposite points to form short channels or notches b^6 between the lips b^3 and tongues b' .

c represents the coupling links which are of the ordinary oblong link form, with the exception that each of said links has its short end portions of greater width than its longer sides as shown at c' . These coupling link sides are of such width as to admit of their being inserted within the ways b^5 formed as hereinbefore described, between the link lips b^4, b^3 .

In constructing our improved chain, two of the links a are connected by two parallel coupling links c . In making this connection, the coupling links are supported in the position indicated for one of the links shown in Fig. 1 of the drawings, that is, so that they extend in a direction at right-angles with the link a , in which position the side arms of the coupling links are inserted through the ways b^5 of the links a , after which said coupling links are turned in the direction of the length of the link a , thus bringing their enlarged or widened ends c' into such position that they are overlapped sufficiently by the tongues b^4, b^3 to prevent their escape through the entrance ways b^5 . The distances between the long arms of the coupling links are such that when said coupling links are turned to the last described position, said longer arms thereof, will rest within the head notches b^6 . In forming each of the links a , we provide in the upper side of the body thereof, a longitudinally arranged slotted opening or mortise d which although of greater length than the width of the socket a' communicates with the

latter, near the upper portion thereof. Within this mortise d , near one end thereof, we pivotally support the cam-shaped and inwardly projecting head d' of a locking or pressure lever d^2 . On that side of the tool shank, which, when the tool is inserted adjoins the slotted opening d , we form a series of transverse grooves or notches shown at d^3 . The lever d^2 being drawn outward to the position shown in dotted lines in Fig. 2 of the drawings, or until its cam-shaped projection d' is without the socket a' , the shank of the tool b is adjustably inserted in said socket when the lever handle may be pressed inward until its rounded head d' is firmly engaged with the desired one of the notches or grooves d^3 of the tool shank. In this manner, said tool is firmly locked in its position within the socket of the link a .

From the construction herein shown and described, it will be seen, that an exceedingly strong and durable chain is provided which may be utilized for both driving and cutting purposes and that the construction is such as to admit of the links being interchangeable or detachable and to admit of the production of the chain at a low cost of manufacture.

It will be seen that the means of coupling herein provided are such, as to prevent the links of the chain separating or becoming detached, one from the other, unless the coupling and tool links are turned at right-angles with each other, thus obviating any tendency toward the separation of the links while the chain is in use.

As shown in Figs. 7 and 8 of the drawings, it is evident that a chain for ordinary purposes may be produced in which is embodied the principle involved in connecting and de-

taching the links above described. In these last named views, e represents a link which may be substituted for the link a hereinbefore described, said link e being provided at each end with a transverse bearing seat e' to which an entrance is gained through a narrow mouth or way e^2 . f represents the connecting link, which as prescribed for the links c above mentioned, is provided with enlarged end portions and is adapted to be connected with the link e by the insertion of one of the smaller side arms through the entrance e^2 .

Having now fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a chain, the combination of the links a , end tongue extensions b' thereon, link recesses on opposite sides of each of said tongue extensions, entrances to said recesses of less width than the latter formed as described by the projecting lips b^3 b^4 , channels or depressions b^6 formed as described between the outer ends of said lips and the bodies of said tongues, a cutting link c having enlarged end portions and adapted to be engaged horizontally as described with said recesses, substantially as 65 and for the purpose specified.

2. In a chain, the combination with the tool link a , tool socket a' and mortise d therein, of cam-lever d^2 pivoted in said mortise and a tool b having grooves d^3 in its shank, with which said cam-lever head is adapted to engage, substantially as and for the purpose specified.

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In presence of—

C. C. SHEPHERD,
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