

July 31, 1945.

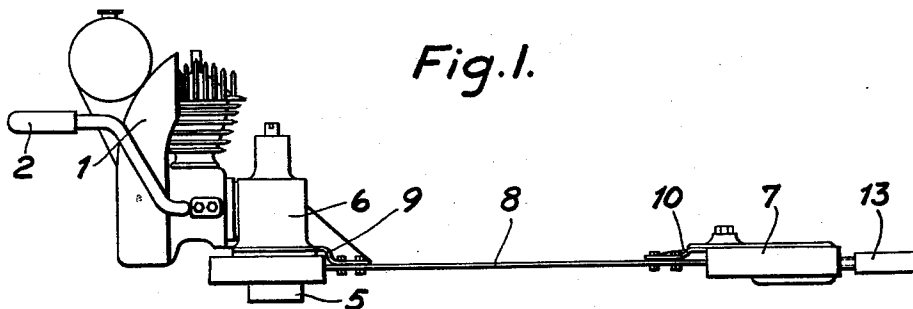
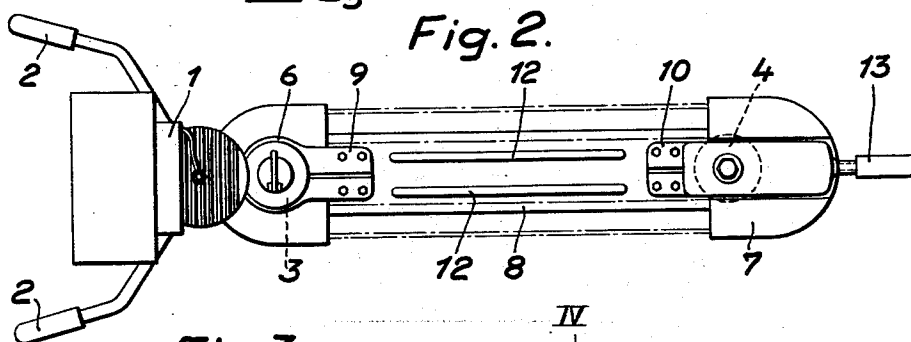
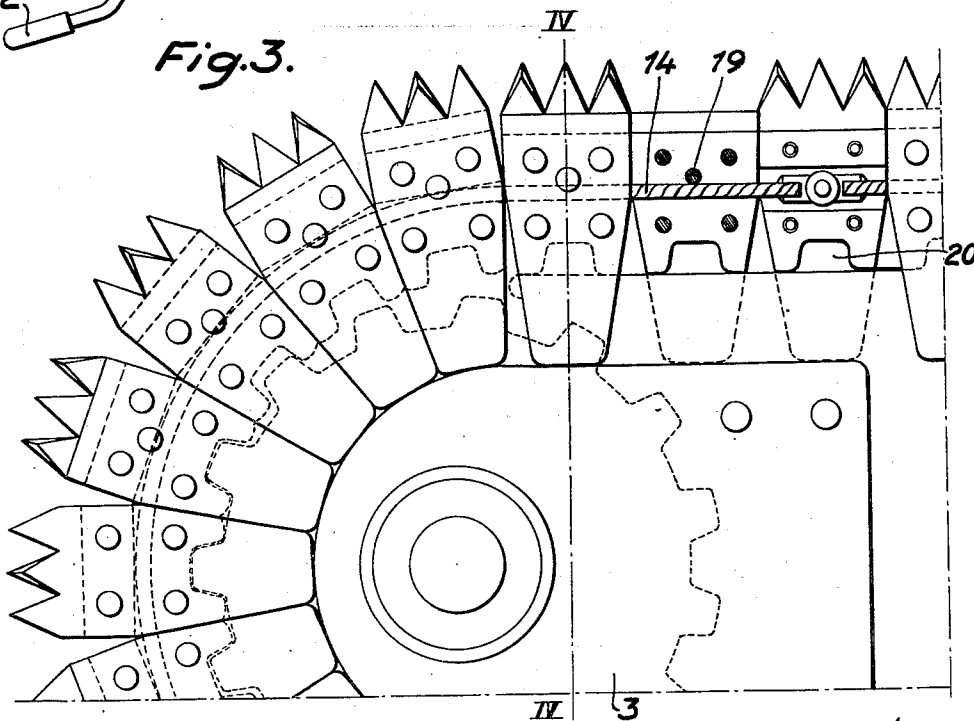
C. G. HARD AF SEGERSTAD

2,380,753

DEVICE IN MOTOR SAWS

Filed Dec. 31, 1941

2 Sheets-Sheet 1



Inventor,
Carl Gustaf Hård Af Segerstad

by *Glascok Downing & Seibold*
Attys.

July 31, 1945.

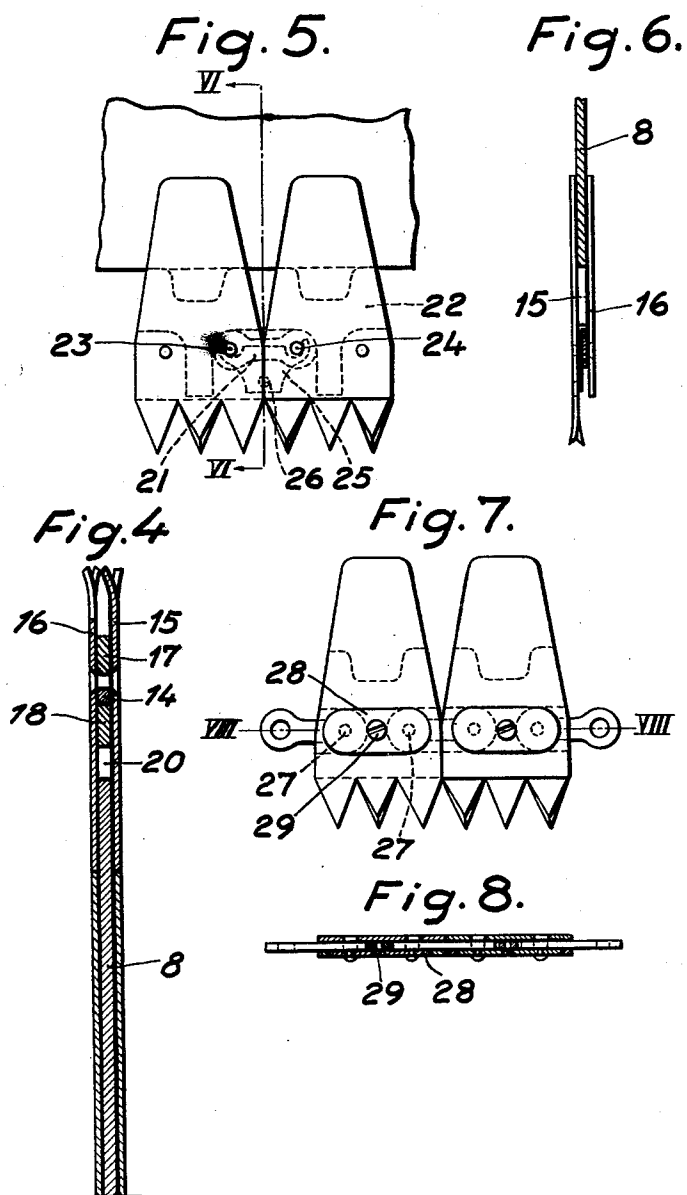
C. G. HARD AF SEGERSTAD

2,380,753

DEVICE IN MOTOR SAWS

Filed Dec. 31, 1941

2 Sheets-Sheet 2



Inventor,

Carl Gustaf Hård Af Segerstad

By: Glascock Downing & Seebald
Attys.

UNITED STATES PATENT OFFICE

2,380,753

DEVICE IN MOTOR SAWS

Carl Gustaf Hård af Segerstad, Sandviken,
Sweden, assignor to Sandvikens Jernverks
Aktiebolag, Sandviken, Sweden

Application December 31, 1941, Serial No. 425,223
In Sweden November 22, 1940

2 Claims. (Cl. 143—135)

The present invention relates to a device in such motor saws for felling trees, crosscutting logs and the like as consist of an endless chain composed by a plurality of saw elements and adapted to run around two wheels located at either end of the motor saw, one of said wheels being motor driven and serving as driving member for the chain, the latter being guided by a guide rail provided between the wheels. The invention is substantially characterized in that the saw element consists of two plates provided right opposite each other on either side of intermediate bodies, one of the plates having saw teeth while the other serves as supporting plate, the plates being further arranged alternately in such a manner that every second plate in one row serves as supporting plate while the other are saw plates.

Some embodiments of the invention are illustrated in the accompanying drawings, in which

Fig. 1 is a side view of the motor saw,

Fig. 2 is a top view of the same,

Fig. 3 shows a detail on a larger scale of the chain,

Fig. 4 is a cross section taken on the line IV—IV in Fig. 3,

Fig. 5 shows a detail of the chain,

Fig. 6 is a cross section taken on the line VI—VI in Fig. 5,

Fig. 7 shows a further detail of the chain, and

Fig. 8 is a longitudinal section taken on the line VIII—VIII in Fig. 7.

Referring to the drawings, reference numeral 1 designates the motor aggregate with its fuel-tank and with two handles 2 fixed to it. Of course an electro-motor may be used instead, in which case the fuel-tank is dispensed with. The motor aggregate is turnably connected with the rest of the saw. The latter consists of an endless chain running around two wheels 3 and 4 provided at the ends of the motor saw. One of the wheels is given the shape of a chain wheel and connected with the motor shaft by means of a disengaging device 5. The chain wheel 3 as well as the necessary driving members are enclosed in a casing 6. The other wheel is enclosed in a protective casing 7. Between the wheels there is provided a guide rail 8, which is fixed to the casings 6 and 7 by means of supporting elements 9 and 10. The guide rail 8 may preferably be provided with longitudinal ridges 11 and 12 so as to increase the stiffness of the rail. In order to control the tension of the chain there is provided at the casing 7 a stretching device 13, which may also serve as a handle. The motor aggregate can be turned 90° around the longitudinal axis of the motor

saw relatively to the plane of the chain and the guide rail. In both positions the aggregate can be locked relatively to the casing 6.

The endless saw chain may consist of an endless steel cord 14, to which a plurality of saw elements are fixed. These elements may be composed as shown in Figs. 3 and 4. Two plates 15 and 16 enclose two intermediate bodies 17 and 18, the plate 15 being provided with saw teeth. The plates and the bodies are joined, for example by means of rivets. Between the bodies there is an interstice, which is intended for the steel cord 14. By means of a turnable locking peg 19 or the like, which, for example, is eccentrically mounted, the saw element is fixed to the cord. That edge of the body 18 which contacts with the steel cord is rounded off so as to facilitate its running around the chain wheel. Moreover, said body is provided with a recess 20 corresponding to the teeth of the chain wheel and intended for engagement with the same. The plates 15 and 16 have such length that they partly embrace the guide rail 8, the latter thereby supporting and guiding the saw elements.

The endless chain may also consist of saw elements only, which are connected with one another by means of links 21. See Figs. 5 and 6. In this case the saw elements enclose only one intermediate body 22, the latter being provided with recesses for the links and the teeth of the chain wheel. The upper surface of the intermediate body may be formed so as to serve as dust removing member. The shafts 23 and 24 of the link are preferably locked by means of a plate 25 having an aperture 26 to be engaged by a tool when the plate is to be removed. Figs. 7 and 8 show another way of locking the link shafts. These shafts have a varying diameter and are locked at the smallest end 27 by means of a plate 28 which is inserted into a recess in one of the plates enclosing the intermediate body. The plate 28 may be fixed by means of a screw 29 which is preferably secured by means of a centre-mark.

Thanks to the device described the motor saw differs from other saws operating according to the same chain principle by a considerably greater output of work at the same power consumption and a decrease of weight amounting to 20–25%. This is of importance in portable motor saws with total weights of 25–30 kg. In addition to its low weight and its lower operating costs the device according to the invention involves also the advantage that the saw teeth may be punched, sharpened and set according

to the same principles as in usual saws. Moreover, the device according to the invention needs a smaller applying force relatively to the working piece than common saw types, the saw being thereby more easily handled and less tiring in operation.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a motor driven cutting chain, a plurality of saw elements each including an intermediate flat body, plates arranged on opposite sides of said body, each body and the related plates being rigidly connected to form together a rigid unit, both plates projecting from one end of said body in spaced relation for embracing a

guide and one of the plates at the opposite end of said body being extended beyond the other plate and provided with saw teeth, said flat body extending across the entire width of each plate adjacent the base of the saw teeth, the first mentioned end of said body being disposed to move in proximity with the edge of said guide.

2. A motor driven cutting chain as claimed in claim 1, wherein said body is divided into two spaced parts, a flexible coupling member extending through the spaces between the body parts and means carried by said plates for engaging and clamping said flexible member against the intermediate body.

CARL GUSTAF HARD and SEGERSTAD.