

No. 640,391.

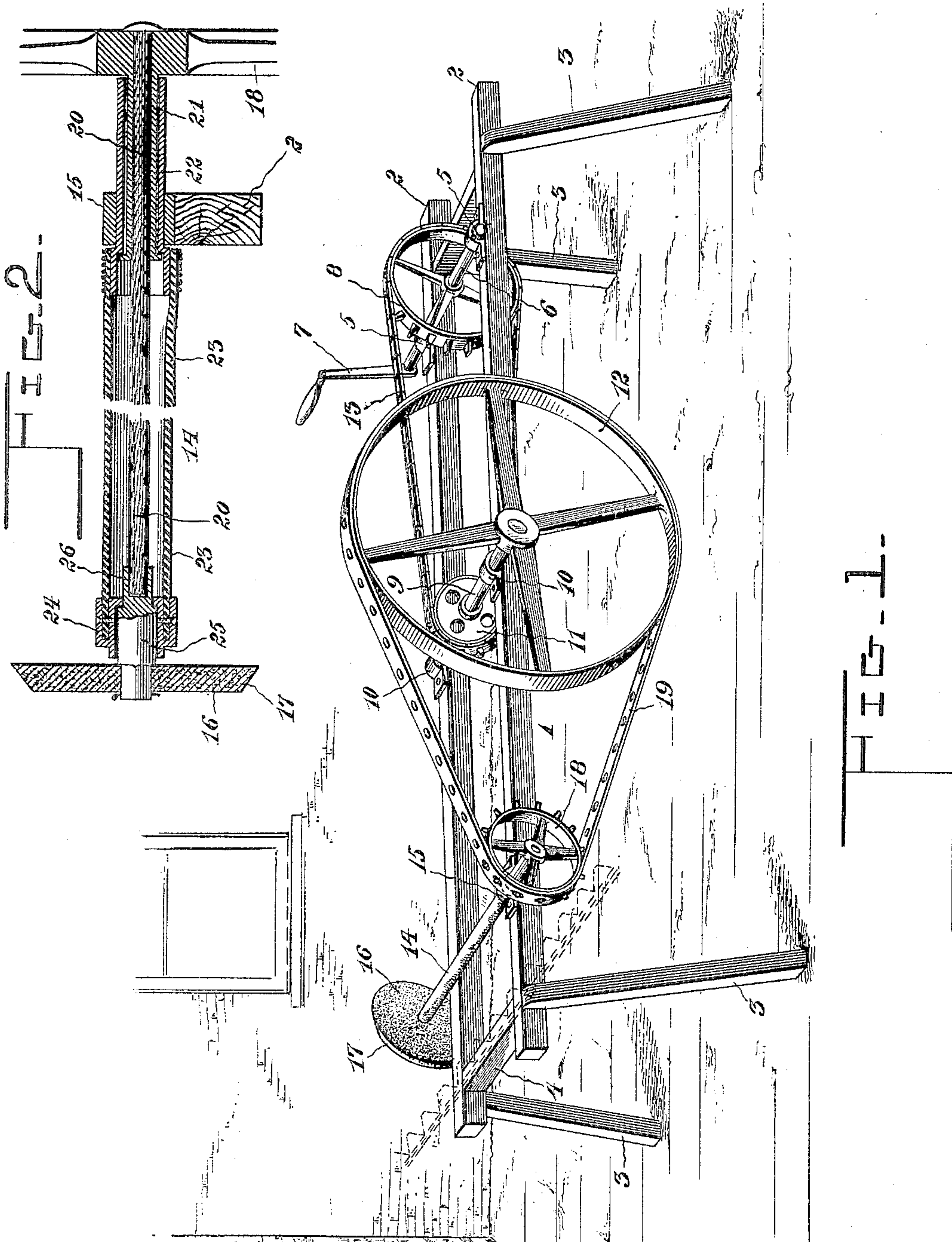
Patented Jan. 2, 1900.

C. LAUE.

MACHINE FOR SHARPENING SICKLES.

(Application filed Sept. 7, 1899.)

(No Model.)



Witnesses

John T. Deufferwiel
Chas. T. Hoyer.

By his Attorneys,

Inventor Charles Laue,

Cashow & Co.

UNITED STATES PATENT OFFICE.

CHARLES LAUE, OF ALMA, WISCONSIN.

MACHINE FOR SHARPENING SICKLES.

SPECIFICATION forming part of Letters Patent No. 640,391, dated January 2, 1900.

Application filed September 7, 1899. Serial No. 729,770. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LAUE, a citizen of the United States, residing at Alma, in the county of Buffalo and State of Wisconsin, have invented a new and useful Machine for Sharpening Sickles, of which the following is a specification.

This invention relates to machines for sharpening the sickles of binders, mowers, or reapers, and has for its object to provide a simple, effective, and compact device for this purpose whereby the knives of the sickle-bar can be easily ground similarly and fully back to the bar and to include in the organization of the machine a flexible shaft carrying an emery-wheel or analogous device on the free end thereof which can be directed at any angle, and thereby render the operation of sharpening sickles exceptionally convenient.

Other objects and advantages will appear in the subjoined description and be hereinafter embodied in the claims in the form of novel structural features, and the preferred arrangement of parts is illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of the machine embodying the features of the invention. Fig. 2 is a section through the flexible shaft, the emery-wheel thereon, and a part of the driving devices therefor.

Similar numerals of reference are employed to indicate corresponding parts in the views.

The numeral 1 designates the frame, comprising opposite longitudinally-disposed side bars 2, arranged in parallel relation and having supporting-legs 3, the said side bars being connected at both ends by cross-ties 4. On the bars 2 in suitable boxes 5, fixed to the latter, is journaled a driving-shaft 6, provided with an operating-crank 7 and having fast thereon, between the bars 2, a sprocket-wheel 8. In advance of the shaft 6 a shaft 9 is also journaled in boxes 10 on the bars 2 and has secured thereto a sprocket-wheel 11. The shaft 9 is projected at one end, and thereon is fastened a band-wheel 12 of enlarged dimension and intended to balance the movements of the mechanism coöperating therewith. The sprocket-wheel 8 is considerably larger than the sprocket-wheel 11, and both sprocket-wheels are connected by a chain belt 13. In advance of the shaft 9 a flexible shaft

14 is located on the frame and is journaled in a single box 15 to thereby leave the opposite portion entirely free. The free end of the shaft 14 has secured thereto an emery-wheel or analogous device 16, formed with a beveled periphery 17, and on the opposite end of the same shaft is secured a pin-wheel 18, which is traversed by a perforated belt 19, also surrounding the wheel 12.

From the foregoing description it will be observed that the speed of the shaft 6 will be increased when imparted to the shaft 9, owing to the difference in dimension of the sprocket-wheels 8 and 11, and said increased speed is conveyed to the wheel 12 and from the latter to the pin-wheel 18, which is of comparatively small dimension and whereby a steady rotation at a rapid rate is imparted to the shaft 14. By making the wheel 18 a pin-wheel and using a perforated belt 19 the latter will be prevented from running off the wheel 18, and by this means the shaft 14 is permitted to be moved without endangering a disconnection of the driving mechanism.

The flexible shaft 14, as clearly shown by Fig. 2, is composed in the main of a wire cable 20, to which the wheel 18 is directly fastened. This cable 20 is incased by the bearing-box devices up to the point and slightly beyond the bar 2 and comprises, preferably, a sleeve 21, extending from the wheel 18 and projected through the box 15 and over which is slipped a casing 22, both the sleeve and the casing being rigid. The cable is surrounded from the box 15 to a point adjacent the emery-wheel 16 by a rubber or other flexible tube 23, which is attached at one end to the casing 22 and at the opposite end to a journal-box 24, into and through which the arbor 25 of the emery-wheel projects and has rotative movement. The inner end of the arbor 25 is constructed with a socket or seat 26 to receive the outer end of the cable 20, which is made fast therein. From this construction and arrangement of parts it will be seen that the free portion of the flexible shaft extending across the frame can be grasped without interfering with the revolution of the cable 21, and after use at an angle to its normal position or to bring the emery-wheel in operative relation to the beveled knife-edges the said flexible shaft will be returned to the normal position shown, owing

to the elasticity of the tube 23 and the tendency of said shaft itself to resume a straight direction.

In operating the device the emery-wheel 16 5 is pushed over against the knives of the sickle, and in view of the beveled periphery 17 the said knives can be ground close up to the bar supporting the same. Without any complex manipulation or intricate adjustments the 10 said emery-wheel may be inclined through its flexible shaft to bring the beveled periphery thereof at any angle required and which may vary in different makes or forms of sickles.

Any suitable holding devices may be used 15 for the sickle, and for domestic use the crank-handle 7 will be employed as a means for actuating the shaft 6. Any other device might be equally well substituted for the said crank-handle in shops or factories for applying power 20 to the shaft 6 and generated at a distance therefrom.

Changes in the proportion, form, and minor details of construction can be resorted to without in the least departing from the spirit or 25 sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed as new is—

1. In a machine of the character set forth, 30 the combination of a drive-shaft, a second shaft adapted to have motion imparted thereto from the drive-shaft and provided with a band-wheel, a flexible shaft journaled adjacent one extremity only, the free extremity 35 of the shaft being movable in a horizontal plane and limited in a downward direction to

always retain it in operative position, a pin-wheel on the journaled extremity of the flexible shaft, an emery-wheel on the free extremity of the said flexible shaft, and a perforated 40 belt surrounding the band-wheel and engaging the pin-wheel.

2. In a machine of the character set forth, the combination of a frame, a flexible shaft journaled adjacent one extremity only, the 45 free extremity of the said shaft being held in a horizontal plane by the side of the frame over which it extends against a downward movement beyond a predetermined extent and readily shiftable in the arc of a circle 50 within said plane, an emery-wheel on the free extremity of the said shaft, and driving mechanism connected to the opposite extremity.

3. In a machine of the character set forth, the combination of a frame having a horizontal 55 bed, a flexible shaft journaled adjacent one extremity only, the extremity of said shaft opposite that which is journaled being freely movable in a horizontal plane and prevented from lowering below said plane by the 60 side of the bed of the frame over which it extends, a driving device on the journaled extremity, an emery-wheel on the free extremity of said shaft and an elastic tube surrounding the said flexible shaft. 65

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES LAUE.

Witnesses:

RUDOLF MUELLER,
ARETUS BOND.