

G. F. SUDENGA & E. E. KECK.
POWER HAMMER.

No. 565,523.

Patented Aug. 11, 1896.

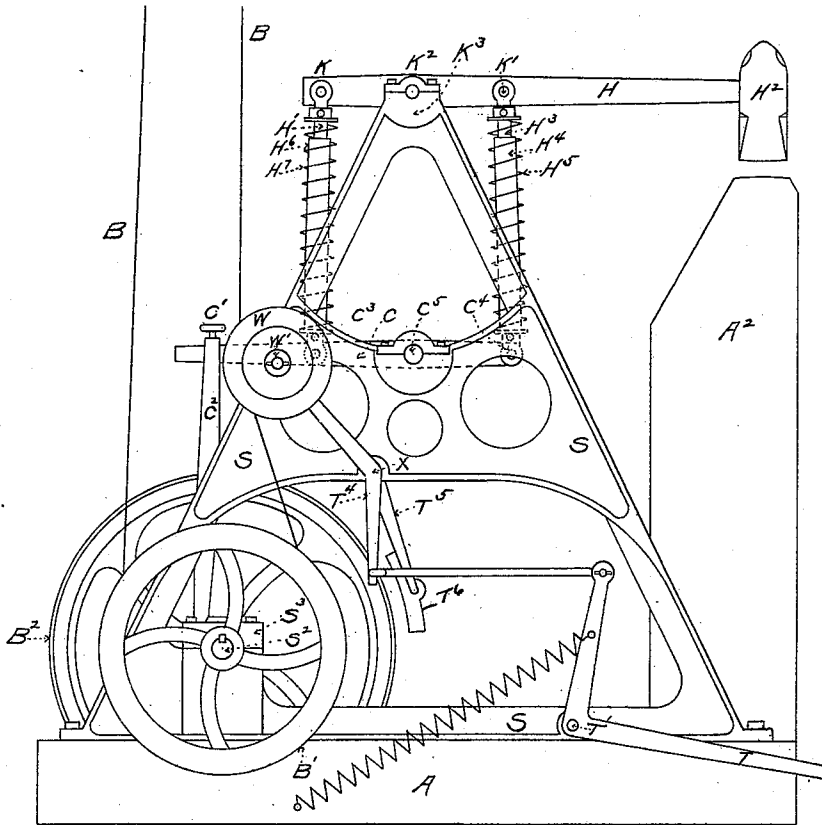


Fig. 1

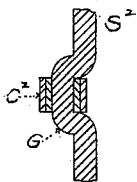


Fig. 2

WITNESSES

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GEORGE F. SUDENGA AND ELMER E. KECK, OF GEORGE, IOWA.

POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 565,523, dated August 11, 1896.

Application filed January 27, 1896. Serial No. 577,047. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. SUDENGA and ELMER E. KECK, citizens of the United States, residing at George, in the county of Lyon and State of Iowa, have invented a new and useful Improvement in Power-Hammers, of which the following is a full and complete specification.

Our invention has reference to improvements in power-hammers. Its object is to provide a simple construction by which the blow may be supplied with little friction, great force, and small loss of power, and by which all classes of work usually performed upon a blacksmith's anvil, such as pounding out plow-lays, cultivator-lays, disks of harrows, &c., can be quickly and skilfully accomplished, without the physical strength usually demanded, by means of a hammer driven by steam, set in gear by a foot-lever, leaving the hands free to direct the motion of the parts upon which the work is to be performed. We accomplish these results by the mechanism shown in the accompanying drawings, in which like parts are designated by similar letters of reference throughout both views, and in which—

Figure 1 is a complete view of our device in side elevation. Fig. 2 is a detail sectional view of drive-shaft, showing the attachment of crank-shaft.

Referring now to our construction in detail, A represents the base, upon which our device rests, and A² the anvil. To the base are attached by bolts two upright standards S S, held together at the top by iron cross-cap K³. Standards S S are preferably constructed of wood or iron and braced by cross-supports B³ B³.

B is the belt, by which the power is conducted to the drive-wheel B', supported upon boxing S³.

S² is the drive-shaft, turned by drive-wheel B', having a crank-arm G, by which crank-shaft C² is driven.

B² is the balance and brake wheel on opposite end of drive-shaft.

C is the hammer-lever, operated by shaft C², to which it is loosely attached and can be suitably adjusted in and out by thumb-screw C'.

Hammer-lever C is pivoted at C⁵ to cross-

support B³ by means of shaft C⁵, upon which it works up and down as a fulcrum.

W is a tightener-wheel supported by lever-arm T⁴, working upon shaft X, through cross-support B³, and operated by foot-lever T and its connective arm T³. On the opposite end of shaft X and operated by same lever T is brake-arm T⁵, with brake T⁶.

T² is lever-spring.

Referring now in detail to the parts of the hammer itself, H is the hammer-handle; H², the hammer-head. Handle H is pivoted upon K² to top cap K³, upon which (K²) it works as a shaft. Loosely pivoted to handle H at K' and K are handle-arms H' and H³, which are round and operated loosely and without connection inside of lever-arms H⁶ and H⁴, respectively. Arms H⁶ and H⁴ are loosely pivoted to shaft-arms C by shafts C³ and C⁴.

H⁷ and H⁵ are expansive springs working against cups at ends of arms H⁶ H⁴ and H' H³.

Having now referred to the parts, we will describe their operation. Power is applied to drive-wheel B' by belt B, which can be set in and out of motion by tightener-wheel W, operated by foot-lever T, which may be curved continuously around the base and operated at any point. Drive-wheel B' propels shaft C², by means of crank-arm G, up and down and raises and lowers end of lever C. The motion of lever C, working upon shaft C⁵ as a fulcrum, alternately raises and lowers arms H⁷ and H⁵ and arms H' and H³, working loosely in them. The alternate motion of arms H' and H³ communicates the blow to the handle H, working on shaft K². It will be observed that the outer arms H' and H⁶, when raised, give the blow by the force on outer end of handle H, and arms H³ and H⁴, when raised by force applied toward inner end of handle H, raise the hammer. Spring H⁷ assists in forcing up handle-arm H', and thus in giving the blow, and spring H⁵ assists in raising handle-arm H³ and in raising the handle.

Spring T² is a contractile spring and its tension holds brake T⁶ against brake-wheel B² when foot-lever T is released.

Having fully described our device, what we claim as new, and desire to secure by Letters Patent, is—

In a power-hammer, the combination with

a suitable base and supporting-frame, of
crank-shaft S³, hammer-operating lever C,
fulcrumed upon the frame and connected
with the crank-shaft by shaft C³, tubular
5 arms H⁴, H⁶ pivoted to the hammer-operating
lever upon opposite sides of the fulcrum
thereof, the hammer-helve fulcrumed upon
the top of the frame and carrying the depend-
ing pivoted arms slidably mounted in the
10 tubular arms, and the spiral springs sur-

rounding the arms, substantially as shown
and described.

In testimony whereof we affix our signa-
tures in the presence of two witnesses.

GEORGE F. SUDENGA.
ELMER E. KECK.

Witnesses:

O. MIDDLEKAUFF,
F. F. SUDENGA.