DAVID J. BROUGHER.

Improvement in Sawing Machines.

No. 124,031. Patented Feb. 27, 1872.

Fig. 1.

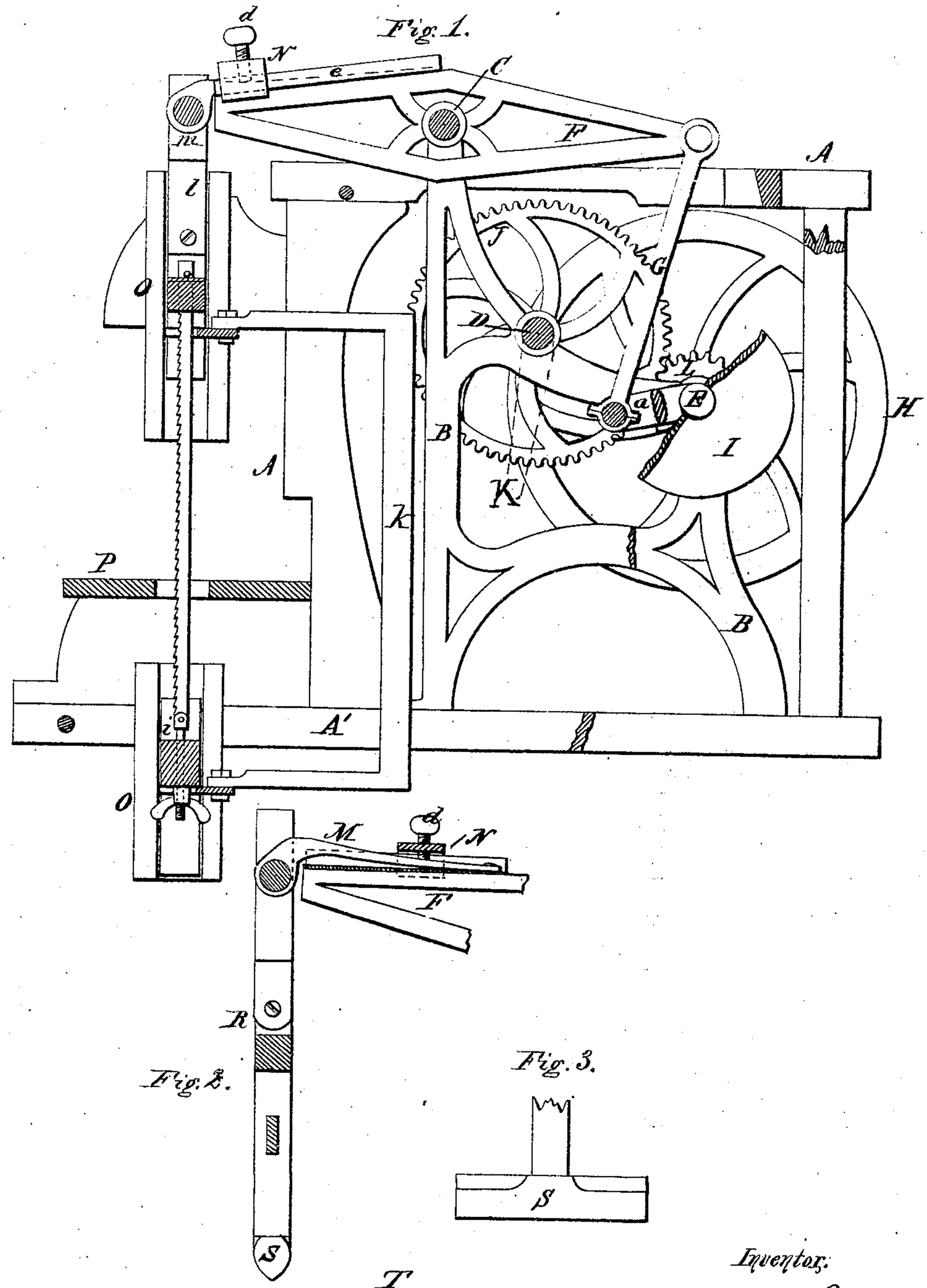

Fig. 2.

Fig. 3.

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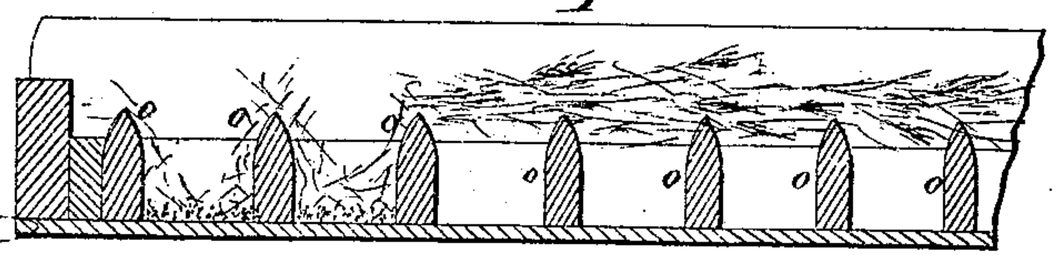

Witnesses.

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Inventor:

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

124,031

UNITED STATES PATENT OFFICE.

DAVID J. BROUGHER, OF NEW YORK, N. Y.

IMPROVEMENT IN SAWING-MACHINES.

Specification forming part of Letters Patent No. 124,031, dated February 27, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, DAVID J. BROUGHER, of New York, in the county of New York and State of New York, have invented certain Improvements in Sawing-Machine, of which the following is a specification, reference being had to the accompanying drawing.

My invention consists in a frame provided with a novel arrangement of mechanism and certain interchangeable devices, whereby the machine may be converted from a sawing into a thrashing apparatus at will.

Figure 1 is a longitudinal section through my machine as arranged for sawing. Figs. 2 and 3 are views of those parts which are substituted for the saw when the machine is to be used for thrashing.

A represents a strong wooden frame, within which there is rigidly secured an iron frame, B, provided with bearings for three transverse shafts, C, D, and E, the latter of which is formed with a crank, *a*, at its middle. On the shaft C there is mounted a lever or walking-beam, F, which has its end connected by a pitman, G, with the crank *a*. The crank-shaft is provided with a fly-wheel, H, a pulley, I, and a pinion, L, and the shaft D with a hand-crank, K, and a gear-wheel, J, the latter gearing into the pinion of the crank-shaft, as shown. On the outer end of the walking-beam there is secured a spring-bar, M, having its outer end provided with a hole or eye, and left free to spring up and down. Over or across the spring-bar there is placed a sliding block or clamp, N, provided with a set-screw, *d*, and arranged to slide on flanges *e* on the beam. By sliding the block forward over the outer end of the spring-bar, as shown in Fig. 1, and then turning down the set-screw, the end of the bar may be fastened down rigidly to the walking-beam; or by sliding the block back, as shown in Fig. 2, the end of the bar is left free to spring or yield. The frame A below the outer or free end of the walking-beam, is provided with guides or ways O to support and guide the saw-frame and the thrasher or beater head. The saw-frame consists of two slides or heads, *i*, connected by an iron bar, *k*, and a link, *m*, connected to the upper slide. The saw has its ends connected to the slides *i*, as shown, the connection to the lower slide being made by a stem and thumb-screw, by means of which any required tension of the saw may be produced.

When the machine is to be used for sawing, the saw-frame is mounted in the guides O and the link *m* connected to the end of the spring-bar of the walking-beam, and then the end of the spring-bar fastened by means of the slide, as shown in Fig. 1, so that when the walking-beam is set in motion it will give the saw a positive up-and-down motion. A removable table, P, is also placed in the frame around the saw, as shown, to support the material being sawed.

When the machine is to be used for thrashing grain, the saw-frame and the table P are removed, and the slide moved back so as to release the spring-bar. A frame or slide, R, having a beater or stamp, S, on its lower end is then placed in the guides and connected to the spring-arm, as shown in Fig. 2, so as to be carried up and down by the walking-beam, in the same manner as the saw-frame. A long box or trough, T, having a series of transverse bars or partitions, *o*, as shown in Fig. 2, is also provided and placed in the lower part of frame A, so that it can slide back and forth under the beater or stamp, which, when it descends, passes down between the partitions of the box. The sills A′ of the frame A are made to project inward beyond the face of the lower sash-guides O to form a bearing or support for the box T, and the guides O project upward above the upper face of the sills A′, as shown in Fig. 1, whereby they serve to hold the box T from moving sidewise as it is shoved back and forth under the beater S.

The grain to be thrashed is laid lengthwise on the trough and the trough moved back and forth while the beater is in operation, so that the beater acts upon every part of the same,

and effects a thorough separation of the grain from the straw. The yielding-bar M prevents the beater from crushing the kernels of grain, and also prevents the jarring and straining of the machine when the beater strikes.

Ordinarily the machine is operated by the hand-crank K applied to shaft D; but, when it is to be driven by power, the belt is applied to the pulley I of shaft E.

Having thus described my invention, what I claim is—

1. The arrangement of the sills A′ and the guides O, in combination with the operating mechanism, substantially as described.

2. In combination with the walking-beam F, I claim the spring *e* and sliding clamp N, arranged to operate as set forth.

DAVID J. BROUGHER.

Witnesses:
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