(No Model.)

E. HUBER & F. STROBEL.

GRAIN SEPARATOR.

No. 298,302. Patented May 6, 1884.

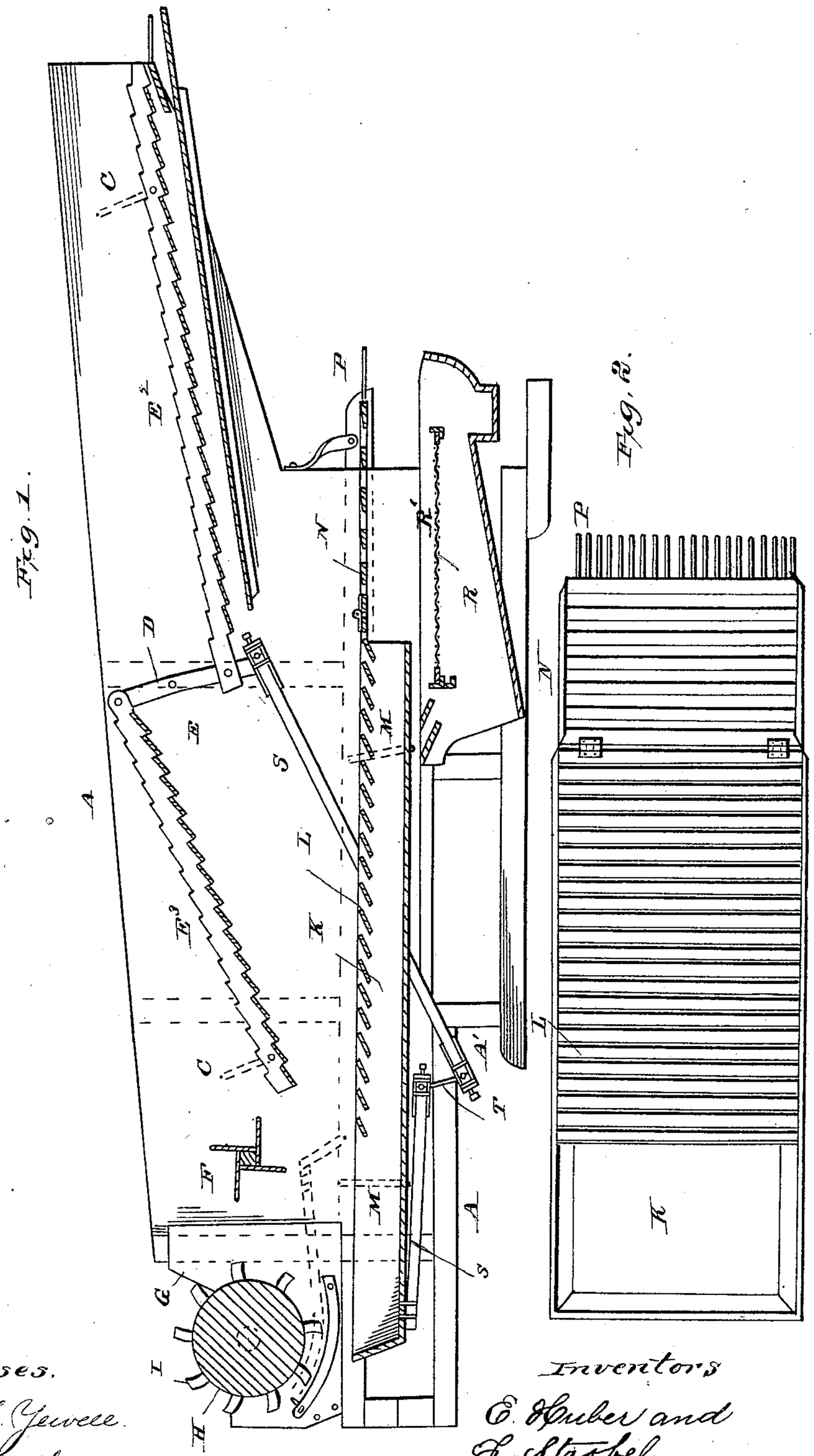

Fig. 1.

Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

EDWARD HUBER AND FREDERICK STROBEL, OF MARION, OHIO.

GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 298,302, dated May 6, 1884.

Application filed February 8, 1883. (No model.)

To all whom it may concern:

Be it known that we, EDWARD HUBER and FREDERICK STROBEL, of Marion, in the county of Marion, and in the State of Ohio, have invented certain new and useful Improvements in Thrashing-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

Our invention relates to certain improvements in grain-separators; and it consists of the construction and arrangement of parts whereby a more perfect separation of the grain from the chaff than heretofore is obtained, the operation and advantages of the same being hereinafter more fully set forth, and pointed out in the claim.

In the accompanying drawings, Figure 1 represents a longitudinal vertical section through the machine, showing the improvements thereto; and Fig. 2, a plan view of the vibrating separator.

A represents the body or frame of the thrasher, which may be of any approved construction. In this frame are located various working parts of the machine, described hereinafter. Near the upper part of this frame are located the inclined vibrating straw-carriers E^2 and E^3, supported at their contiguous ends by the lever D, which is fulcrumed at E. The other end of each carrier is supported by the swinging link C. The bottom of each carrier is formed of inclined slats so placed that as the straw is carried backward the grain will fall between the slats, the oscillatory motion of the said carriers causing the motion of the straw and grain, as will be readily understood.

F represents a blower-fan located in the forward part of the machine and operating to cause a "blast" through the machine.

In the extreme forward part of the machine, in a suitable casing, G, is located a transverse drum, H, which is provided with thrashing-teeth I.

The machine is provided with a secondary separator and grain-carrier, K, located in the lower part of the said machine, and having a solid bottom, sides, and front and an open back. It extends from under the drum to a point somewhat in the rear of the lever D.

That portion of the grain-carrier K that is located under the straw-carriers is provided with either a perforated top or a series of inclined slats, L, the purpose of which, as well as the grain-carrier, will be more fully hereinafter set forth.

The carrier K is supported by the swinging links M, and is connected to the lever D by means of the rods S and *s*, which are connected by the link T. These connections serve to give the vibratory motion to the carrier K.

To the upper portion of the rear of the said carrier K is hinged the slatted riddle N, having at its rear end a series of pins, P. The riddle is also supported near its rear end by a link or links, which may be pivoted or flexible, as preferred, and serve to regulate the "throw" of the same. Under the rear of the riddle N and carrier K is the shoe R, containing the sieve R′.

It is evident that as the grain and straw are caught and thrown rearward from the thrashing-drum they will fall upon the vibrating carrier E^3 and be slowly carried toward the rear of the machine, the light chaff being by the force of the blast carried entirely through the said machine. As the straw is conducted over the carriers, the grain is by the constant motion shaken from the said straw and falls through the intervening space to the secondary carrier K, the grain that is carried over to the straw-carrier E^2 by traveling down the inclined table located under the said carrier (shown in Fig. 1) also falling on the grain-carrier before mentioned. A considerable portion of the chaff will accompany the grain, and a portion will be blown out from the machine below the inclined table. The thoroughly-cleaned grain being proportionally very heavy, will readily fall through the inclined slats on the grain-carrier K onto the solid bottom below, while the blast which passes over the slats, and also under and up through them, will carry all the imperfectly-thrashed heads, and also the heavy chaff, to the riddle, which, by being supported by a link properly adjusted, and also being hinged, has an up-and-down vibration relatively to the carrier K, and throws the imperfectly-

thrashed heads and remaining chaff to the rear, while any thrashed grain which has been carried to the riddle will readily fall through the slats to the sieve below. The imperfectly-thrashed heads are carried rearward to the fingers P, between which they easily fall to the shoe R below, and are from there carried through the usual mechanism to the thrashing-drum. Any straw or chaff that may have reached the fingers P is by the blast carried beyond the shoe as they fall, and so out of the machine. The grain is carried on the solid bottom of the carrier K to the rear till it falls on the screen R′, and is from thence delivered in a clean condition to the proper outlet of the machine. The upward throw of the riddle N, being considerably greater than that of the carrier K, somewhat retards the rearward movement of the material, but overcomes, in connection with the blast, the force of gravity exerted on the imperfectly-thrashed heads, and so carries them rapidly backward till they reach the fingers P, and the latter work through the mass to the screen R′.

The forward extension of the grain-carrier K is for the purpose of catching the thrashed grain that falls before reaching the straw-carrier E^3. It is not necessary to have this portion slatted, as nothing but clean-thrashed grain can fall at this point.

Having thus described our invention, what we claim is—

As an improvement in grain-separators, the combination, with the shakers E^2 and E^3 and their connections, of the grain-carrier K, having a slatted or perforated top, the swinging links M, supporting said carrier, the riddle N, provided with fingers P and hinged to the rear of said top, and the suspensory links supporting the rear end of said riddle, so as to give it vibratory motion relative to the grain-carrier, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures, in presence of two witnesses, this 13th day of December, 1882.

EDWARD HUBER.
FREDERICK STROBEL.

Witnesses:
J. E. DAVIDS,
PATRICK SMITH.