

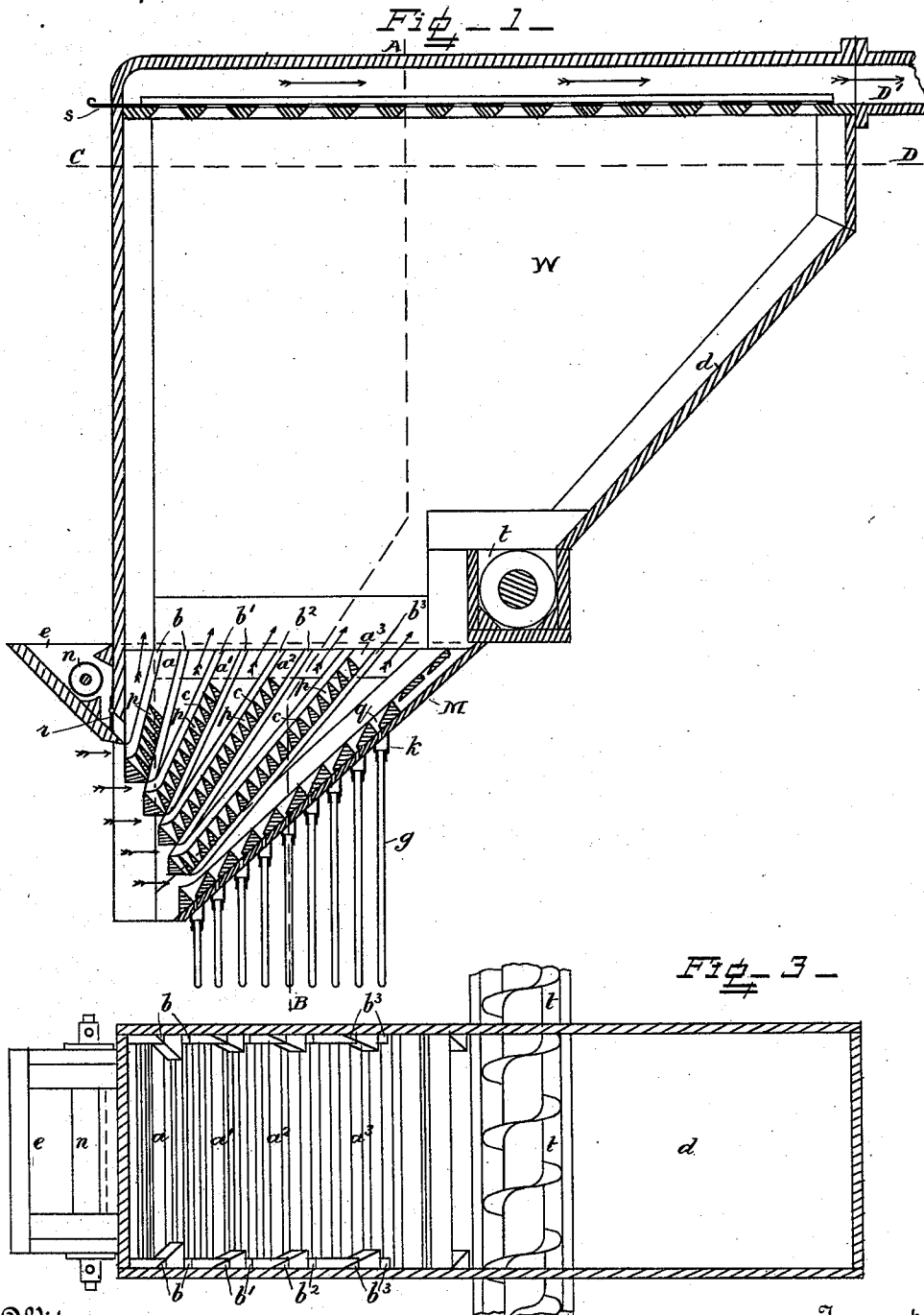
(No Model.)

2 Sheets—Sheet 1.

C. HAGGENMACHER.
CHOP GRADER.

No. 402,440.

Patented Apr. 30, 1889.



Witnesses,

Walter Allen.
Geo. L. Wheelock

Inventor,

Carl Haggennmacher.

By his Attorney

Herbert W. Jenner.

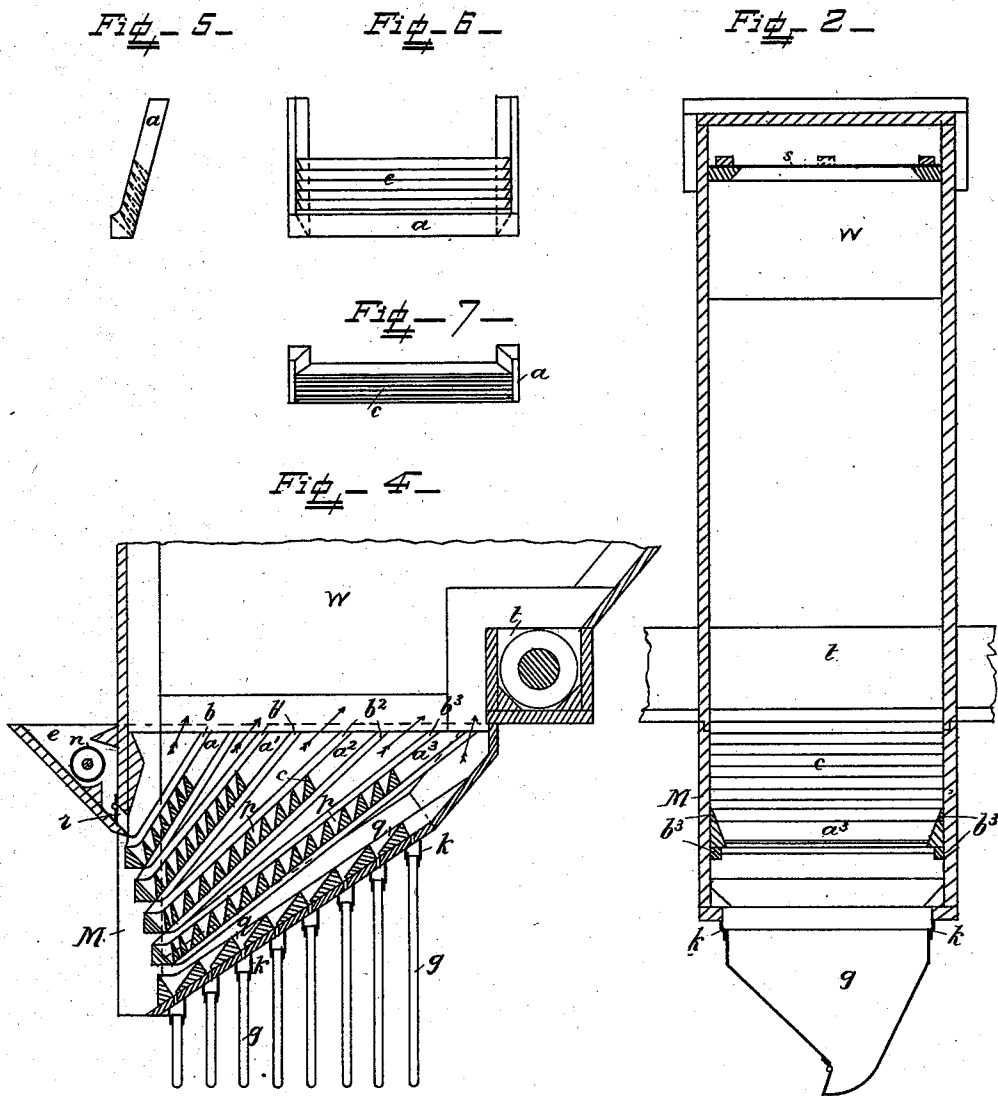
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UNITED STATES PATENT OFFICE.

CARL HAGGENMACHER, OF BUDA-PESTH, AUSTRIA-HUNGARY.

CHOP-GRADER.

SPECIFICATION forming part of Letters Patent No. 402,440, dated April 30, 1889.

Application filed July 18, 1888. Serial No. 280,311. (No model.) Patented in Germany November 26, 1888, No. 45,344.

To all whom it may concern:

Be it known that I, CARL HAGGENMACHER, a citizen of Switzerland, residing at Buda-Pesth, in the Kingdom of Austria-Hungary, have invented certain new and useful Improvements in Chop-Graders, (for which a patent has been obtained in Germany, No. 45,344, dated November 26, 1888,) of which the following is a specification.

This invention relates to chop-graders; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a longitudinal section through the machine. Fig. 2 is a transverse section taken on line A B in Fig. 1, and Fig. 3 is a horizontal section taken on line C D in Fig. 1. Fig. 4 is a longitudinal section showing a modification in the construction of the machine. Figs. 5, 6, and 7 show, respectively, front, side, and plan views of the first sliding frame.

M is the case of the chop-grader proper, and W is the air-case above it. The chop-grader is provided with upwardly-diverging inclined frames a , a' , a'' , and a''' , which are adapted to slide and can readily be taken out when required. The sliding frames are provided with slats c , between which are the gathering-passages p . Parallel guides b b' b'' b''' are secured to the sides of the case for the frames to slide between. The lower ends of the frames are arranged beneath each other, as shown in the drawings, somewhat like the steps of a staircase, and ascending and widening air-channels are formed between the upwardly-diverging frames. The lowest frame is provided with slats forming passages q , similar to passages p , and the passages q are connected by flexible joints or tubes k with the movable discharge-pieces g . The air-case W is provided with an air-pipe, D', at the top, which is connected to an exhaust-fan or other similar means for producing a current of air. A slide, s , is provided for regulating the strength of the air-currents passing through the case, as indicated by the arrows in the drawings.

A hopper, e , for the middlings is provided and is furnished with the revoluble feed-roller n and the movable valve r , which prevents the air from rushing through the hopper into

the machine. The middlings pass through the valve r into the lower part of the first air-channel and are lifted more or less by the air-current, according to their weight, and are distributed in the gathering-passages p of the first frame. The diverging and widening form of the air-passage causes the air-current to become weaker as it ascends, and the middlings are therefore sorted or graded by their weight, the lighter particles being deposited in the higher gathering-passages. The middlings pass through all the several frames and air-passages in a similar manner until they are thoroughly graded, and are finally deposited according to quality in the discharge-pieces g . The lightest particles or "stives" are carried up into the air-case W, which is provided with a sloping side, d , and are deposited in the discharge worm-chamber t at the bottom of the said side. The sliding frames can be removed and cleaned as often as desired, and the discharge-pieces are connected to the machine by flexible joints, so that their lower ends may be moved about to discharge their contents at any desired place. The openings p between the slats may be adjusted by securing the slats to the frames by temporary fastenings, which may be removed to allow the slats to be moved, or distance-pieces of different thickness may be inserted between the ends of the slats.

In the modification shown in Fig. 4 the frames are arranged with a less angular inclination than those shown in Fig. 1, so that the machine can operate upon very coarse or heavy middlings.

What I claim is—

1. In a chop-grader, the combination, with the case M, of the inclined upwardly-diverging frames arranged in a series and provided with slats forming gathering-passages p and q , substantially as and for the purpose set forth.

2. In a chop-grader, the combination, with the case M, of the inclined upwardly-diverging frames provided with slats forming the gathering-passages p and q , the guides between which the said removable frames are slid, and the hopper provided with an air-valve, substantially as and for the purpose set forth.

3. In a chop-grader, the combination, with

the case M, of the inclined upwardly-diverging frames provided with slats forming the gathering-passages *p* and *q*, the air-case W, provided with a sloping side and the discharge-chamber *t*, the air-regulating slide at the top of the air-case, and the hopper *e*, provided with an air-valve, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL HAGGENMACHER.

Witnesses:

GEORGE DAVIS.

FRANZ CZIZEK.