(No Model.)

A. VAN CAMP.

SCALPER.

No. 491,392. Patented Feb. 7, 1893.

Fig 1

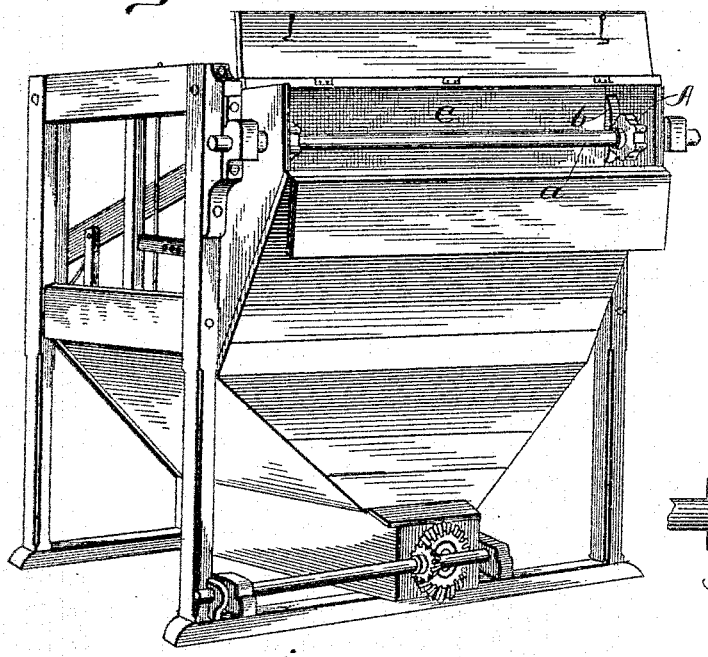


Fig 3

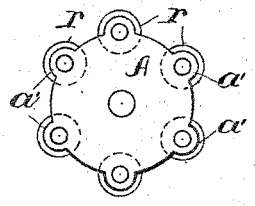


Fig 4

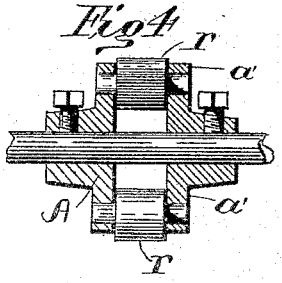
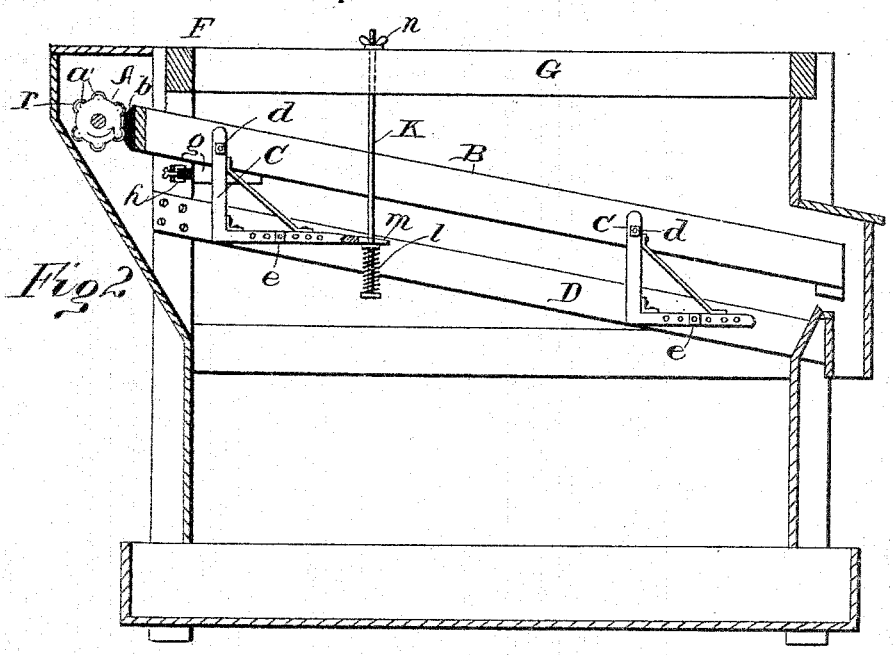


Fig 2



WITNESSES:

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UNITED STATES PATENT OFFICE.

ANSON VAN CAMP, OF DECATUR, INDIANA.

SCALPER.

SPECIFICATION forming part of Letters Patent No. 491,392, dated February 7, 1893.

Application filed December 18, 1891. Serial No. 415,510. (No model.)

To all whom it may concern:

Be it known that I, ANSON VAN CAMP, a citizen of the United States, residing at Decatur, in the county of Adams and State of Indiana, have invented certain new and useful Improvements in Scalpers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in scalpers, or machines for operating a sieve, bolt or screen for separating grades of flour, broken wheat, break-flour, bran and impurities in the manufacture of wheat, rye and buckwheat-flour, corn-meal &c.; and it consists especially in certain new and improved devices for agitating the screen or sieve commonly used in such machines, whereby a combined vertically and longitudinally reciprocating motion is imparted to the sieve.

In the drawings all of the features referred to are designated by the same letters in each of the views.

Figure 1 represents an exterior perspective view of my complete invention. Fig. 2 a vertical sectional view of the machine, taken on the right side, just within the casing, showing the sieve and the devices for operating the same. Fig. 3 a side elevation of one of the roller-cams. Fig. 4 is an end section through one of the roller-cams which imparts motion to the sieve.

F is the feed-hopper or spout at which the material enters the machine.

B is the sieve upon which it is received, distributed and separated.

A is one of the roller-cams by which motion is imparted to the sieve.

C, C are the rockers upon which the sieve is normally supported upon each side, and which assist in operating the same.

All the devices shown in the drawings for supporting and agitating the sieve are duplicated upon the opposite side of the machine.

a is the main shaft, upon which is mounted, upon each side of the head end of the machine, a wheel A, upon the periphery of which are cast six cam projections (more or less) *a'*, *a'* in each of which is journaled a steel roller *r*, *r*. The sieve B is provided at each of its upper corners, opposite the roller cams A, with a buffer or cushion *b*, of rubber or other elastic material, preferably curved vertically on its outer face, and secured to the end-board *c* of the sieve, and designed to engage the rollers *r*.

The sieve B is movably supported upon each side by the rockers C, C. Said rockers consist preferably of a right angular frame of wood, suitably braced to secure strength. The upright arm of each rocker is pivoted on a stud in the side of the sieve at *d*. The horizontal arm of each rocker contains a series of holes adapted to engage a stud *e* on one of the timbers D of the frame, forming a pivot for the horizontal arm; and it is evident that the pivotal relation of the rockers to the frame may be varied as desired, by shifting the horizontal arm from one pivot to another. The sieve B being thus held in suspension upon the rockers C, C, the buffers *b* upon its head rest normally upon or in close proximity to the roller-cam A. When the cam A is revolved in the direction shown by the arrows, the rollers *r*, *r* strike the buffers *b*, imparting to the sieve B a quick upward and at the same time longitudinal movement. The adjustment of the sieve B upon the rockers C, C facilitates and assists this movement, permitting the sieve to yield to the motion imparted to it by the rollers, and at the same time carrying it upward a certain distance; the extent of the vertical throw being determined by the adjustment of the horizontal arm of the rockers upon the stud *e*: it being obvious that the nearer the pivotal point of the horizontal arm is brought to the upright arm, or in other words, the less the distance between the pivotal points of the two arms of the respective rockers, the less will be the elevation of the sieve, with reference to the roller-cam A, and therefore the greater the amplitude, both of the vertical and longitudinal throw imparted to the sieve. The extent of the vibration of one end of the sieve may be made to differ from that of the other end, by different adjustments of the rockers at the respective ends. When the sieve has reached the limit of its throw, and the vibration of the cam-roller A carries any one of the rollers *r* away

from and out of contact with the buffers *b* on the head of the sieve, the sieve falls back with the buffers *b* in the depression between two adjacent rollers, to be acted upon in turn by the next following roller.

For the purpose of regulating the extent of the longitudinal vibration of the sieve, also of breaking the force of the recoil of the sieve, in case the same should be too great, and relieving the rollers *r* from any pounding of the buffers, I employ a lug or block *g* secured, preferably, to the under side of the sieve and arranged to come in contact with an adjustable cushion of rubber or other elastic material *h* secured in the frame. On the other hand to reflect the action of the roller-cam A, to quicken and increase the force of the recoil of the sieve, in case the same should be too slow or weak, and to regulate the tension of the machine generally, I employ on each side of the machine the rod *k* and coiled spring *l*. The rod *k* passes through a slot *m* in the outer end of the horizontal arm, of one or both of the rockers, and supports a spring *l*, mounted under said arm, and is itself adjustably supported, by means of a thumb-nut *n*, upon its upper and threaded end, from one of the timbers G, of the frame. It is obvious that the tightening of the thumb-nut *n* will increase the tension upon the rocker, and the force of the recoil of the sieve.

The devices described combine great simplicity, effectiveness and economy of construction; and have been found in practical operation to perform their work with great efficiency. The aim of the inventor has been to avoid the great friction and consequent noise and wear and tear of parts common in machines of this class. The roller-cams operating upon elastic buffers communicate the necessary shock to the sieve; while at the same time they are noiseless, and avoid the rigid jolting motion characteristic of the mechanisms in ordinary use. My devices for supporting and adjusting the sieve aid greatly in securing the elasticity of the stroke. They also enable the adjustments to be made with great accuracy and delicacy, adapting the machine to all kinds and conditions of stock. My devices also prevent excessive attrition or friction of the stock, in the separating process: this being an important point in the operation of such machines; as excessive attrition separates too much of the bran substances, pulverizing the same, and leaving it to be ground into flour: while this machine, by the peculiar operation of the parts described, effects a perfect separation without excessive friction, thus producing a superior grade of flour.

What I claim as new is:

1. The combination in a scalping machine, of a main shaft carrying a wheel provided with cams upon its periphery, a sieve actuated by said cams, supporting rockers pivoted to the sieve and frame respectively, and an adjustable supporting rod, substantially as described.

2. The combination in a scalping machine, of a main shaft carrying roller cams, a sieve actuated by said cams, a lug on said sieve adapted to engage a stop or cushion, supporting rockers pivoted to said sieve and frame respectively, an adjustable rod and a spring on said rod, substantially as described.

3. In a scalping machine, the combination with a vibrating sieve, of adjustable rectangular rockers supporting said sieve, and a fulcrum for supporting said rockers, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ANSON VAN CAMP.

Witnesses:

PAUL P. HOOPER,

JOHN BLAKESLEE.