No. 2,980. PATENTED MAR. 4, 1843.

H. JOHNSON.

MACHINE FOR BREAKING AND SCUTCHING OR CLEANING FLAX AND HEMP.

Fig. 3.

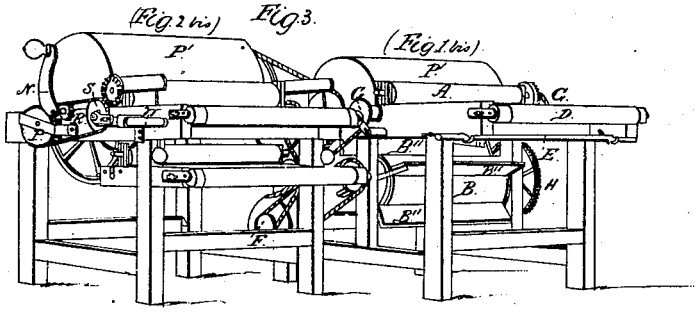


Fig. 2.

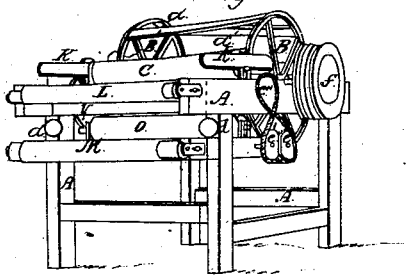


Fig. 4.

Fig. 1.

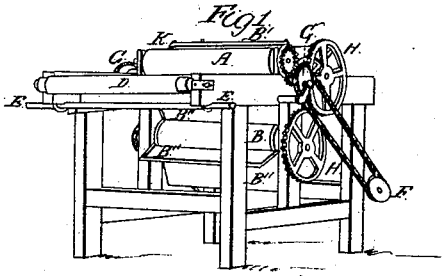


Fig. 5.

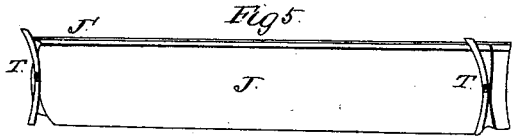
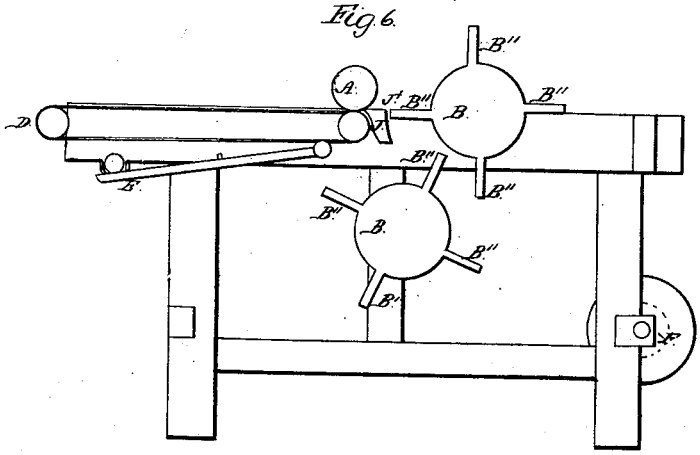


Fig. 6.



UNITED STATES PATENT OFFICE.

HENRY JOHNSON, OF MAYSVILLE, KENTUCKY.

IMPROVEMENT IN MACHINES FOR BREAKING AND SCUTCHING OR CLEANING FLAX AND HEMP.

Specification forming part of Letters Patent No. **2,980**, dated March 4, 1843.

To all whom it may concern:

Be it known that I, HENRY JOHNSON, of Maysville, in the county of Mason and State of Kentucky, have invented a new and useful Machine for Separating the Shives from the Fiber or Lint of Hemp and Flax, which improved machine I denominate a "scutching-machine," and which may be used not only for the scutching or cleaning, but may also be employed as a breaking-machine; and I do hereby declare that the following is a full and exact description thereof.

I sometimes use my scutching-machine in conjunction with a separate breaking-machine, and in the accompanying drawings I have shown the two as combined, as well as separate from each other, and it will be found best in a large establishment so to use them.

Figure 1 is a perspective view of my scutching-machine. Fig. 2 represents a breaking, separate from the scutching, machine; and Fig. 3, the two machines supposed to be coupled together, so as to operate simultaneously. Fig. 4 is an end, and Fig. 5 a front, view of a concave, between which and the beating-cylinder in either machine the material is to pass and be acted upon as it leaves the feeding-apron.

A, Figs. 1 and 3, is the uppermost of two feeding-rollers, between which the material to be operated upon is carried to the beating or dressing cylinders.

D is an endless apron, upon which the material is to be laid in the ordinary way. The roller A is to be borne down upon the material which is being dressed by means of weighted levers or by suitable springs, as in many other machines, there not being any novelty in the manner of feeding or of holding the article between the feeding-rollers.

B B′ are the lower and the upper dressing or beating cylinders, which are similar to each other in their construction, and are connected together by gearing-wheels H H, so as to be driven with equal velocities. They have each a cylindrical body, as shown at B, and carry four beaters or vanes, B″, which are kept at equal distances apart by the gearing-wheels H H. The edges of the vanes in their nearest approach to the cylindrical body B have space sufficient for the passage of the hemp or flax between them. Instead of four vanes, a greater or less number may be used, if preferred. The feeding-apron differs from those heretofore employed by being made not only to hold the hemp, but to allow it to be fed in or to be drawn back in the same manner in which it is fed in and drawn back by the hand of the attendant in dressing and breaking machines generally; but this object is effected by it in a more perfect manner than it can possibly be accomplished by hand, the material being more widely and equally spread out. For the purpose of feeding and of drawing back the material, I combine with the feeding-apron of the scutching-machine a double clutch or shipper for reversing its motion.

E, Figs. 1 and 3, is a shipper-rod, which is connected with a lever that moves the clutch-boxes.

G G are two clutches, one or the other of which may at pleasure be put into gear with the lower feeding-rollers; or, if desired, the motion of the feeding-apron may be arrested by moving the rod E so that neither of the clutches shall be in gear. Such clutch-boxes need not be particularly described, as they are well known to machinists; but they have not heretofore been used in the combination in which I have employed them.

F is a pulley on a shaft at the rear of the machine, which shaft has a pulley, F′, Fig. 3, on its other end, from which two pulley-bands pass around the two pulleys G G on the clutching apparatus, and one of these bands being crossed they thus serve to reverse the motion.

The arrangement of the dressing or beating cylinders of the feeding-apron and the concave is shown in Fig. 6, which is a vertical section of the scutching-machine through the middle from front to back, the respective parts being designated by the same letters of reference as in the other figures.

J is a concave, against the upper edge, J′, of which the beaters or vanes B″ operate. This concave may be stationary; but I deem it best to give to it an elastic action by placing strong springs T at each end of it to operate against the frame and bear it up toward the beaters, as it will then yield to any extra force resulting from the resistance of the material.

By combining the clutching apparatus with this scutching-machine the feeding is effectually and most advantageously governed. The hemp or flax is fed in and withdrawn to any extent and any number of times, or may be

left at rest, according to the judgment of the attendant, with no other labor on his part than the shifting of the rod E—an arrangement which not only abridges the labor, but renders the operation much more perfect than it otherwise would be.

Fig. 2 shows a breaking-machine which may be used in combination with the scutching-machine; but breaking-machines of other constructions may be substituted for the one represented; or, as above indicated, the scutching-machine may be used to break as well as to scutch. Believing, however, that the breaking-machine shown in Fig. 2 is one of the best that has been constructed, I have deemed it proper to give a brief description thereof, without at present preferring any claim thereto, but at the same time not intending to yield any claim which it may be hereafter found that I may have to the invention of any part thereof, this being a question not yet finally determined.

In Fig. 2, A represents the frame of the breaking-machine; B B, the beating cylinder or reel, carrying swords or beaters *a a*, which operate against a concave similar in all respects to that described as used with the scutcher. These beaters should be placed obliquely, so as not to act with their whole length at once against the upper edge of the concave. The roller C is borne down by levers K K and weights *d d*.

M is a delivering-apron revolving in a direction the reverse of the apron L. The roller O is the uppermost of a pair of holding-rollers appertaining to this apron, the pulley *e'* being on the shaft of the lowermost. There is a second lower roller, on the shaft of which is the pulley *e*. The apron is stretched round this last roller, so as to carry it close to the beating-cylinder. A band from the pulley *e''* may drive both these lower rollers. By this arrangement the hemp, as it is broken, is carried forward and is delivered by the apron M in front of the machine. As it passes from the beating-cylinder onto said apron it is held thereon by the roller O, which may be borne down by weights or by springs V. The driving-pulley *f* is placed on the main shaft of this machine.

In Fig. 3 the breaking-machine is shown as situated alongside of the scutching-machine, so that both may be driven by the same power. In these figures the beating-cylinders are hidden by the covers P' P'.

Having thus fully described the nature of my improved scutching-machine and shown the manner in which the same operates, what I claim therein as new, and desire to secure by Letters Patent, is—

1. The combining of a clutching and shipping apparatus with the dressing or beating cylinders for the purpose of feeding, withdrawing, or holding stationary the hemp or flax upon the feeding-apron while it is being acted upon by the beating or scutching vanes, the whole being arranged and operating in the manner herein set forth.

2. I do not claim the beating or scutching cylinder separately, nor do I claim to be the inventor of the clutching or shipping apparatus for arresting or changing the motion of machinery, but confine my claim to their combination in a machine for scutching, beating, or dressing hemp or flax, as herein set forth.

HENRY JOHNSON.

Witnesses:

A. C. RESPESS,.

R. H. STANTON.