No. 795,651. PATENTED JULY 25, 1905.

S. B. ROY.

TRAVERSE GRINDER.

APPLICATION FILED MAY 8, 1905

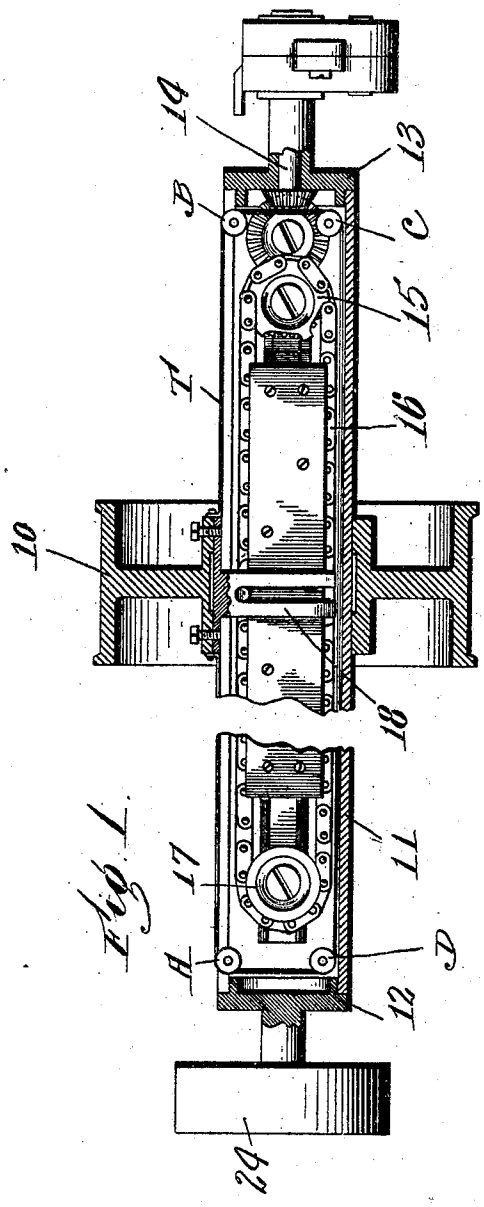


Fig. 1.

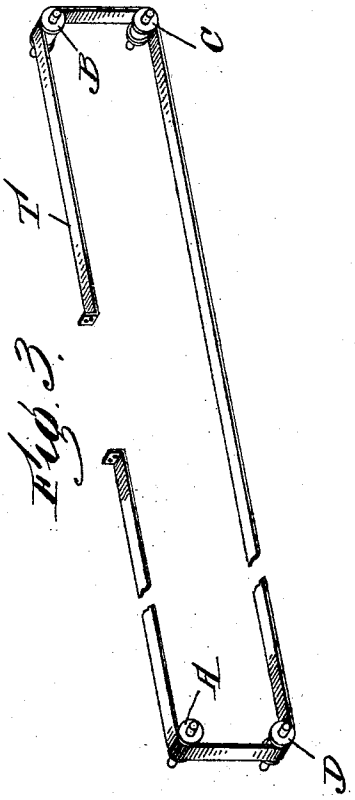


Fig. 3.

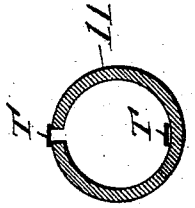


Fig. 2.

Witnesses:
C. F. Wesson
E. M. Allen.

Inventor:
S. B. Roy
By Attorneys.
Southgate & Southgate

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SYLVANUS B. ROY, OF WORCESTER, MASSACHUSETTS.

TRAVERSE GRINDER.

No. 795,651. Specification of Letters Patent. Patented July 25, 1905.

Application filed May 8, 1905. Serial No. 259,321.

To all whom it may concern:

Be it known that I, SYLVANUS B. ROY, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Traverse Grinder, of which the following is a specification.

This invention relates to that class of grinding-machines which are employed for grinding card-clothing or for similar purposes.

The especial object of this invention is to provide a grinding-machine with means for excluding dust and dirt from its operative parts.

The invention relates particularly to that class of grinding-machines having hollow shafts or shells which are slotted longitudinally and each of which has a grinding-wheel mounted to turn with the shaft and to reciprocate thereon.

The particular object of this invention is to provide means for covering or closing the slot, so as to exclude all dirt and dust from the interior of the shaft.

The invention consists of the combinations of the hollow shaft or shell and of the means for covering the slot therein, as hereinafter described, and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a sectional view, partly broken away, of sufficient parts of a grinding-machine to illustrate the application of this invention thereto. Fig. 2 is a transverse sectional view of the shell, and Fig. 3 is a perspective view of the endless strap and its supporting-rolls.

In the so-called "traverse grinding-machines"—such, for example, as employed in grinding card-clothing and similar purposes—the operative parts are inclosed within a hollow shaft or shell which is slotted longitudinally. The grinding-wheel is mounted upon the shaft and is provided with a key or plate extending through the slot in the shell. The traverse mechanism or operative parts which are inside the shell serve to reciprocate the grinding-wheel on the shaft, while the shaft and wheel turn together to effect the grinding operation. In this class of grinding-machines as heretofore constructed the dust and grit have been permitted to enter the hollow shell and tend to wear out the operative parts and increase the friction thereof. I have found that this can be prevented by providing means for protecting or covering the slot of the shell of the grinder.

In the particular construction I have herein illustrated I employ a strap or flexible steel tape for protecting the slot; but it is to be understood that other slot-covering means may be employed without departing from the broad scope of the invention.

Referring to the accompanying drawings and in detail, the traverse grinder herein illustrated comprises the grinding-wheel 10, which turns with and is mounted to reciprocate upon the hollow shaft 11. Secured in the ends of the hollow shaft 11 are the heads 12 and 13. The head 12 is provided with a drive-pulley 24, while journaled in the head 13 is a driving-shaft 14, which is connected through a train of bevel-gears to turn a sprocket-wheel 15.

Mounted on the sprocket-wheel 15 and passing over a guide-pulley 17, near the other end of the shell, is a drive-chain 16.

Carried by the grinding-wheel 10 and extending through the slot into the inside of the shell is a plate 18. The plate 18 is provided with a slot engaged by a driving-pin carried by the chain 16.

In a grinding-machine as thus equipped the pin-and-slot connection between the drive-chain and the grinding-wheel serves to reciprocate the grinding-wheel upon the hollow shaft while the wheel turns with the shell during the grinding operation.

The parts as thus far described may be of any of the ordinary or approved constructions, and this particular type of grinding-machine will be recognized by those skilled in the art as one which is used extensively in grinding card-clothing and similar purposes.

In order to protect and close the slot of the shell while still leaving the same open to receive the driving-plate of the grinding-wheel, I have provided a protecting-covering, which in the present instance consists of a steel tape or strap T, which, as most clearly illustrated in Fig. 3, runs over four small tape-pulleys A, B, C, and D.

In the particular construction illustrated herein one leg of the flexible tape or strap T extends along the outside of the slotted shell, so as to form an exterior covering or protection for the slot. It is to be understood, however, that the tape may be differently arranged. For example, instead of running on the outside of the slotted shell it may run on the inside of the shell, so as to protect the slot from the inside.

In the operation of a complete machine as thus constructed it will be seen that the oper-

ating parts are completely inclosed and protected at all times—that is to say, said operating parts are located in a practically tight chamber from which all dust and foreign materials will be excluded.

I am aware that many changes may be made in practicing my invention by those who are skilled in the art and that the slot of the hollow shell may be protected or closed by devices which are different from the protecting strap or tape which I have shown and described as illustrating the preferred form of my invention. I do not wish, therefore, to be limited to this particular construction; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a grinding-machine, the combination of a hollow longitudinally-slotted shell, a grinding-wheel turning therewith and mounted to reciprocate thereon, and means for covering the slot in the shell.

2. In a grinding-machine, the combination of a hollow longitudinally-slotted shell, a traverse mechanism mounted in said shell, a grinding-wheel turning with the shell and mounted to reciprocate thereon, and means for covering the slot of the shell.

3. In a grinding-machine, the combination of a hollow longitudinally-slotted shell, a chain mounted in the shell, means for actuating the chain, a grinding-wheel mounted on the shell, a plate extending through the slot in the shell and having a slot engaged by a driving-pin on the chain, and means for covering the slot of the shell to exclude dust therefrom.

4. In a grinding-machine, the combination of a hollow longitudinally-slotted shell, a grinding-wheel turning therewith and mounted to reciprocate thereon, and a flexible strap or tape traversing with the wheel and covering the slot of the shell so as to exclude dust therefrom.

5. In a grinding-machine, the combination of a hollow longitudinally-slotted shell, a grinding-wheel mounted to turn therewith and reciprocate thereon, a set of four antifriction tape-pulleys journaled in said shell, and a flexible strap or tape mounted on said tape-pulleys with its ends fastened to the grinding-wheel so that the same will be traversed therewith and will cover the slot in the shell.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

SYLVANUS B. ROY.

Witnesses:
PHILIP W. SOUTHGATE,
MARY E. REGAN.