

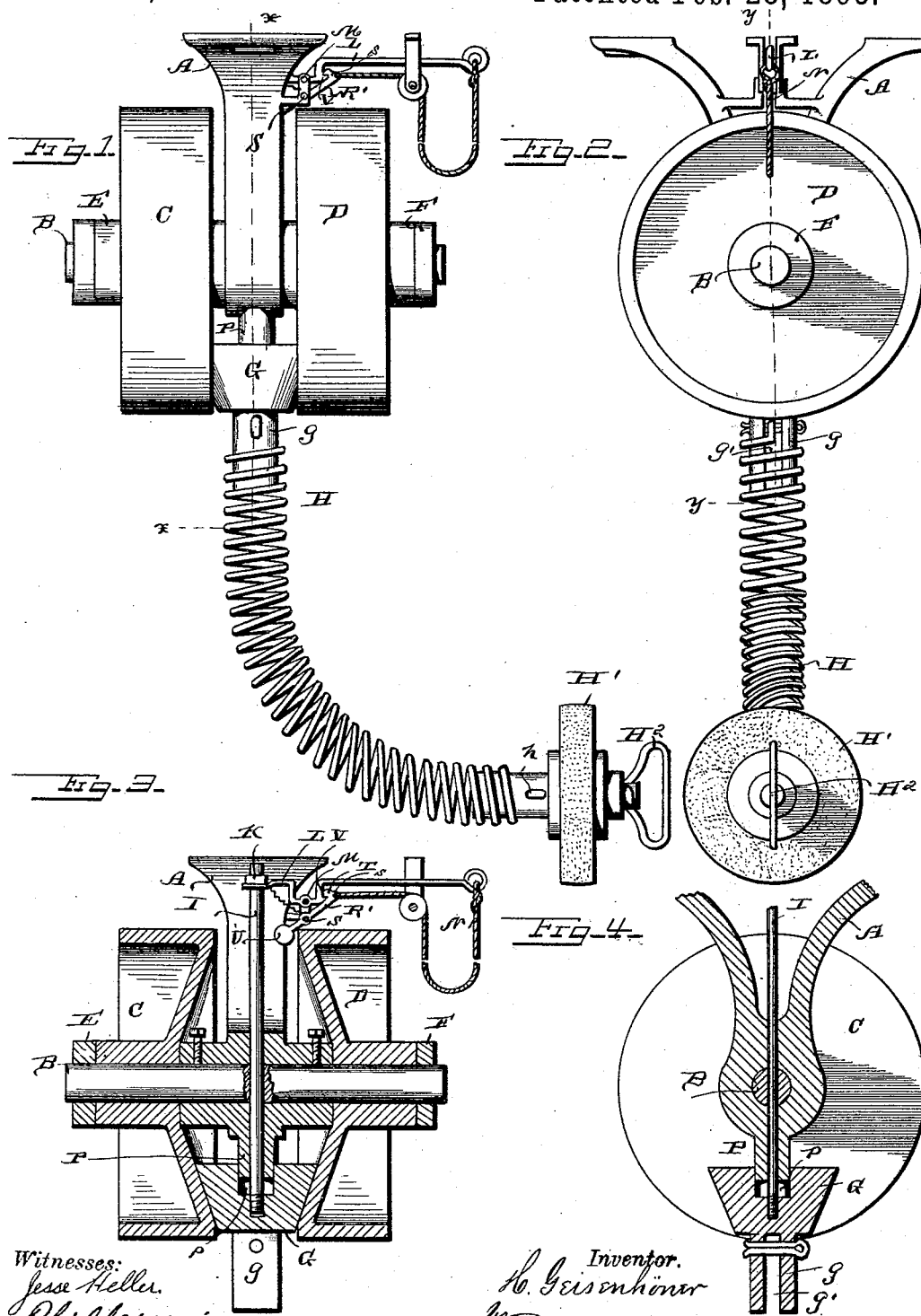
(No Model.)

2 Sheets—Sheet 1.

H. GEISENHÖNER.  
POLISHING AND GRINDING MACHINE.

No. 492,768.

Patented Feb. 28, 1893.



Witnesses:  
Jesse Heller.  
Phil. Masi.

Inventor.  
H. Geisenhöner  
by E. W. Anderson  
his Attorney.

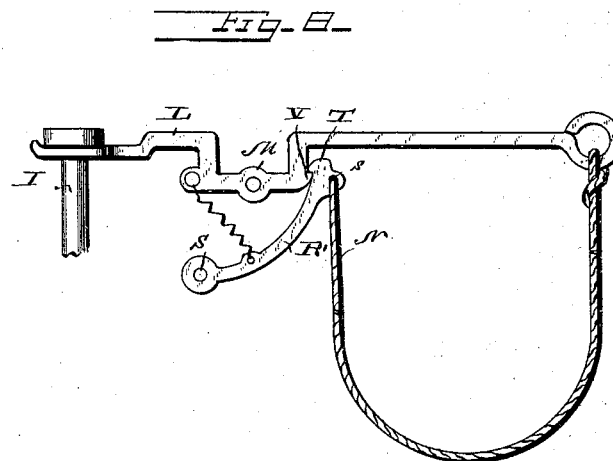
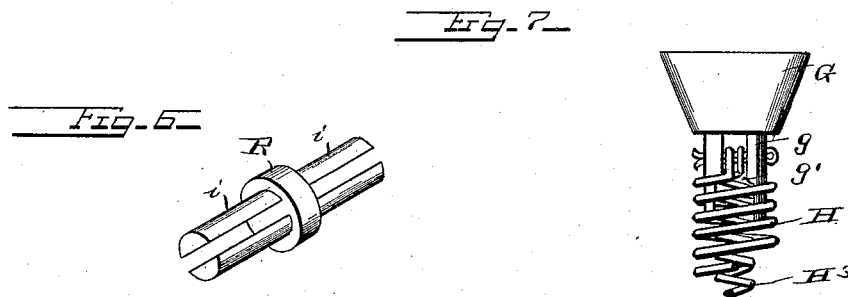
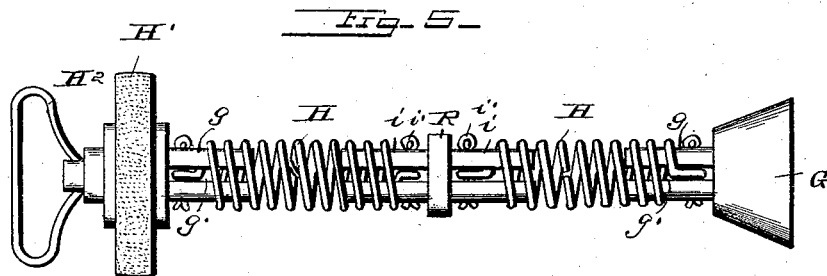
(No Model.)

2 Sheets—Sheet 2.

H. GEISENHÖNER.  
POLISHING AND GRINDING MACHINE.

No. 492,768.

Patented Feb. 28, 1893.



Witnesses:

Jesse Heller.  
Philip Masi.

Inventor:

H. Geisenh ner  
by E. W. Anderson  
his Attorney.

# UNITED STATES PATENT OFFICE.

HENRY GEISENHÖNER, OF SCHENECTADY, NEW YORK, ASSIGNOR OF ONE-HALF TO E. E. KRIEGSMAN, OF SAME PLACE.

## POLISHING AND GRINDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 492,768, dated February 28, 1893.

Application filed August 16, 1892. Serial No. 443,194. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY GEISENHÖNER, a citizen of the United States, and a resident of Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in Polishing and Grinding Machines; 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is an elevation of the invention. Fig. 2 is an end view of the same. Fig. 3 is a vertical section on line *x. x.* Fig. 4 is a vertical section on line *y y.* Fig. 5 is a detail view showing the manner in which the springs may be coupled. Fig. 6 is a detail view of the coupling. Fig. 7 is a detail view of modified form of spring. Fig. 8 is a detail view showing a modification of the shifting device.

This invention relates to certain new and useful improvements in grinding and polishing machines, and it consists in the novel construction and combination of parts, all as hereinafter specified.

Referring to the accompanying drawings, the letter A indicates a hanger, carrying a short piece of shafting B, upon which revolve two belt pulleys C and D, in opposite directions. This may be effected by driving one of said pulleys with a straight belt, and the other with a crossed belt. Said pulleys, the position of which is secured by set collars E and F, have their inner faces conically dished, whereby they are enabled to receive a cone pulley G between them, as shown. To a downward extension *g* of this cone pulley is secured one end of a steel wire coil H. By the engagement of this pulley with the pulleys C and D, said wire coil is given a revolving motion, and serves as a flexible medium to transmit the motion of said cone pulley, to an emery or other grinding and polishing wheel H', which is affixed to the lower end thereof. Said wheel for the purpose of providing for its connection with the coil has its axial portion vertically extended, and to this

the coil is affixed by means of a colter *h.* A handle attachment H<sup>2</sup> is also provided for the use of the operator in controlling the operation and position of the wheel. Should one length of coil be insufficient to reach from the pulley G to the point of application, two or more lengths can be joined together. A suitable coupling for this purpose is shown in Figs. 5 and 6 wherein a disk R is provided, having its axial portion extended in each direction, as indicated at *i, i,* said extensions being slotted to receive the ends of the coils, which are secured thereto by colters *i'.*

In order to disengage the cone pulley from the driving pulleys C and D, the clutching device shown in detail in Figs. 3 and 8 is provided. This device consists of a thin rod I, fastened at one end to the cone pulley, passing through the bearing A and shaft B, and terminating at its upper end in a knob K, by means of which said rod may engage with a fork lever L. The latter has its fulcrum M attached to hanger A, and is operated by pulling or releasing a string N, attached to its free end. A spring Q which is fastened to said lever and to the hanger, as indicated, assists the weight of G and H in pulling down the fork of the lever L upon the release of the string. The movement of said fork, it will be apparent, will raise or lower the cone pulley out of, or into driving contact with the pulleys C and D.

To secure the lever L in its downward position, that is, when the cone pulley G is disengaged, and the apparatus at rest, a lever R' is employed, which has its fulcrum S below the fulcrum M of said lever L. Said lever R' has on one arm a nose or catch T, and on the other arm a weight U. The free end of the cord N is made fast to said lever at *s.*

In stopping the apparatus, the string N is pulled on the L lever side, causing the nose T to slide on the curved portion of said lever until it comes into engagement with a similar nose V on the lever, and thereby locks it. By pulling on the R' lever side of the string, the weight U is raised, freeing the engagement of the noses T and V. The spring Q then pulls upon the lever L and permits the cone pulley to drop into driving engagement.

By connecting the lower end of the spring

Q to the lever R', as shown in Fig. 8, the weight U may be done away with.

To secure a steady motion of the cone pulley, the bearing of the hanger A is provided with a cylindrical downward extension P, which fits in a recess *p* in the cone, and serves as a guide for the latter.

In Fig. 7 I have illustrated a modification of the spring coil carrying the grinding and polishing wheel. In this construction, the slot *g'* in the downward extension *g* of the cone pulley G is made sufficiently large to receive the upper end of a secondary coil H<sup>3</sup>, which is inclosed in the coil H, and which is wound oppositely thereto. The lower end of this secondary coil is secured in a recess in the extension of the polishing or grinding wheel. It will be apparent that this arrangement is capable of standing great strain.

Having described this invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a grinding and polishing machine, the combination with the oppositely driven pulleys, and their support, of the cone pulley driven thereby, the coil spring affixed to said cone pulley, and the grinding or polishing wheel affixed to said spring and rotated thereby, substantially as specified.

2. In a grinding and polishing machine, the combination with the oppositely driven pulleys and their support, of the cone pulley driven by said pulleys, the coil spring affixed to said cone pulley, the grinding and polishing wheel affixed to said spring, and the device for throwing said cone pulley into and out of gear, substantially as specified.

3. A grinding and polishing machine, com-

prising essentially a pair of oppositely driven pulleys, their support, a cone pulley driven by said pulleys, a grinding and polishing wheel, and a flexible rotating connection between said cone pulley and wheel, substantially as specified.

4. In a grinding and polishing machine, the combination with the hanger, the shafting carried thereby, and the oppositely driven pulleys on said shafting, of the cone pulley embraced and driven by said pulleys, a spring coil affixed to said cone pulley, and transmitting the motion of the latter to the polishing and grinding device, the guide for said cone pulley, the rod attached thereto, and the forking shifting lever engaging said rod, substantially as specified.

5. In a grinding and polishing machine, the combination with a wheel or pulley, and its driving mechanism, of a coil spring affixed to said wheel or pulley, and a grinding and polishing wheel affixed to said spring and driven thereby, substantially as specified.

6. In a grinding and polishing machine, the combination with the shifting lever L and the cord affixed at one end thereto, of the lever R fulcrumed below the fulcrum of the lever L, a nose or catch on said lever, designed to have engagement with a similar nose or catch on the lever L, said lever L having one end of said cord fastened thereto, substantially as specified.

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

HENRY GEISENHÖNER.

Witnesses:

E. NOTT SCHERMERHORN,  
J. WARD SCHERMERHORN.