

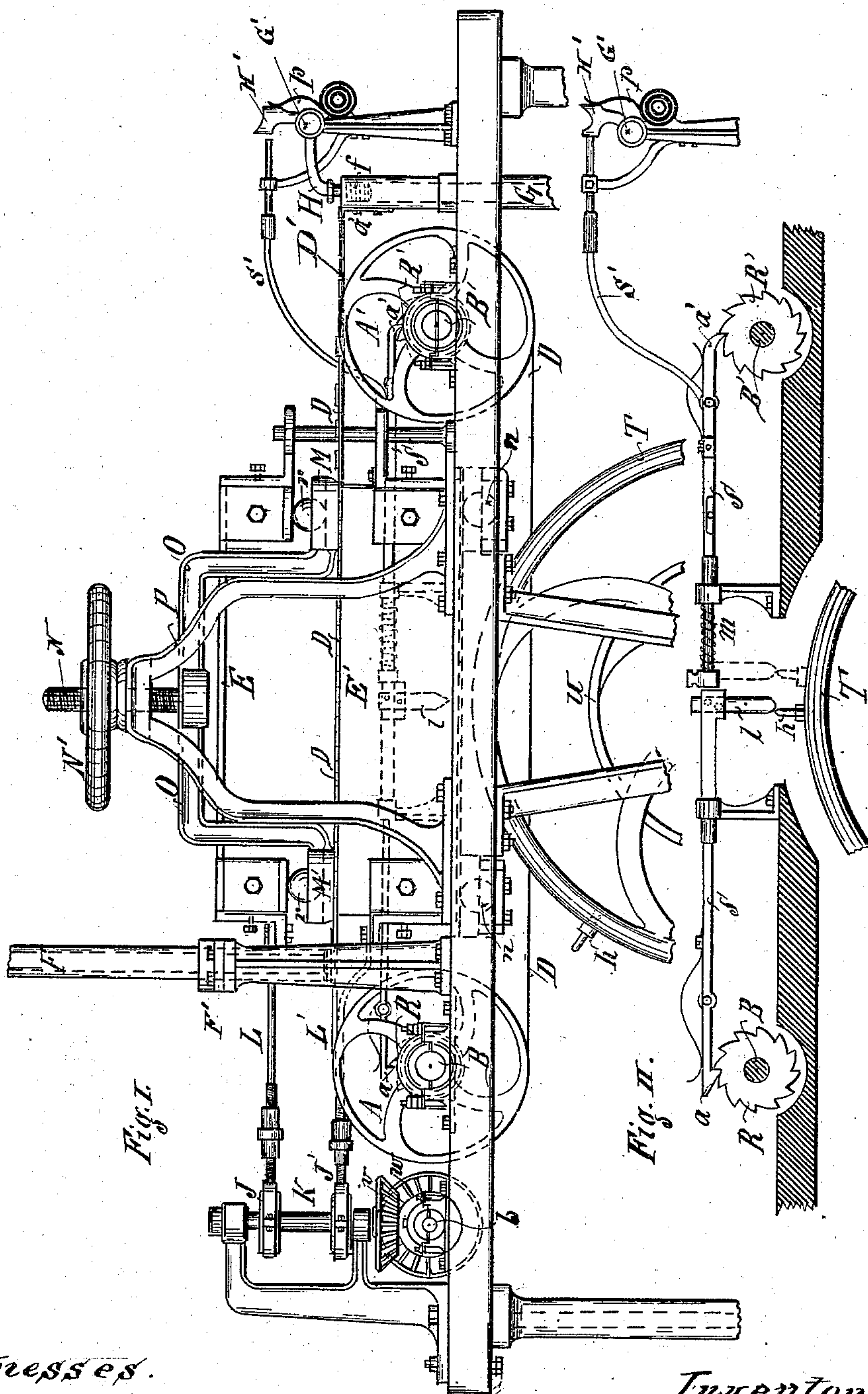
(No Model.)

3 Sheets—Sheet 1.

A. NEITSCH.  
TYPE GRINDING MACHINE.

No. 282,356.

Patented July 31, 1883.



*Witnesses.*

J. Gemmel, Jr.

*J. B. Pennington*

*Inventor.*

Albert Neitsch

per Henry E. Vander  
Attorney.



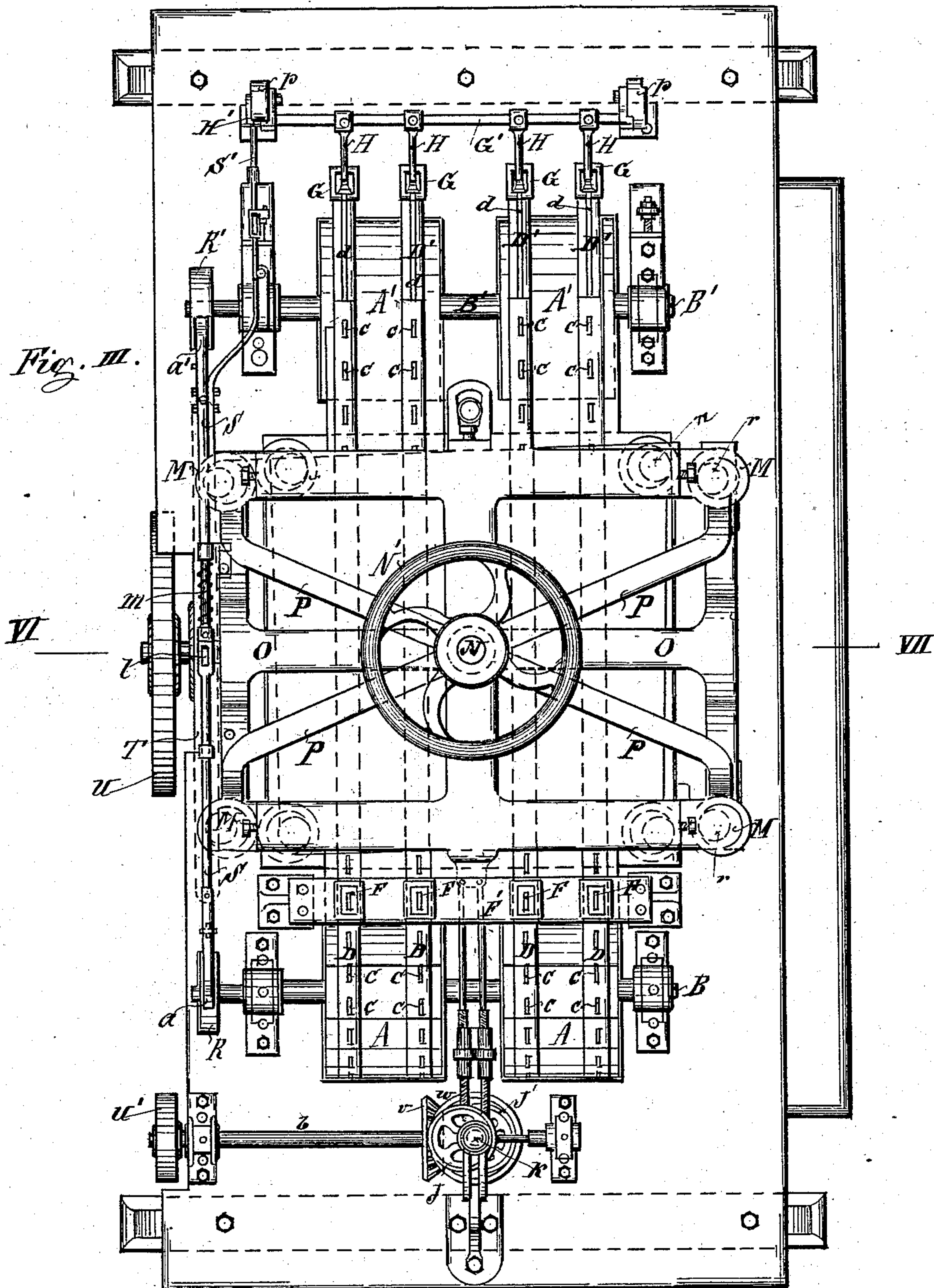
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J. Gemmich, Jr.,  
J. Gemmich, Jr.

Inventor.

Albert Neitsch  
per Henry E. Rader  
Attorney



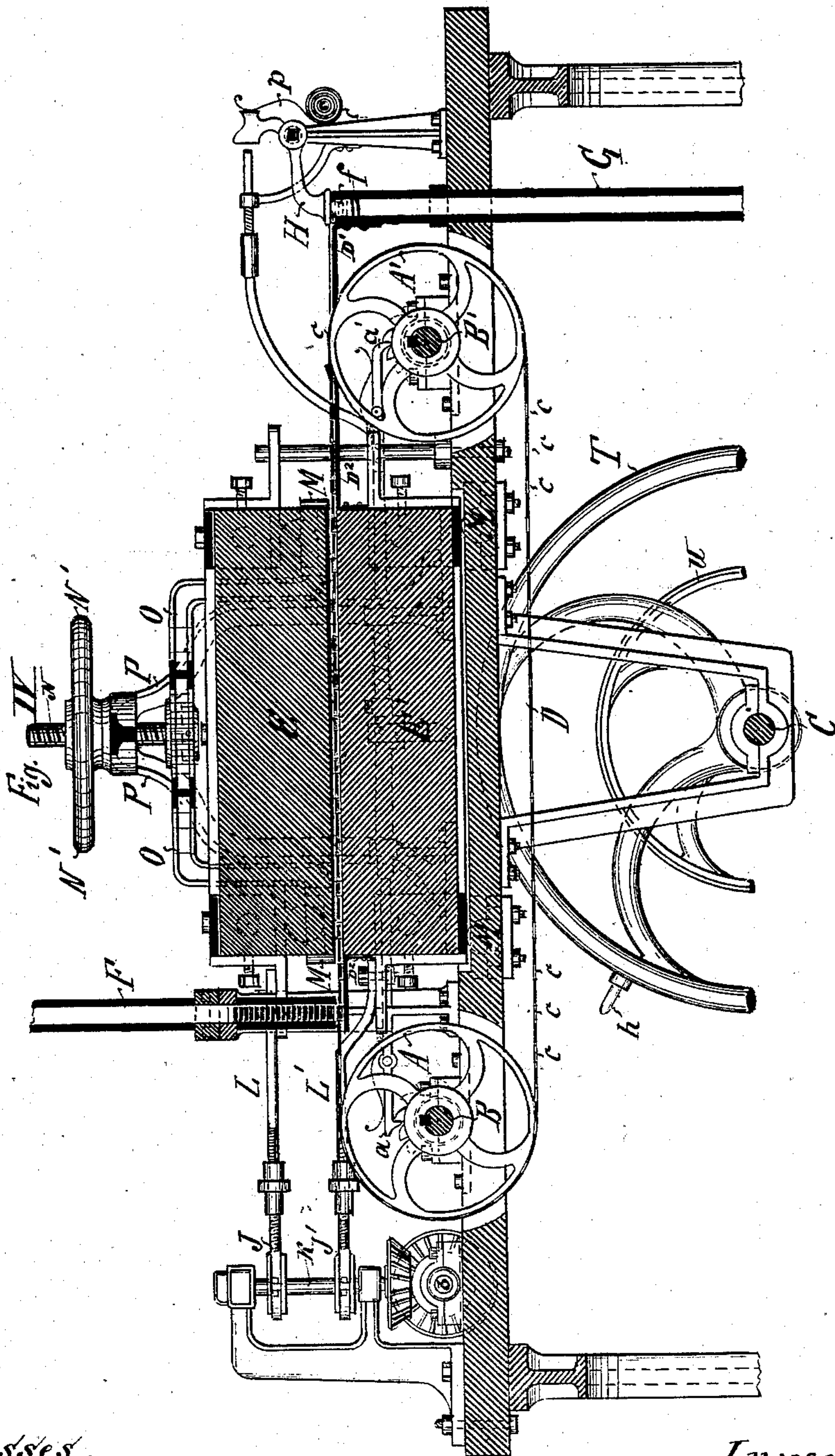
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TYPE GRINDING MACHINE.

No. 282,356.

Patented July 31, 1883.



Witnesses.  
John F. Allen  
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Attorney.



# UNITED STATES PATENT OFFICE.

ALBERT NEITSCH, OF LEIPSIC, GERMANY.

## TYPE-GRINDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 282,356, dated July 31, 1883.

Application filed December 12, 1882. (No model.) Patented in Germany November 13, 1881, No. 12,101.

10 all whom it may concern:

Be it known that I, ALBERT NEITSCH, a citizen of Germany, and a resident of Leipsic, in the Empire of Germany, have invented a new and useful Improvement in Type-Grinding Machines, of which the following is a specification.

The nature of my invention consists in the arrangement, in type-grinding machines, of pins or projections on the main pulley or fly-wheel, engaging with projections on a rod or rods provided with suitable hooks or pawls near their ends, operating ratchet-wheels attached to shafts, from which levers or arms are operated, acting upon spring-bottoms, or upon the type situated upon said bottoms in suitable hoppers or receptacles, whereby the ground and finished type are placed and collected in regular order in said hoppers or receptacles. In the accompanying drawings, Figure I represents a longitudinal side elevation of the upper part of my improved type-grinding machine. Fig. II represents a sectional detail view of part of the mechanism hereinafter referred to. Fig. III is a top view of the machine. Fig. IV is a longitudinal central section of the apparatus.

Similar letters represent similar parts in all the figures.

On a suitable frame shafts B B', supported in suitable bearings, are arranged, provided with drums or pulleys A A', over which steel belts or bands D are stretched. These steel bands have slots or perforations c to receive the type. Between the drums A A' the grinding-stones E E' are arranged in such a position that the upper part of the steel bands D passes between these grinding-stones E E'.

In the lower part of the frame of the machine (not shown in Fig. I) the driving-shaft C is arranged, which receives its motion either from a treadle, by means of a connecting-rod attached to the treadle and to a crank provided in said shaft C, or by a connection with power. This shaft C is provided with a fly-wheel, T, and a pulley, U, the latter being connected by a suitable band with the pulley U', fast on a shaft, b, and which latter communicates motion through the gear-wheels V W to the upright shaft K. The fly-wheel T is provided with one or more projecting pins, h, and the shafts B B' have ratchet-wheels R R'

attached on their ends. Directly above the fly-wheel T rods S S are arranged, moving in suitable guides, and provided at their ends with hooks a a', working into the teeth of the ratchet-wheels R R', respectively. In the central part of these rods a projecting pin, l, is attached, as well as a suitable spiral spring, m. This rod S, as represented in the drawings, is made in two parts abutting against each other, so that the motion communicated to one part shall be transmitted directly to the other part of said rod. This arrangement has been found more convenient, but the same may be made in one continued length. During the revolution of the fly-wheel T its projecting pin h comes in contact with the projecting pin l on the rod S, moving the same some distance, Fig. II, until the pin h passes the pin l, when the action of the spring m moves the rod S back again into its original position. This motion of the rod S causes the hooks a a' to operate the ratchet-wheels R R', turning the same, and consequently the shafts B B', a certain distance around, whereby the steel bands or belts D will be moved a certain distance each time. This amount of motion is about equal to the distance between the perforations c in the bands D. The reason for giving to the shafts B B', and consequently to the bands or belts D, an interrupted instead of a continued motion is to allow time for the type to be placed into the perforations c in the bands D and to be taken out of the same.

Near the shaft B, behind the pulley A, hoppers F are arranged, supported in a suitable frame, F', and terminating directly above the bands D. These hoppers receive the type to be ground, which fall upon the bands D into the perforations c in said bands while passing under the ends of said hoppers.

Suitable platforms are arranged between the pulley A and grindstone E', as well as between the latter and the pulley A', below the upper part of the band D, to support the type in the perforations c while passing that space. Behind the pulley A' similar platforms, D', are arranged to receive the type from the bands D, at the ends of which hoppers G are arranged, into which the type are pushed. The type carried forward in the perforations of the bands D will, when they pass the highest point of the pulley A' and the bands, follow



the periphery of the pulley downward, be slightly raised at their forward ends, thus passing out of the perforations *c* of the bands *D*, and pass over the edges of the tables *D'* and upon the same, when the next following type will push the same forward toward the hoppers *G*. These platforms *D'* are made with suitable grooves, *d*, to guide the type in their proper position while passing from the band *D* at the periphery of the pulley *A'* into the hoppers *G*. The hoppers *G* are provided with spring-bottoms *f*, kept in position by their friction against the inside of said hoppers. These spring-bottoms *f* are pistons made to fit tight into their respective hoppers *G*, either by springs at their edges or by suitable packing, to make the same tight by friction against the inner surfaces of the hoppers *G*, but capable of being moved or forced downward by means of the levers *H*, pressing upon the same or upon the type placed upon said spring-bottoms *f*, as hereinafter described. Above the mouths of these hoppers levers *H* are arranged attached to a shaft, *G'*. At the end of this shaft *G'* a lever, *H'*, is fastened.

To the end of the rod *S* a rod, *S'*, is attached, the other end of which comes in contact with this lever *H'* whenever the rod *S* is moved, as above described, giving thereby motion to said lever *H'*, and consequently, through its shaft *G'*, to the levers *H*. A suitable spring or springs, *p*, acting against the back of the lever *H'*, moves the same and the levers *H*, so as to force thereby the levers *H* into the mouth of hoppers *G*, pressing thereby upon the type which has been pushed into these hoppers *G*, and thereby forces the spring-bottom *f* the thickness of one type downward. At the time the next type is to be pushed into the hoppers the rod *S'* acts upon the lever *H'*, as above described, whereby the levers *H* are lifted sufficiently to allow the type to pass freely upon the type previously placed in said hopper.

The grinding-stone *E'* is supported on balls *n*, resting in suitable cavities in the main frame

of the machine, and the upper grinding-stone, *E*, is supported upon balls *r*, placed in suitable cups, *M*, attached to the ends of a frame, *O*. This frame *O* is guided between and attached and supported by means of a central screw, *N*, operated by a hand-wheel, *N'*, secured to the frame *P*, which is firmly attached to the main frame of the machine, by which arrangement this upper grinding-stone, *E*, can easily be raised or lowered, according to the thickness of the type to be operated upon. The grinding-stones *E E'* are connected through rods *L L'* to the eccentrics *J J'*, fast to the upright shaft *K*, and receive therefrom their required motion.

It will be perceived that by connecting or disconnecting the eccentrics the grinding-stones may either be kept stationary, or one stone only, or both stones, be moved, as may be desired and the nature of the type may require.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a type-grinding machine, in combination with the shafts *B B'*, provided with drums or pulleys *A A'*, supporting the endless steel bands or belts *D*, the combination of the ratchet-wheels *R R'*, rod or rods *S S'*, with hooks *a a'* at the ends, the projecting pin *l*, spring *m*, and the projecting pin or pins *h*, attached to the periphery of the fly-wheel or pulley *T*, arranged to operate in the manner and for the purpose substantially as described.

2. In a type-grinding machine, the receiving-hoppers *G*, with spring or frictional bottom *f*, in combination with the arms *H*, arm *H'*, spring *p*, rod *S'*, rod *S*, with pin *l*, spring *m*, and projecting pin *h*, attached to the fly-wheel *T*, the whole being arranged to operate substantially in the manner and for the purpose herein described and specified.

ALBERT NEITSCH.

Witnesses:

ROBERT BAUKAL,  
TH. DOREUADT.