

No. 782,798.

PATENTED FEB. 14, 1905.

H. W. RUGG.
SANDPAPERING MACHINE.
APPLICATION FILED JAN. 26, 1904.

3 SHEETS--SHEET 1.

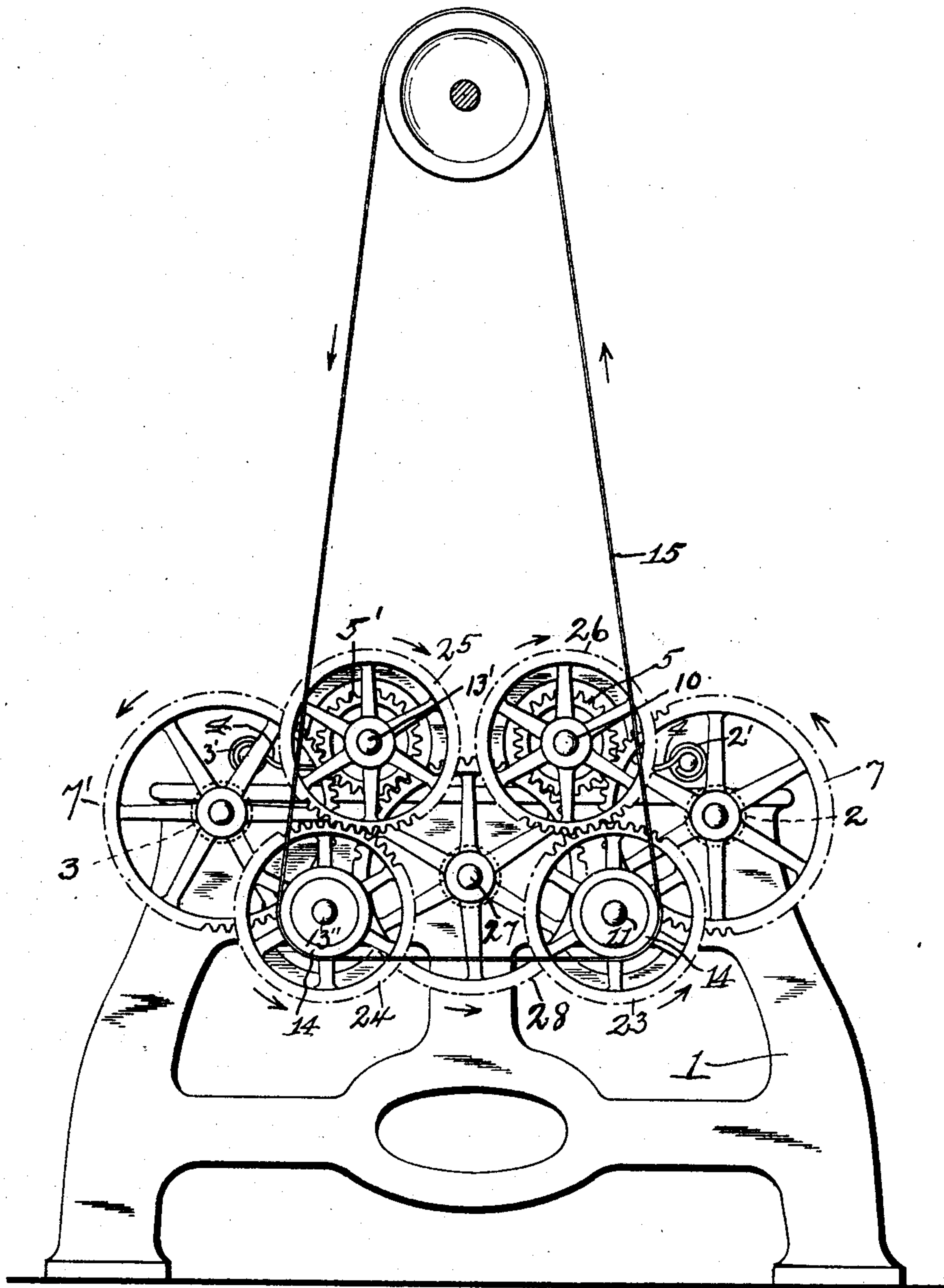


Fig. 1

Witnesses:

C. F. Mason.

E. T. Roberts

Inventor:
Harrison W. Rugg.
By his Attorney

By his Attorney

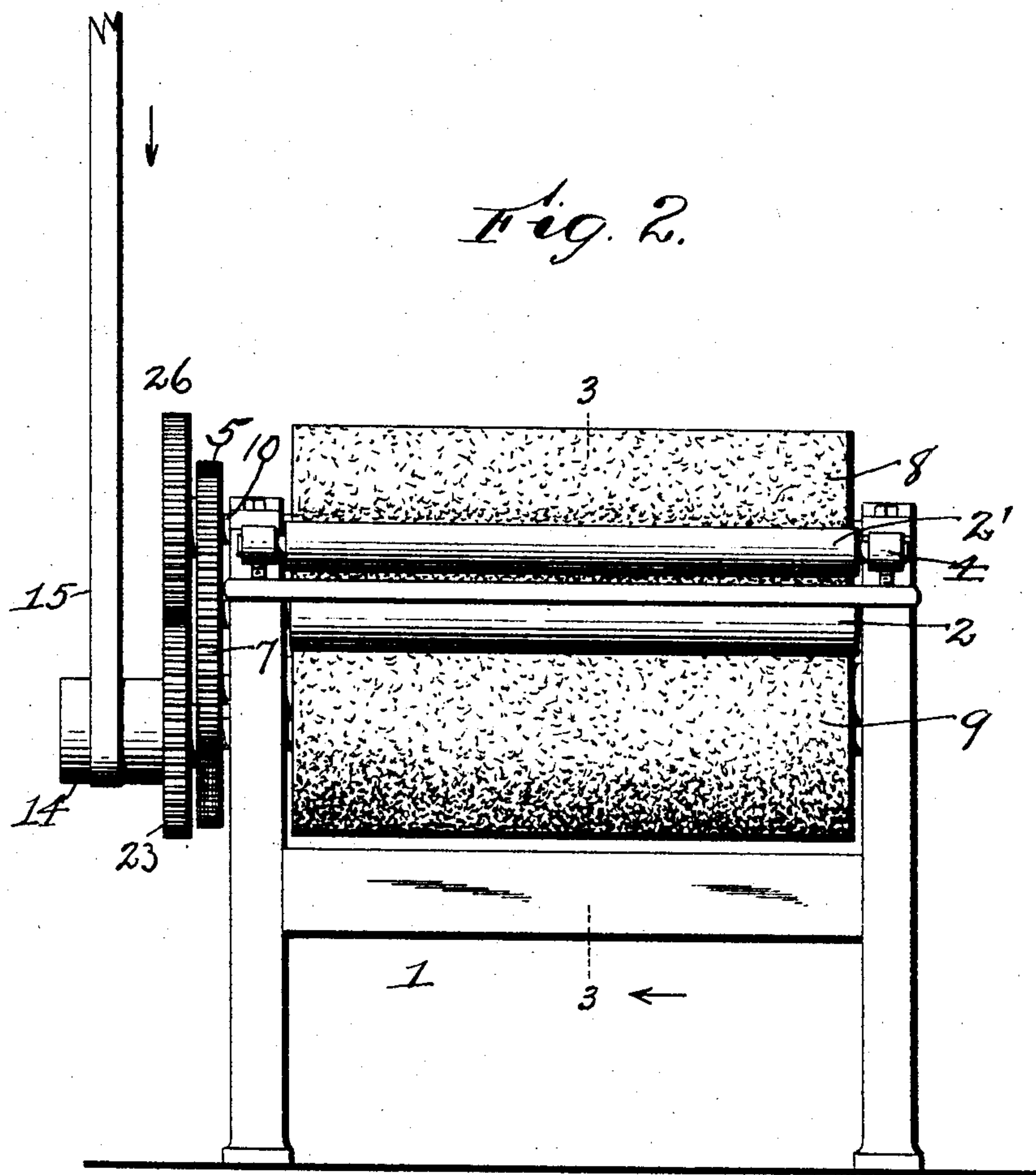
Order of the Court

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

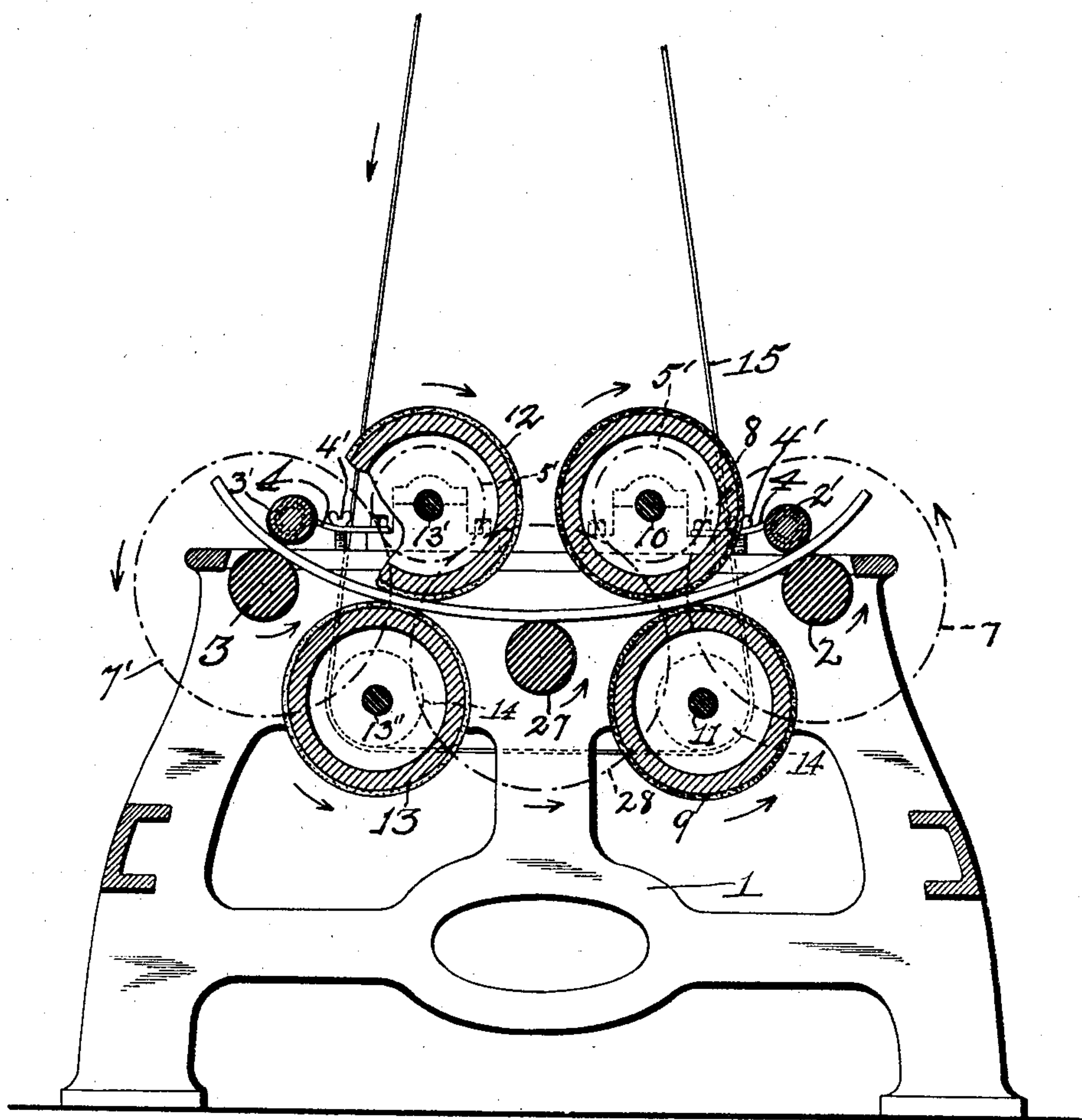


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

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SANDPAPERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 782,798, dated February 14, 1905.

Application filed January 26, 1904. Serial No. 190,663.

To all whom it may concern:

Be it known that I, HARRISON W. RUGG, of Sterling, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Sandpapering-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to abrading tools and implements, and particularly to a class thereunder known as "sandpapering-machines."

An object of the invention is to provide novel means for feeding a curved board or object through the machine whereby the rolls carrying sandpaper are brought into contact with the surfaces of the said curved board and serve to finish the said surface through the agency of mechanism to be hereinafter more fully set forth.

Furthermore, an object of the invention is to provide sanding or abrading surfaces of different degrees of coarseness, so that one set of rolls will act to remove the coarser grain and finish and the finer abrading-surface will tend to finish the said work-surface ready for the application of paint or other coatings.

Furthermore, an object of the invention is to provide novel means for effecting a unitary motion of the several elements of the combination whereby the feeding and abrading mechanism is operated from a single source of power.

Finally, an object of the invention is to provide a sandpapering-machine of the character noted which will possess advantages in points of simplicity, efficiency, and durability, proving at the same time comparatively inexpensive to produce and maintain.

With the foregoing and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and specifically claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts throughout the several views, in which—

Figure 1 is a view in side elevation, showing

a machine for abrading materials and surfaces embodying the invention. Fig. 2 is an end view thereof. Fig. 3 is a vertical longitudinal sectional view taken approximately centrally of the machine or on the line 3 3 of Fig. 2.

In the drawings, 1 indicates the frame, having suitable bearings for the shafts of the feeding-rolls 2 3, which are duplicated at each end of the machine, the said rolls being on the same horizontal plane. Each roll 2 and 3 has a coacting idle roll 2' 3', driven frictionally by means of the material operated upon passing between them and rolls 2 3. These idle rolls 2' 3' are adjusted by means of the spring-arms 4 and thumb-screws 4', so that they may bear with more or less pressure on their companion rolls, the feeding-rolls being rotated in the direction of the arrows shown in Fig. 3. The shafts of the rolls 2' 3' are journaled in bearings formed in the free ends of the spring-arms 4 4, the opposite ends of the arms being suitably secured to the frame of the machine. The thumb-screws 4' 4' are provided with enlargements, against which the spring-arms continually abut by their own resilience, the movement of the screw in one direction or the other operating to adjust the arms and the rolls carried thereby toward or from the feed-rolls 2 3. Each of the feeding-rolls 2 3 is positively driven through the medium of the pinions 5 and 5' on the shafts 10 and 13', which pinions mesh with the gear-wheels 7 and 7' on shaft of rolls 2 and 3 for the purpose of rotating said feed-rolls, as stated.

Abrading-rolls 8, 9, 12, and 13 are mounted on shafts 10 and 11, and similar rolls 12 and 13 are mounted on shafts 10, 11, 13', and 13'', respectively, the only difference being that the first-mentioned rolls 8 and 9 carry abrading material relatively coarser than that carried by the other rolls 12 and 13 in order that the rough finish of the wood may be first removed and that the second rolls, which carry the finer abrading material, may serve to smooth and polish the surface of the board or the material passed between them. On the shafts 11 and 13'' of the lower rolls are secured the pulleys

14, over which the power-belt 15 is driven for the purpose of rotating the shafts 11 and 13". Each of the shafts 11 and 13" carry gear-wheels 23 and 24, which mesh with the gear-wheels 25 and 26, secured to the shaft 13' and 10, respectively, so that the gear-wheels of the shafts or feeding-rolls and the gear-wheels on the abrading-rolls intermesh in order that they may all be driven in unison. Another idle feeding-roll 27 is mounted in the frame in the path of travel of the material to be operated upon and is designed for the purpose of supporting and aiding the feeding of the said material. The said shaft is positively driven through the medium of the gear-wheel 28, meshing with the pinions 5 and 5' on the shafts 10 and 13".

It will be seen from the foregoing that when the power-belt is moved in the direction of the arrows the pulleys 14 14 rotate the shafts or rolls and communicate motion through the gearing of the feeding shafts or rolls to the supporting-roll in the center of the frame. In practice the machinery would be rotated in the direction shown in the arrows, and the material here designated as a "curved" chair-back is fed into the rolls on the right-hand side of the frame, the said curved chair-back being directed between the coarse abrading-surfaces of the abrading-rolls 8 and 9, the said chair-back being then supported centrally on the shaft or roll 27 in order to prevent buckling of the material, said material being then passed between the abrading-surfaces of the other abrading-rolls and passed out between the feeding-rolls on the opposite end of the frame.

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

1. In an abrading-machine, the combination with an abrading-roll, of a plurality of suitably-supported resilient arms having free ends, shafts journaled in the free ends of the arms,

rolls carried by the shafts and means engaging the resilient members or arms intermediate their ends for effecting an adjustment of the rolls in either direction.

2. In an abrading-machine, the combination with an abrading-roll, of resilient arms secured to the machine at one of their ends, a shaft journaled in the free ends of the arms, a feed-roll on the shaft, set-screws passing through the resilient arms at points intermediate their ends, the screws engaging the machine to adjust the rolls in either direction and enlargements on the screws against which the arms automatically abut and by means of which they are moved in their adjustment.

3. An abrading-machine comprising a suitable frame, feed-rolls located at either end of the frame and a plurality of sets of abrading-rolls journaled in the frame, the primary set of abrading-rolls adapted to carry coarser abrading material than does the final set of abrading-rolls, the work passing from the preliminary to the final set of abrading-rolls.

4. An abrading-machine comprising a suitable frame, a plurality of sets of abrading-roll shafts journaled thereon, the shafts each carrying abrading-rolls and large and small gear-wheels, feed-roll shafts journaled in the frame, gears carried by the feed-roll shafts and adapted to mesh with the small gears on the abrading-roll shafts, the large gears of each set of abrading-rolls adapted to intermesh, an idle-roll shaft journaled in the frame, a gear-wheel thereon intermeshing with the small gear-wheels on the abrading-roll shafts, a driving a single means and means connecting one member of each set of abrading-roll shafts with the driving means to solely actuate the entire machine.

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Witnesses:

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