No. 847,651. PATENTED MAR. 19, 1907.

E. S. CRADDOCK.

APPARATUS FOR RENOVATING, FINISHING, AND SMOOTHING RUGS.

APPLICATION FILED JULY 6, 1905.

3 SHEETS—SHEET 1.

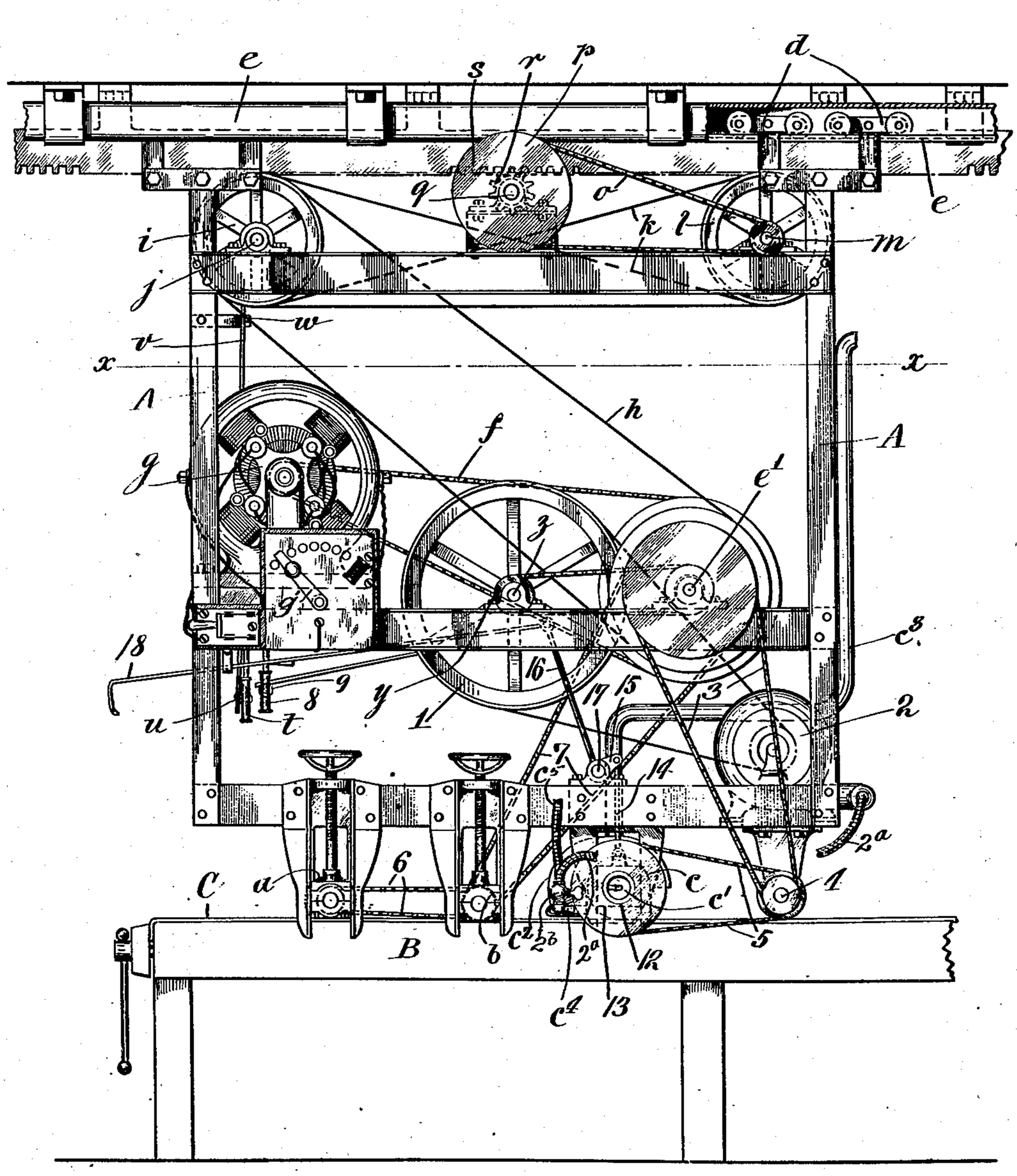

Fig. I

Witnesses
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Ivan Konigsberg

Edward S. Craddock Inventor
By his Attorney
George L. Rose

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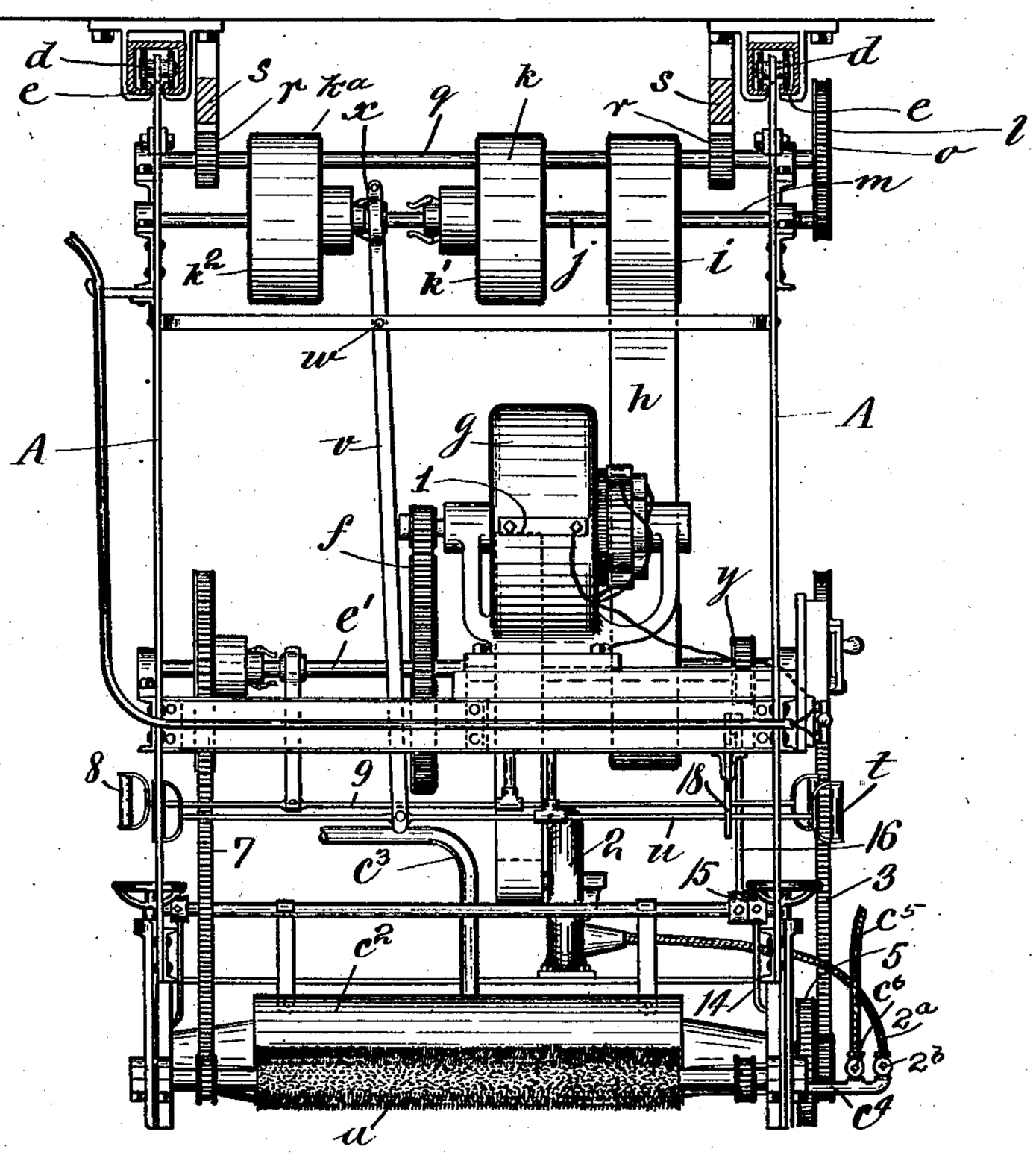
3 SHEETS—SHEET 2.

Fig. II



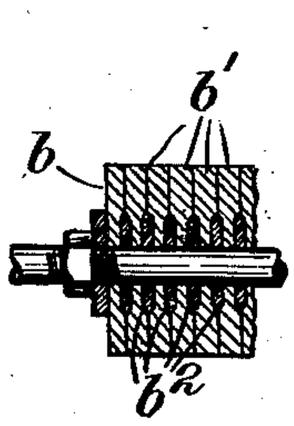


Fig. IV

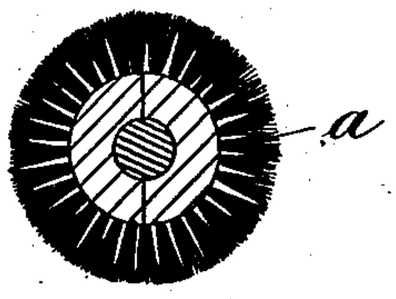


Fig. V

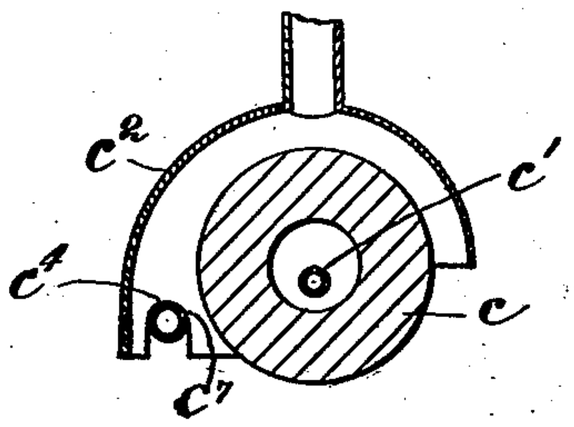


Fig. VI

Witnesses
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3 SHEETS—SHEET 3.

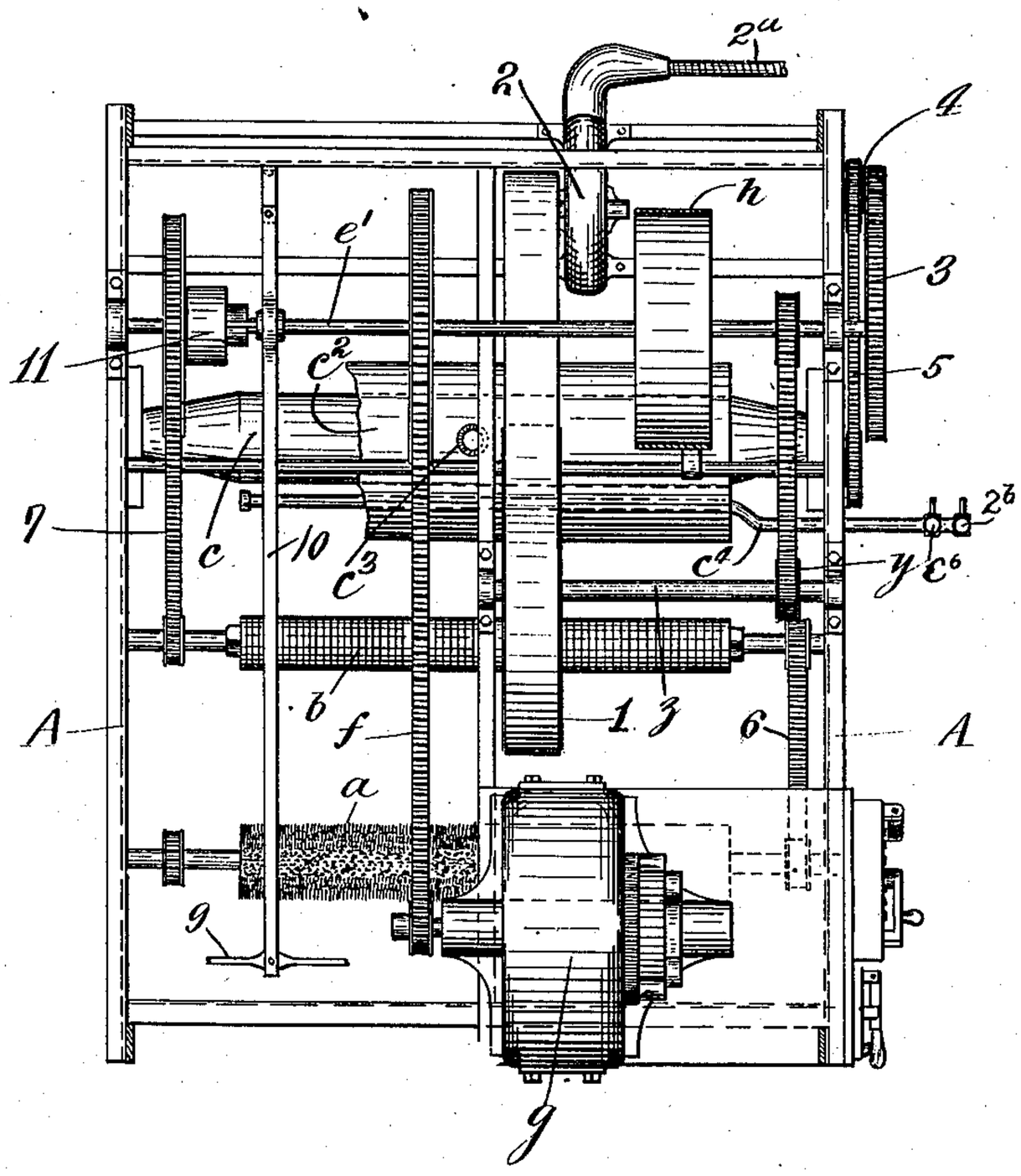

Fig. III

Witnesses
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By his Attorney
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UNITED STATES PATENT OFFICE.

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APPARATUS FOR RENOVATING, FINISHING, AND SMOOTHING RUGS.

No. 847,651. Specification of Letters Patent. Patented March 19, 1907.

Application filed July 6, 1905. Serial No. 268,590.

To all whom it may concern:

Be it known that I, EDWARD S. CRADDOCK, a citizen of the United States, residing at New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Apparatus for Renovating, Finishing, and Smoothing Rugs, of which the following is a specification.

My invention relates to apparatus for renovating, finishing, and smoothing rugs and other purposes, and consists in the special matters hereinafter set forth and claimed, it being understood that I do not limit my invention to the construction herein set forth, as the same may be greatly varied without departing from the spirit of my invention. I may state, however, in a general way that the apparatus which I preferably employ comprehends a table or support for the rug or other fabric and a traveling carriage provided with means for imparting to the rug the requisite gloss and brushing up the pile, so that a proper finish can be given to the rug.

In the drawing, Figure I is a side elevation of a machine in which my invention is embodied. Fig. II is an end view thereof. Fig. III is a plan view of the structure below the line *x x* of Fig. I. Fig. IV is a sectional view of a composite roll for effecting the saturation of the pile with moisture. Fig. V is a sectional view of a brushing-roll, and Fig. VI is a sectional view of an ironing-roll.

Before specifically describing the machine I will first describe the general process employed, merely stating for the present that the rollers and the brush are carried by the frame A, which is traversed, by means presently to be described, over a table B, upon which the rug C is suitably carried and fastened.

For the present I will describe the mode of operation of the brush and rollers and will hereinafter set forth the means by which the motions are given.

In the drawing, *a* indicates a brushing-roll, herein shown as a bristle-brush. (Shown in sectional detail in Fig. V.) *b* indicates a spreading-roll. This roll is preferably made of disk felt *b'* or other soft material held in place by intervening disks b^2 of wood or other stiff material. *c* indicates an ironing-roll, which is driven continuously when the motor is in motion. This ironing-roll is provided with an internal gas-burner *c'* to heat the same and is surrounded by a hood c^2, upon which leads a flue c^3. A Bunsen burner c^4 is provided to heat the space between the hood and the roll, and preferably directs its flame toward the roll. (Shown in Fig. VI.) All of these rolls are rotated at suitable speeds, the rolls *a b* preferably having a peripheral speed of, say, twelve hundred revolutions a minute and the roll *c* running at a lower rate of speed—say four hundred and eighty revolutions a minute.

In carrying out the process the rug is first spread upon the table and wetted and then the carriage is moved. The brush *a* serves to spread the water, and the felt roller serves to rub it into the rug. The smoothing-roller has the effect of smoothing the rug. Upon a reverse motion of the carriage the smoothing-roller continues to smooth the rug, the felt roller aids to put a sheen on the rug, and the brush serves to raise the pile. The speed of the carriage is preferably about twenty-five feet per minute, and the carriage is traversed back and forth five or six times, whereupon the pile of the rug will be found to have been very thoroughly smoothed and an attractive sheen imparted thereto, while at the same time the said pile will have been very thoroughly raised.

The process described can be carried out irrespective of the machine employed; but the type of machine which I preferably employ is shown in the drawings.

In the drawings, A indicates a frame. The frame A travels on hangers *d*, running in tracks *e*. This frame carries a main shaft *e'*, which is driven by a belt or sprocket chain *f* from a suitable electric motor *g*, which is controlled by a switch *g'*. The motions of the various parts are taken from this main shaft.

I will first describe the traverse motion. This traverse motion is derived from the main shaft, as follows: A belt *h* connects a pulley on the main shaft *e'* with a pulley *i* on a counter-shaft *j*, which shaft is by means of belts *k* and k^a on pulleys *k'* and k^2 operatively connected to two pulleys such as *l*, on another counter-shaft *m*, which in turn by means of a sprocket chain or belt *o* drives a pulley *p* on a driven shaft *q*, which is provided with pinions *r*, meshing with racks *s*, fixed to the ceiling or other support. The belt *k* is a crossed belt, while the belt k^a is an

ordinary open belt. The direction of rotation of shaft *m* will therefore depend upon which of the pulleys k^2 or k' is secured to shaft *j*. In order to control the backward and forward motion, a handle *t* is provided on a reciprocating rod *u*, which is connected to an arm *v*, pivoted at *w* and controlling a clutch *x*, by which either the pulley k' or k^2 may be thrown into action.

Belted or otherwise connected to the main shaft is a pulley *y*, carried by a counter-shaft *z*, which counter-shaft also carries a pulley 1, belted to a blower 2. This blower is driven while the machine is in action and serves for the better regulation of the heat to which the rug is subjected, as it is highly desirable that the heat shall be controlled to a very fine point. As the pipe C^4 which comprises the burner extends the entire length of the roll and is provided with perforations C^7 through which the gas passed to direct the flame toward the ironing-roll C, the ordinary gas-pressure is not sufficient to mix the gas with the air to form a Bunsen burner throughout the entire length of the pipe. The gas supplying the burner is led thereto through the pipe C^5 and is controlled by a valve C^6. The blower 2 is connected by a pipe 2^a and the valve 2^b on the burner C^4, and by the means of two valves C^6 and 2^b and the blower 2 the amount of gas and air may be properly regulated.

The smoothing or ironing roll is driven as follows: A belt or sprocket-chain 3 transmits power from the main shaft to a counter-shaft 4, from which counter-shaft power is transmitted by a belt or sprocket-chain 5 to the smoothing or ironing roll.

The brush and moisture-spreading rolls *a b* are shown as geared or belted together by a belt or sprocket-chain 6, the moisture-spreading roll *d* being driven from the main shaft by a belt or sprocket-chain 7. A handle 8 on a reciprocating rod 9 is provided for the purpose of throwing the last two rolls into operation. This is effected by means of a pivoted member 10 striking upon a clutch 11. As previously pointed out, the roll *c* runs continuously while the motor is in action.

I have also provided means whereby the ironing-roller may be raised and lowered. This roller is shown in Fig. I as carried in journals 12 support in sliding boxes 13, suspended by means of rods 14 from crank-arms 15. A link 16 is connected to the shaft 17 of the crank-arms and is operated by a handle 18, by which it may be raised and lowered.

It will be observed that the construction shown is extremely efficient and the process is carried out in a highly-efficient manner.

All the parts of the machine except the support for the rug move back and forth, and the frame carries its own motive power, together with controlling-levers for starting and stopping the motor, starting and stopping the brush and the felt roll, reversing the movement of the frame, and raising and lowering the ironing-roll. By this means I obtain in compact form mechanism which may be utilized for treating rugs of very large area on a floor-space which is but little longer than the rug itself.

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

1. In a machine for dressing rugs, the combination of a traveling carriage, rug-dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll carried thereby and a rug-support.

2. In a machine for dressing rugs, the combination of a traveling carriage, rug-dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll carried thereby, rug-support, and means for reversing the motion of the traveling carriage.

3. In a machine for dressing rugs, the combination of rug-dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll, a reciprocating carriage, means for reversing the motion of the carriage, and means for starting and stopping the rug-dressing device.

4. In a machine for dressing rugs, the combination of a traveling carriage suspended from above, rug-dressing devices comprising a brushing-roll, a distributing-roll and an ironing-roll carried thereby, and a source of power carried by the said carriage and adapted to drive the rug-dressing device and to traverse the carriage.

5. In a rug-dressing device, the combination of rug-dressing devices comprising a brushing-roll, a distributing-roll and an ironing-roll, a support therefor, support for the rug, a carriage and means carried by the carriage for effecting a reciprocal motion of translation between the rug-dressing devices and the rug-support.

6. In a dressing-machine, a carriage, a motor carried thereby for reciprocating said carriage, a movable dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll carried by said carriage, a driving connection from said motor to said dressing device, and means for disconnecting said device from said motor.

7. A dressing-machine, including a carriage, a motor carried thereby for moving said carriage, a dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll driven from said motor, and means for raising and lowering said dressing device.

8. A dressing-machine, including a carriage, guide-tracks therefor, means for reciprocating said carriage on said tracks, a dressing device comprising a brushing-roll, a dis-

tributing-roll and a smoothing-roll, and means for starting and stopping the movement of said carriage without stopping the movement of said dressing device.

9. A dressing-machine, including a reciprocating carriage, a motor carried thereby for reciprocating said carriage, a dressing device comprising a brushing-roll, a distributing-roll and a smoothing-roll, means of connection between said motor and said dressing device, and means for raising and lowering said dressing device independently of the movement of said carriage.

10. A dressing-machine, including a reciprocating carriage, an ironing-roll, means for rotating said roll, a burner for heating said roll, and an air-pump carried by said carriage for supplying air to said burner.

11. In a machine for dressing rugs, the combination of a traveling carriage and a stationary rug-support, means carried by said carriage for reciprocating it over the rug-support, a brushing-roll, and a heated ironing-roll carried by said carriage and operated by the said carriage-operating means.

12. In a machine for dressing rugs, the combination of a traveling carriage and a stationary rug-support, means carried by said carriage for reciprocating it over the rug-support, a distributing-roll comprised of felt disks, and an ironing-roll carried by said carriage and operated by the said carriage-operating means.

13. In a machine for dressing rugs, the combination of a traveling carriage and a stationary rug-support, means carried by said carriage for reciprocating it over the rug-support, a brushing-roll, and a felt distributing-roll carried by said carriage and operated by said carriage-operating means.

14. In a machine for dressing rugs, the combination of a traveling carriage and a stationary rug-support, means carried by said carriage for reciprocating it over the rug-support, and a dressing device comprising a brushing-roll, a felt distributing-roll, and a heated ironing-roll.

15. A machine for dressing rugs, including a reciprocating carriage, an ironing-roll, means for rotating said roll, a hood covering said roll, a burner between said hood and said roll directing its flame upon said roll, and an air-pump carried by said carriage for supplying air to said burner.

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Witnesses:
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