

No. 618,620.

Patented Jan. 31, 1899.

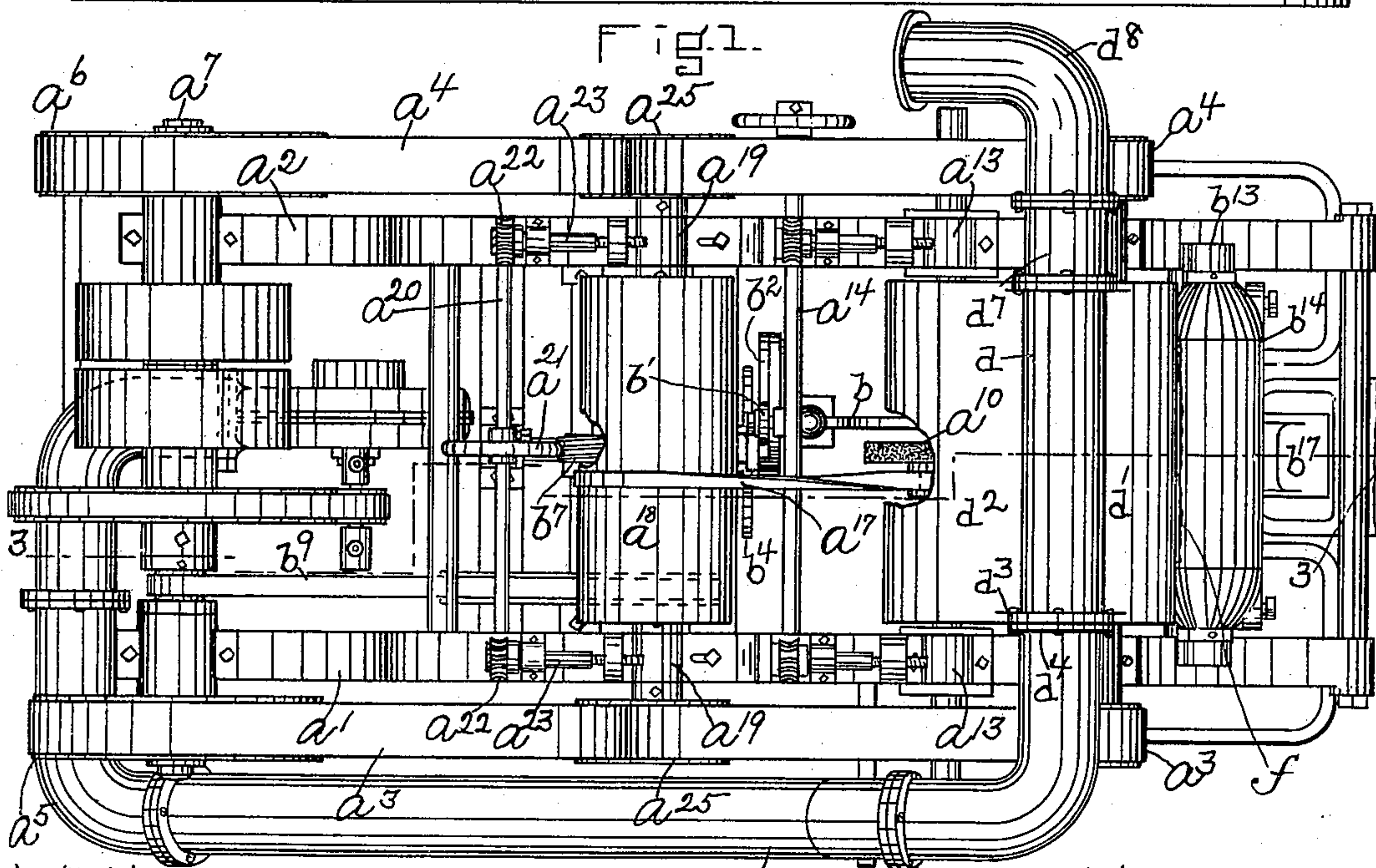
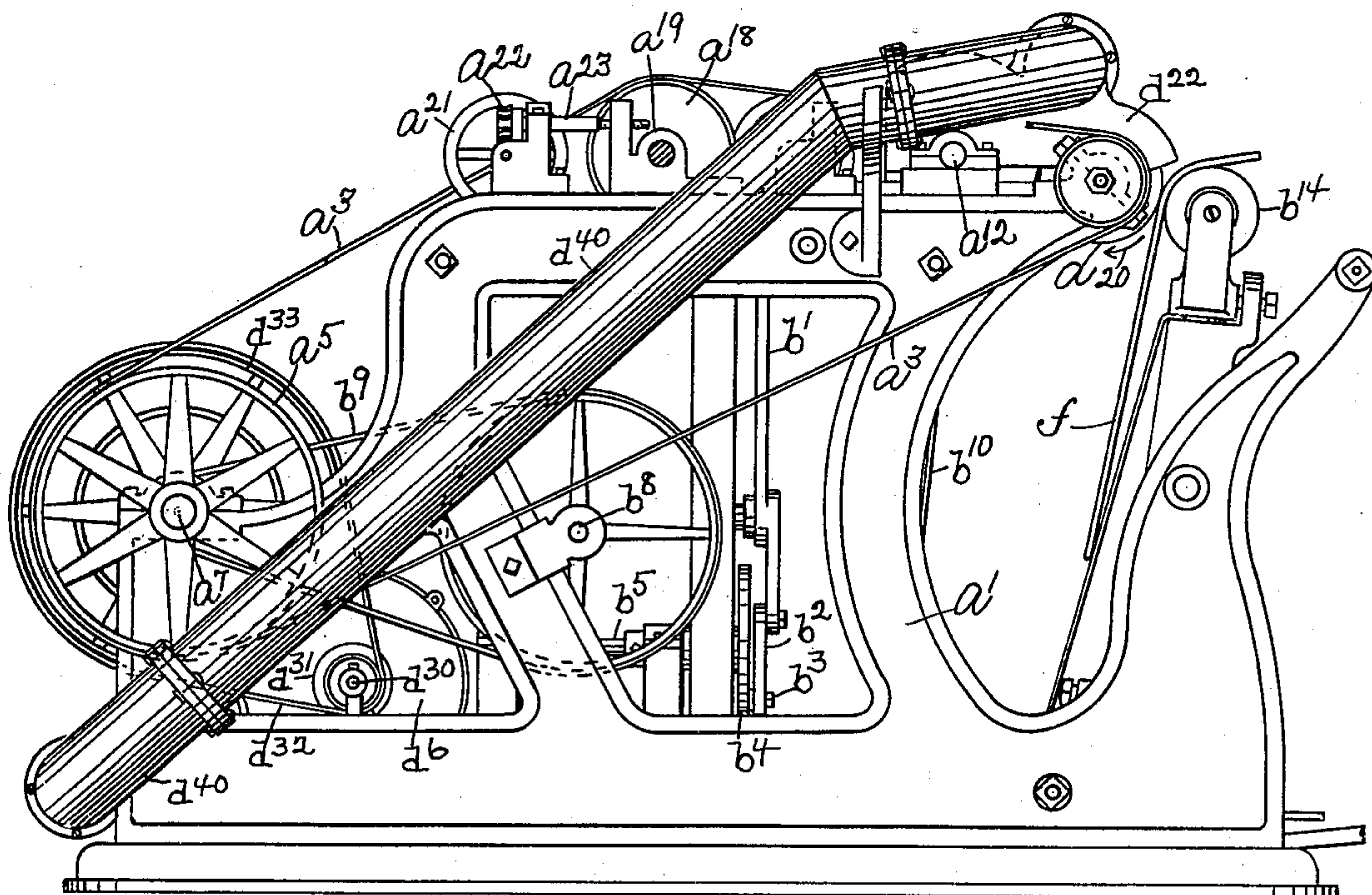
J. ROOD.

APPARATUS FOR SHAVING HIDES OR SKINS.

(Application filed Nov. 11, 1898.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES.

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Fig. 2.

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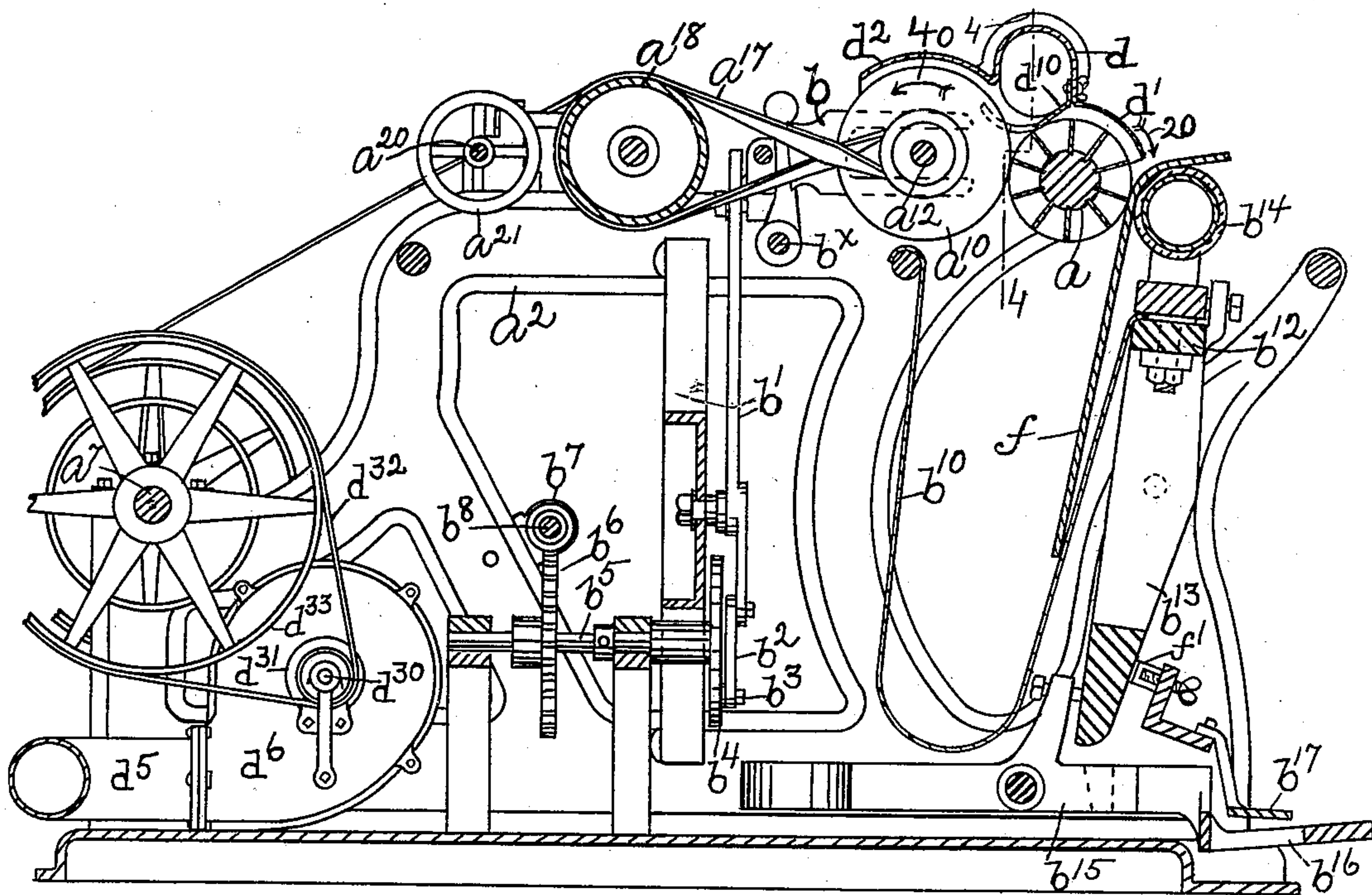


Fig. 3.

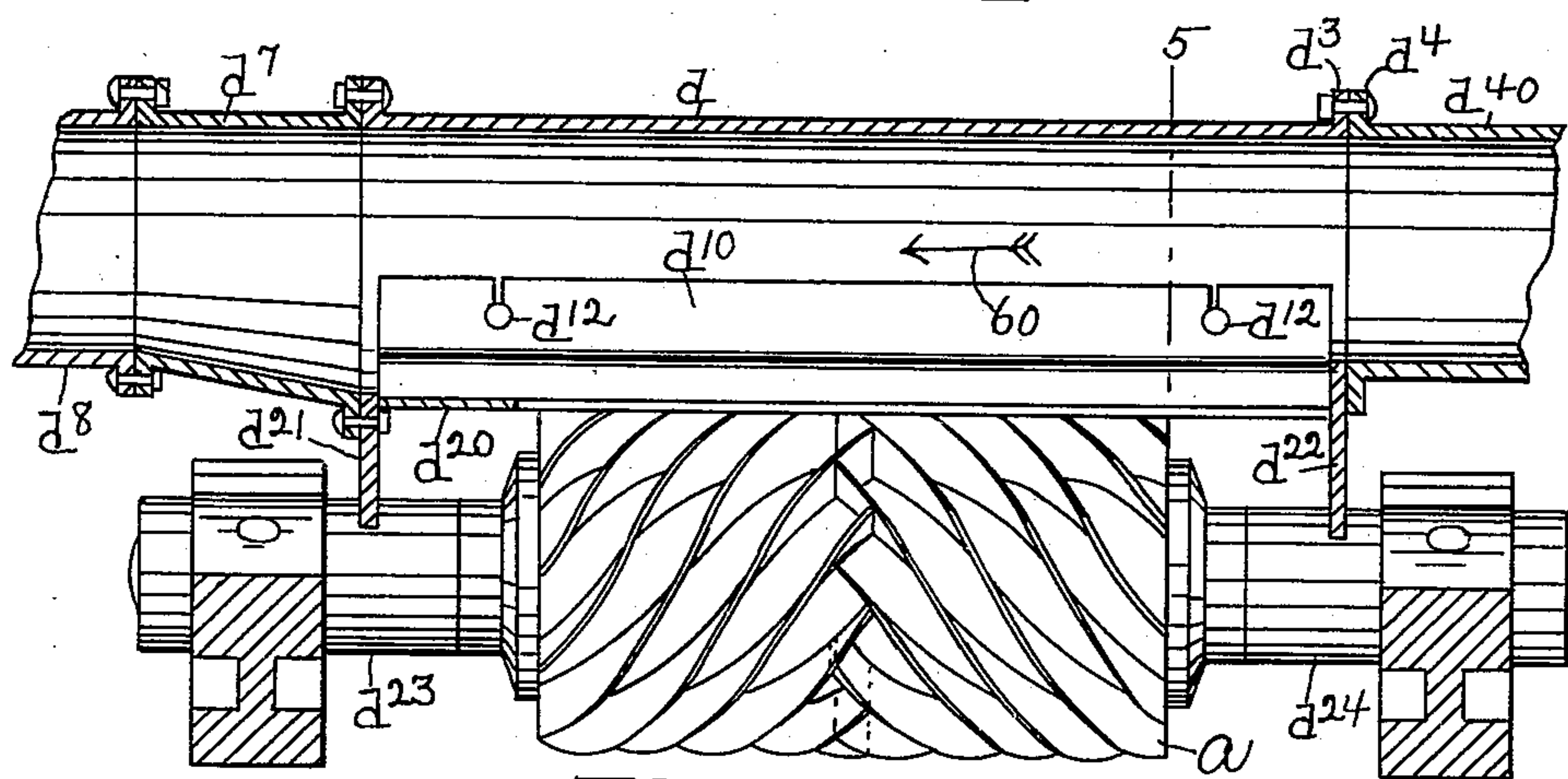


Fig. 4.

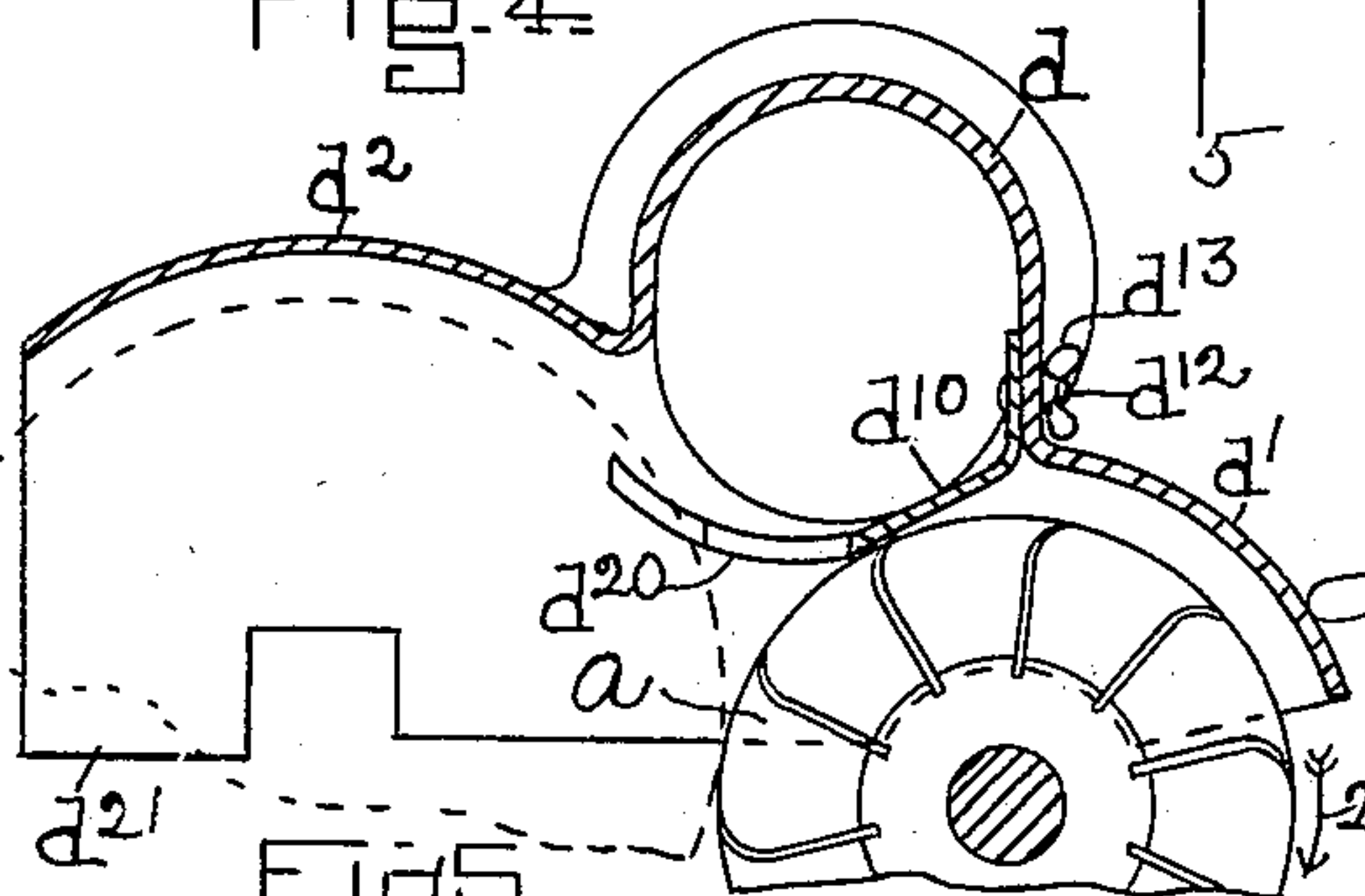


Fig. 5.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

JOHN ROOD, OF DANVERS, MASSACHUSETTS.

## APPARATUS FOR SHAVING HIDES OR SKINS.

SPECIFICATION forming part of Letters Patent No. 618,620, dated January 31, 1899.

Application filed November 11, 1898. Serial No. 696,122. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ROOD, a citizen of the United States, residing in Danvers, in the county of Essex and State of Massachusetts, have invented an Improvement in Machines for Shaving Hides or Skins, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to machines for shaving hides and skins, and is herein shown as embodied in a machine of substantially the construction shown and described in United States Patent No. 339,323, granted to me April 6, 1886.

Shaving-machines of the class referred to require that the blades of the shaving roll or tool should be kept sharp, which requires frequent grinding of the same. In practice the blades of the shaving-roll are ground while the machine is in operation, and as a result fine particles of steel and emery-dust are thrown upward by the grinding-wheel, which revolves in a direction opposite to the shaving-roll. The fine particles of steel and emery-dust settle or drop down upon the shaving-roll between the blades thereon and in the revolution of the said shaving-roll are thrown outward against the hide or skin, which results in the said hide or skin being discolored by the fine particles of steel and the emery-dust. This discoloration of the skin is especially noticeable upon what are known as "light-colored" skins, such as used in the manufacture of russet and tan colored shoes, and the value of the skins is greatly lessened by the discoloration, which appears in streaks or spots and which was not so noticeable or objectionable when the skin was finished with a black color.

My present invention has for its object to avoid this defect in machines of the class described, especially prominent when light-colored skins are shaved, and I accomplish my object by maintaining a current or draft of air above the point of contact of the grinding-wheel with the blades of the shaving-roll, by which the fine particles of steel and emery-dust are rapidly carried away from over the shaving-roll and are prevented from being

deposited upon the roll and then thrown off by the same onto the surface of the skin which has been shaved, thereby avoiding discoloration of the skins, especially light-colored ones, and consequent loss in value of the same, and at the same time rendering the shaving-machine available for this class of work.

I prefer to maintain the air-current above the shaving-roll and substantially parallel therewith.

Figure 1 is a side elevation of a shaving-machine embodying this invention; Fig. 2, a top or plan view of the machine shown in Fig. 1; Fig. 3, a section of the machine on the line 3 3, Fig. 2; Fig. 4, a sectional detail on an enlarged scale and taken on the line 4 4, Fig. 3; and Fig. 5, a sectional detail on an enlarged scale, taken on the line 5 5, Fig. 4.

In the machine herein shown as embodying this invention the shaving-roll *a* is journaled in the side frames *a'* *a*<sup>2</sup> at one end thereof and is driven in the direction indicated by arrow 20 by belts *a*<sup>3</sup> *a*<sup>4</sup>, passed about pulleys *a*<sup>5</sup> *a*<sup>6</sup> on the main shaft *a*<sup>7</sup>, supported in bearings at the opposite end of the side frames *a'* *a*<sup>2</sup>.

The shaving-roll *a* may and preferably will be of substantially the construction shown and described in United States Patent No. 383,914, dated June 5, 1888. The shaving-roll *a* has coöperating with it an emery or other grinding-wheel *a*<sup>10</sup>, which is loose on a shaft *a*<sup>12</sup>, having bearings in movable boxes *a*<sup>13</sup>, supported by the side frames *a'* *a*<sup>2</sup> and movable toward and from the shaving-roll by a hand-operated worm-shaft *a*<sup>14</sup>, substantially as in the patents above referred to.

The emery-wheel *a*<sup>10</sup> is driven by a cross-belt *a*<sup>17</sup> from a drum *a*<sup>18</sup>, having its shaft mounted in movable boxes *a*<sup>19</sup>, supported by the side frames of the machine and adjusted toward and from the grinding-wheel by a worm-shaft *a*<sup>20</sup>, provided with a hand-wheel *a*<sup>21</sup> and with worms (not shown) which engage worm-gears *a*<sup>22</sup> on shafts or screws *a*<sup>23</sup> attached to the said boxes.

The drum *a*<sup>18</sup> is rotated by the belts *a*<sup>3</sup> *a*<sup>4</sup>, which engage pulleys *a*<sup>25</sup> on the drum-shaft. The grinding-wheel *a*<sup>10</sup> is moved longitudinally on its shaft *a*<sup>12</sup> by a forked arm *b*, loosely mounted on a guide-rod *b*<sup>x</sup> and attached to a lever *b'*, joined by a crank-arm or link *b*<sup>2</sup> to



a crank-pin  $b^3$  on a disk  $b^4$ , fast on a shaft  $b^5$ , provided with a worm-gear  $b^6$ , in mesh with a worm  $b^7$  on a shaft  $b^8$ , driven from the main shaft by a belt  $b^9$ . Below the shaving-roll  $a$  is a substantially U-shaped metal plate or apron  $b^{10}$  to support the hide or skin off from the floor, one end of said plate being attached to a cross-bar  $b^{12}$ , secured to side levers  $b^{13}$ , which carry the skin-supporting or bed roll  $b^{14}$ , against which the skin rests while under the action of the shaving-roll.

The position of the roll  $b^{14}$  is controlled by the foot-lever or treadle  $b^{15}$ , as shown in Fig. 3, the said treadle having an opening  $b^{16}$  to permit it to pass by a stationary support or rest  $b^{17}$  for the foot of the operator. The grinding-wheel  $a^{10}$  is revolved in the direction opposite to the shaving-roll, as indicated by the arrow 40, and from an inspection of Fig. 3 it will be seen that when the grinding-wheel is acting upon the blades of the shaving-roll to sharpen the same the fine steel particles and the emery-dust are thrown upward above the shaving-roll and that if provision were not made said particles of steel and dust would drop upon the shaving-roll between the blades thereon and would be projected outward and against the skin supported upon the bed-roll  $b^{14}$  and that this dust and particles of steel would be projected upon the portion of the skin which has been shaved by the roll  $a$ .

The injurious action upon the skins, and especially light-colored skins, such as now largely used, may be avoided in accordance with this invention by providing the machine with a conduit for the fine particles of steel and emery-dust, located above the shaving-roll, and through which a current of air is passed, so as to carry the fine particles of steel and emery-dust thrown upward away from the vicinity of the shaving-roll, the said current of air being maintained while the emery-wheel is in engagement with the shaving-roll and preferably while the machine is in operation, so that the fine particles of steel and the emery-dust are removed from above the shaving-roll substantially as fast as formed and substantially little opportunity is afforded for the gravitation of the said particles and dust down upon the shaving-roll.

The conduit referred to may and preferably will be made as herein shown and consists of a substantially cylindrical casting  $d$ , provided with front and rear curved flanges  $d'$   $d^2$  and made of a length substantially equal to the distance between the side frames  $a'$   $a^2$ , the casting  $d$  being open at its under side for substantially the length of the shaving-roll. (See Fig. 4.) The conduit  $d$  is provided at one end with a flange  $d^3$ , which is bolted to a like flange  $d^4$  on the end of a pipe  $d^{40}$ , connected to the eduction-pipe  $d^5$  of a blower  $d^6$ , and at its opposite end said conduit is provided, as shown, with a tapering nozzle  $d^7$ , bolted thereto and to a cylindrical pipe  $d^8$ , which is bent or curved toward the rear end of the ma-

chine (see Fig. 2) and through which the particles of steel and dust may be blown away from the vicinity of the skin on the roll  $b^{14}$ .

The opening in the under side of the conduit  $d$  may and preferably will be partially closed above the shaving-roll  $a$  by a deflector or shield  $d^{10}$ , extended substantially the length of the conduit and adjustably secured to the front wall of the conduit, as by screws  $d^{12}$  and nuts  $d^{13}$ , the said shield extending from the front wall of the conduit back over the shaving-roll, so that any particles of steel or emery-dust which might drop by gravity toward the shaving-roll may be deflected toward and into the path of the upwardly-moving particles thrown upward by the emery-wheel and be again carried upward into the current of air flowing at a high velocity through the conduit  $d$  in the direction indicated by the arrow 60, Fig. 4.

The conduit  $d$  at its outlet end and beyond the roll  $a$  is provided, as shown, with a shelf or lip  $d^{20}$ , preferably forming a part of the deflector or shield  $d^{10}$ , and which acts to catch any particles carried by the air-current against the side piece  $d^{21}$  of the conduit. The conduit  $d$ , the curved flanges  $d'$   $d^2$ , and the side pieces  $d^{21}$   $d^{22}$  may and preferably will be made in one casting, and the side pieces  $d^{21}$   $d^{22}$  may rest upon the bearings  $d^{23}$   $d^{24}$  for the shaft of the shaving-roll. The blower  $d^6$  is located between the side frames, as shown, and has its fan-shaft  $d^{30}$  provided with a small pulley  $d^{31}$ , driven by a belt  $d^{32}$  from a large pulley  $d^{33}$  on the main shaft, and the air drawn into the blower at its side is forced at high velocity through the pipe  $d^{40}$  and conduit  $d$  out through the discharge-pipe  $d^8$ .

In operation the hide or skin  $f$  is placed over the bed-roll  $d^{14}$  with its lower end resting on the support or metal apron  $b^{10}$ , the said roll at such time being thrown back from the shaving-roll by a spring  $f'$  and the weight of said roll.

In the drawings the bed-roll  $b^{14}$  is shown in its operative position, and the skin is drawn up by the operator against the action of the shaving-roll  $a$ , which is revolved in the direction of arrow 20. When the grinding-wheel  $a^{10}$  is in engagement with the blades of the shaving-roll, the fine particles of steel and emery-dust are carried upward into the conduit  $d$ , the open lower part of which is located in a substantially vertical plane through the point of contact of the grinding-wheel with the blades of the shaving-roll, and the particles of steel and emery-dust thus carried into the conduit meet the current of air forced through said conduit at a high velocity and are carried by said current away from the shaving-roll and are discharged into the air toward the rear of the machine. Any particles which might gravitate down on the roll are arrested by the shield  $d^{10}$  and deflected back toward the upwardly-moving current caused by the rapidly-revolving grinding-wheel and shaving-roll, which again carries the said par-



ties into the conduit *d*, where they again meet the current of air.

From the above description it will be seen that the fine particles of steel and emery-dust are removed from the vicinity of the shaving-roll substantially as fast as formed and that discoloration of the skins is prevented or reduced to a minimum, thereby increasing the commercial value of the machine, as it enables light-colored skins, which are now very largely used in the manufacture of boots and shoes, to be shaved without danger of spoiling the skin, for the purpose specified.

I have herein shown one construction of conduit which I prefer; but I do not desire to limit my invention to the particular construction shown, as good results may be obtained with other forms of conduit, providing it is located above the shaving-roll and grinding-wheel in position to receive the current of fine particles of steel and emery-dust and convey them away from over the shaving-roll, so as to prevent their being deposited thereon and thrown by said roll onto the skin after it has been shaved by said roll.

I claim—

1. The combination with a machine for shaving hides and skins provided with a rotatable shaving-tool and with a rotatable grinder cooperating therewith, of a conduit located above said shaving-roll and into which the fine particles of steel and dust are thrown by the said grinder, and means to create a current of air through said conduit above and away from said shaving-roll, for the purpose specified.

2. The combination with a machine for shaving hides and skins provided with a rotatable shaving-tool and with a rotatable grinder cooperating therewith, of a conduit located above said shaving-roll and extended substantially the length of the same and provided with an opening in its bottom for the entrance of fine particles and dust thrown upward by the said grinder, and having an outlet for said particles and dust above the level of the shaving-roll, and means to create a current of air through said conduit above and away from said shaving-roll, substantially as described.

3. The combination with a machine for shaving hides and skins provided with a rotatable shaving-tool and with a rotatable grinder cooperating therewith, of a conduit

located above said shaving-tool and provided with an opening in its bottom substantially in a vertical line with the point of contact of the grinder with said shaving-tool, a shield extended from one wall of said conduit over the said shaving-tool and toward the said plane of contact, and means to create a current of air through said conduit, substantially as described.

4. The combination with a machine for shaving hides and skins provided with a rotatable shaving-tool and with a rotatable grinder cooperating therewith, of a conduit located above said shaving-tool and provided with an opening in its bottom substantially in a vertical line with the point of contact of the grinder with said shaving-tool, an adjustable shield extended from one wall of said conduit over the said shaving-tool and toward the said plane of contact, and means to create a current of air through said conduit, substantially as described.

5. The combination with a machine for shaving hides and skins provided with a rotatable shaving-tool and with a rotatable grinder cooperating therewith, of a conduit located above the shaving-roll and provided with an opening in its bottom, a blower driven from a shaft of said machine and having its suction-pipe connected to the inlet end of the said conduit on one side of the machine, and an outlet-pipe connected to the opposite end of the conduit, substantially as described.

6. The combination with a machine for shaving hides and skins provided with a rotatable shaving-tool and with a rotatable grinder cooperating therewith, of a conduit located above the shaving-tool and provided with an open bottom having a shield or deflector covering said roll and extended toward the vertical plane of contact of the grinder with said tool, a blower driven from a shaft of the machine, a pipe connecting the suction-port of said blower with the air-inlet end of said conduit, and a discharge or outlet pipe attached to the opposite end of the conduit, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN ROOD.

Witnesses:

JAS. H. CHURCHILL,  
J. MURPHY.