

(No Model.)

G. L. ESTER.  
LAMPBLACK MACHINE.

No. 507,220.

Patented Oct. 24, 1893.

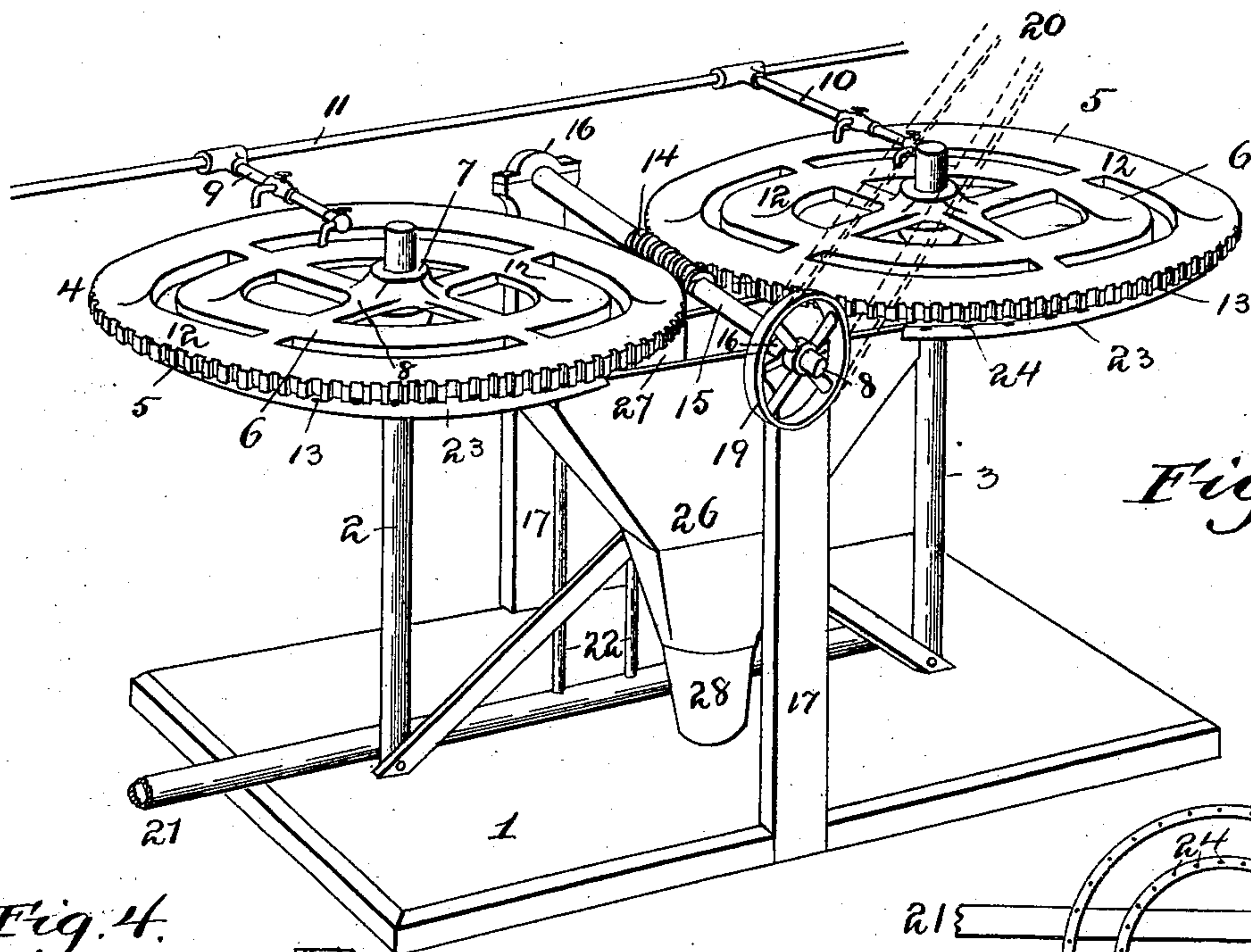
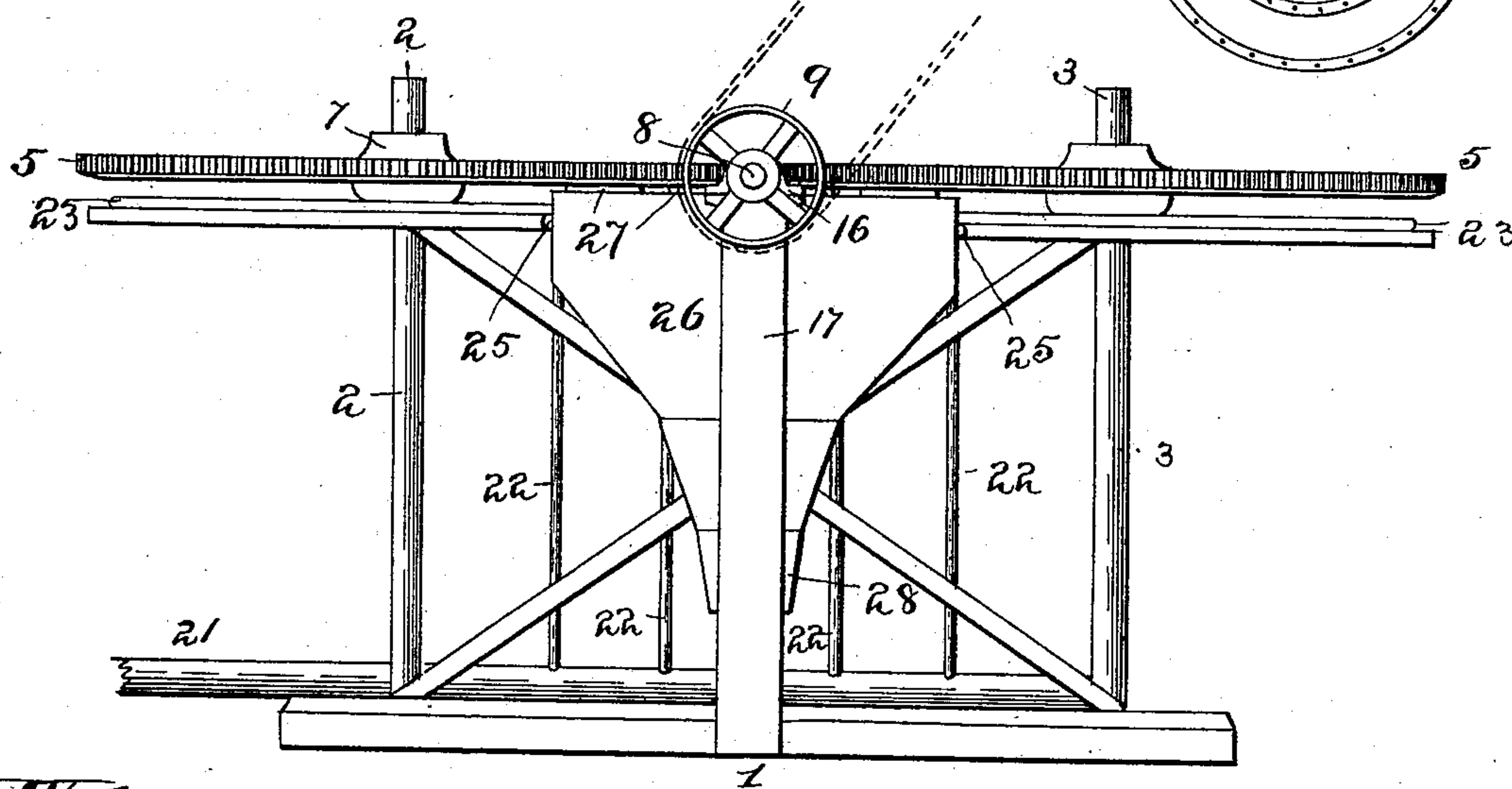
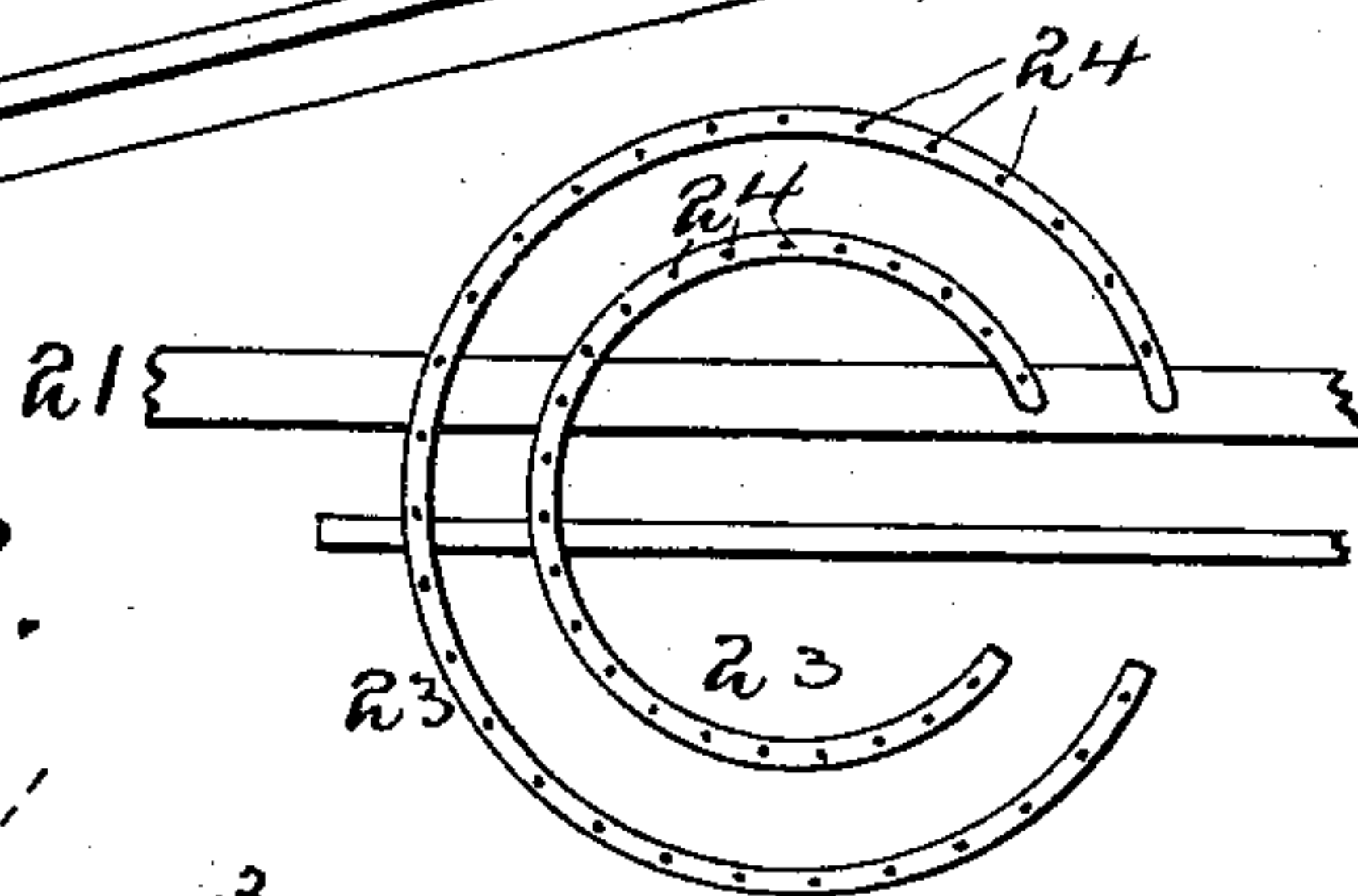
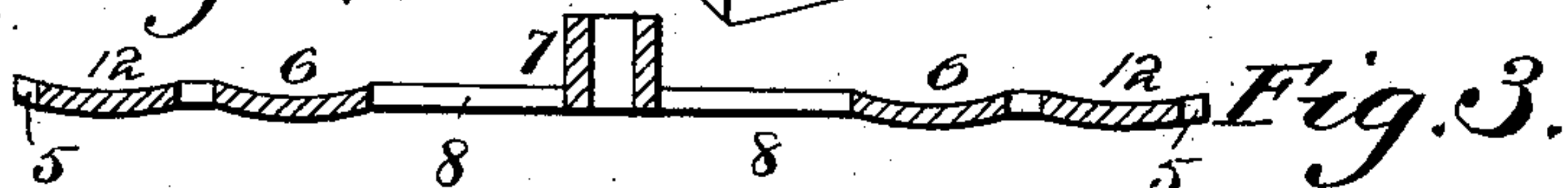


Fig 1.

Fig. 4.



Witnesses:  
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Fig. 2.

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# UNITED STATES PATENT OFFICE.

GEORGE LEWIS ESTER, OF ERIE, PENNSYLVANIA.

## LAMPBLACK-MACHINE.

SPECIFICATION forming part of Letters Patent No. 507,220, dated October 24, 1893.

Application filed February 23, 1893. Serial No. 463,435. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE LEWIS ESTER, a citizen of the United States of America, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Lampblack-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to apparatus for producing, depositing, and accumulating lampblack, and is in the nature of an improvement upon a former patent, No. 486,097, granted November 15, 1892, to which reference is directed for a complete understanding of the nature of the invention.

The chief object hereof is to provide means whereby the lamp-black is prevented from burning while it is undergoing the process of deposition on the accumulating surface or surfaces,—and moreover, this invention has for its further object to simplify and cheapen the construction of the several parts, and to increase the ease and efficiency of operation.

For the attainment of these objects, and for other purposes hereinafter enumerated, my invention comprises certain details of construction, arrangement and combination of parts, all of which will be more fully described hereinafter, and the specific points of novelty in which will be pointed out in the appended claim.

Referring to the accompanying drawings forming a part of this specification:—Figure 1 is a perspective view of a complete apparatus embodying my improvements. Fig. 2 is a front elevation of the same. Fig. 3 is a detail plan view of one of the gas-burners underneath each accumulator wheel. Fig. 4 is a detail transverse central section through one of the accumulator-wheels.

In all the views of the drawings, like numbers of reference indicate the same or corresponding parts.

Referring particularly to Fig. 1, 1 indicates the base of the machine, of any suitable shape and dimensions to support and accommodate the superincumbent parts.

2, and 3, respectively designate two upright or vertical shafts rising from the base, and situated a prescribed distance apart in alignment with each other. At the upper extremity of

each shaft, 2, or, 3, is rotatably journaled what I term the “accumulator,” consisting of a horizontally disposed skeleton disk, 4, 55 formed preferably in one piece of metal and comprising an outer peripheral annular band-ring, 5, an inner similar ring, 6, the central web, 7, having a central bore for the shaft, and the radial spokes, 8, 8, serving as supports 60 for the two concentric rings, 5, 6. Thus, it will be understood that each accumulator consists of two concentric rings or bands supported from the hub or web by integral spokes; the whole forming a skeleton wheel. Each 65 ring or band, 5, 6, channeled or grooved on its upper surface to form a co-extensive trough to hold water supplied thereto by means of the branch pipes, 9, 10, connected to the horizontal main, 11, and extending up vertically in 70 proximity to each wheel or disk 4. The upper end of each branch pipe is provided with a horizontal inwardly projecting nozzle having a suitable controlling valve or faucet whereby the water from the pipes can be di- 75 rected into both troughs of each disk or wheel. The trough in each ring, 5, 6, is designated by the numeral, 12, and is designed to be kept filled with water while the device is in operation in order to prevent the heat to which the 80 metallic disks are subjected from burning the black deposited thereupon by the gas-jets, as hereinafter explained.

Both accumulator disks, 4, are arranged in a common horizontal plane as shown, and the 85 edge or circumference of each disk is peripherally provided with notched teeth, 13, to engage the worm screw, 14, extending transversely between the adjacent edges of the two disks. This worm gear is formed on the horizontal 90 shaft, 15, which, in turn, is rotatably mounted in boxes, 16, in the upper ends of the vertical supporting standards, 17, rising from the base and secured rigidly thereto. One end of the shaft, 15, is extended laterally be- 95 yond its bearing and such extension, 18, is provided with a pulley, 19, having a belt, 20, by which motion is communicated to the shaft from some suitable source of power, such as a motor or engine (not shown). By this 100 construction both disks, 4, are simultaneously rotated from a common worm gear.

On the base, 1, is the main or gas-supply pipe containing the particular kind of gas



used for burning the lamp-black. This pipe, 21, is in communication with the gas-main or reservoir (not shown). For each disk, 4, there are two sets of burners, each comprising a vertical pipe, 22, rising from the pipe, 21, and terminating in an arc shaped horizontal burner, 23, linearly provided with a series of jets, 24, spaced equal distances apart. Thus, there is a burner, 23, for each ring or band, 5, or 6, for each disk, and the ends of both burners, 23, are in a common vertical plane, thus making a space between the beginning and end of each coil in which is located the scrapers which dislodge the accumulated lamp-black from the under side of each ring, 5, 6, where it is deposited by the burning action of the gas-jets.

The scrapers for both disks are mounted in common upon a shaft, 25, secured longitudinally in the receiving hopper, 26, and each scraper, 27, has an upper contacting edge, as shown. Thus, there are four scrapers, two for each wheel or disk and one for each ring, 5, 6, of each wheel. Such scrapers may be of any approved construction. The receiving hopper is substantially in the shape of an inverted V and is provided with an open flaring mouth to receive the lamp-black dislodged from the under surface of the accumulators. This hopper, if desired, can be connected with any suitable form of supplemental receiver by the discharge pipe of chute, 28. Such supplemental receiver may be such as shown in my former patent. The hopper, 26, is supported from the base in any desired manner.

In operation, the troughs of each wheel are

first filled with water, the gas-jets are then lighted, and the accumulators started into rotary action by a suitable motor imparting motion to the worm gear. As the under surface of each ring, 5, and 6, moves in proximity to the burning jets underneath, the black is deposited upon such under-surface, and is scraped off into the receiving hopper by the scrapers. The accumulated black is taken from the hopper in any suitable manner, such as that suggested.

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

In a device of the class described, the combination, with two accumulator wheels arranged in a common horizontal plane, and each comprising two concentric troughs supported by radial spokes in a common horizontal plane, the outer trough having a toothed edge or periphery,—of a worm-screw or gear intermeshing simultaneously with the toothed peripheries of both wheels,—means for imparting motion to said screw or gear,—water supply pipes for each wheel, provided severally with discharge nozzles above and in alignment with each trough of an accumulator,—and means for burning, removing, and collecting the carbon on the accumulators, substantially as specified.

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

GEORGE LEWIS ESTER.

Witnesses:

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G. M. WADSWORTH.