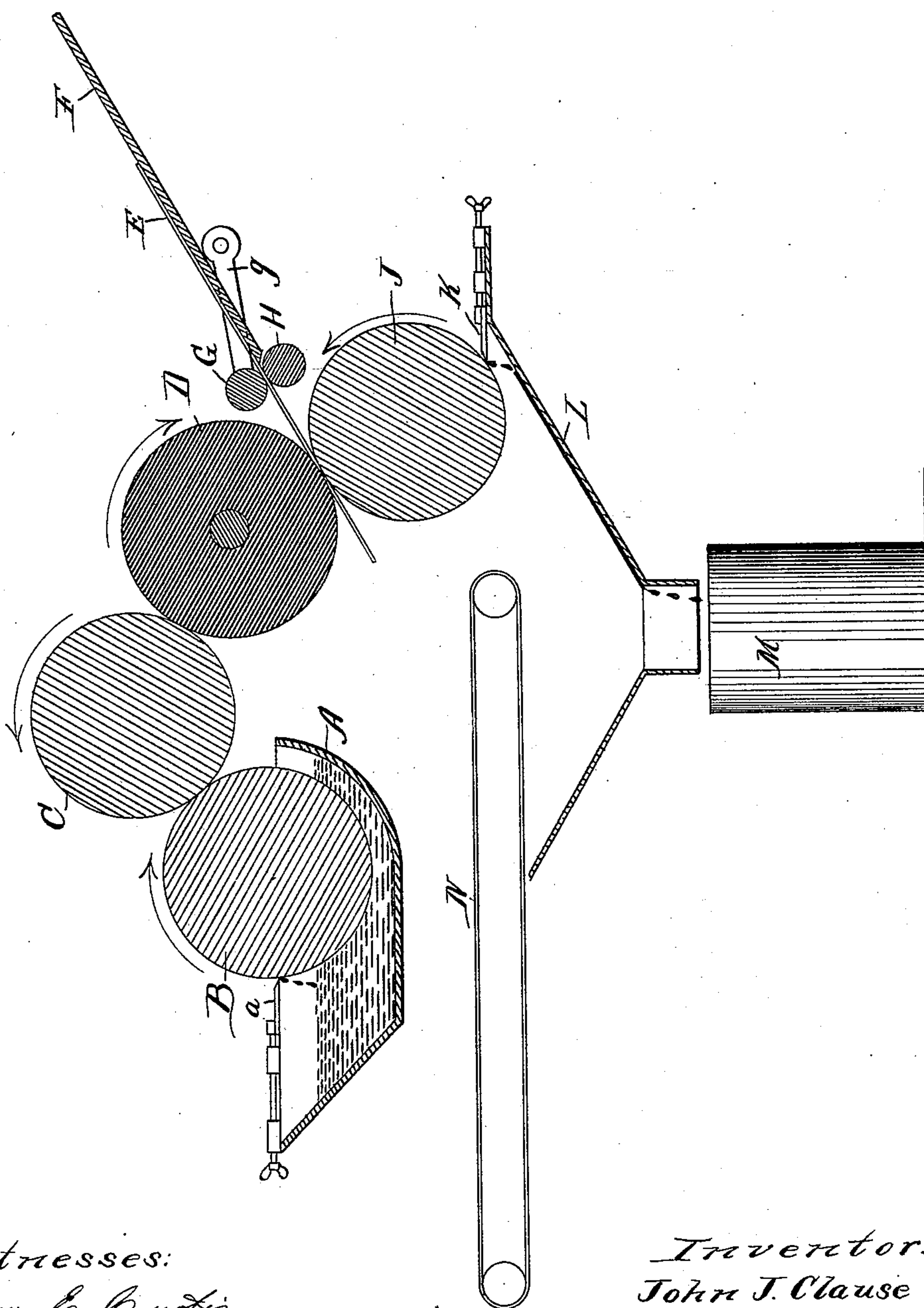


(No Model.)

J. J. CLAUSE & F. RUDOLPH.
APPARATUS FOR APPLYING VARNISH, &c.

No. 430,269.

Patented June 17, 1890.



Witnesses:

Sew. C. Curtis.

H. W. Munday,

Inventors:

John J. Clause

Franklin Rudolph

By Munday, Evans & Adcock
their Attorneys:

UNITED STATES PATENT OFFICE.

JOHN J. CLAUSE AND FRANKLIN RUDOLPH, OF CHICAGO, ILLINOIS.

APPARATUS FOR APPLYING VARNISH, &c.

SPECIFICATION forming part of Letters Patent No. 430,269, dated June 17, 1890.

Application filed October 24, 1889. Serial No. 327,972. (No model.)

To all whom it may concern:

Be it known that we, JOHN J. CLAUSE and FRANKLIN RUDOLPH, citizens of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Apparatus for Applying Varnish, &c., to Sheet Metal and other Material, of which the following is a specification.

10 This invention relates to an improved apparatus for applying varnish or paint to the surface of sheet metal or other material.

In practicing this invention we employ an apparatus consisting of two or more rolls rotating in contact each with its neighbor, the first roll rotating in a bath containing the varnish or paint to be applied and one of the subsequent rolls rotating in contact with a composition roll which applies the paint to the article to be coated. These rolls are made to move with a slightly differential surface speed, diminishing from the initial roll toward the roll which applies the coating material to the surface to be painted. By this differentiation in the surface speed each roll after the initial roll gathers up somewhat more of the paint from the preceding roll than it would gather if the surface speeds of the two were exactly alike. We have found by experiment that this peculiarity will insure the applying of a strong thick coat of paint, where rolls rotating at a uniform surface-speed would do the work very imperfectly or not at all. It is also desirable that the movement of the article to be coated past the composition roll shall be somewhat slower than the surface speed of such roll, this differentiation also resulting in the taking up by the article being coated of an increased quantity of varnish or paint in much the same way that the rolls having the differential surface speed take up an increased quantity.

45 We have shown in the accompanying drawing a diagram of an apparatus for the practice of our invention. This apparatus is the best form of the same now known to us; but of course we do not wish to be limited to the precise apparatus except in such of the claims as are confined to the same.

50 In the drawing, A represents a vat containing the varnish or paint to be applied. B is the initial roll rotating in said vat, and

a is a scraper which is adjustable to and from said roll and whose function is to take off the surplus paint which may adhere to the roll at its upwardly-moving side. The roll B rotates in the direction indicated by the arrow.

C is the next roll in order, and it is driven in the direction indicated. It is slightly smaller in diameter than the roll B, but is actuated so that it makes the same number of revolutions as roll B. This roll receives the paint from roll B and carries it to the next roll in order, that marked D. This latter roll rotates in the direction indicated and is driven so as to make the same number of revolutions as rolls B and C. This roll, however, we prefer to make of a composition similar to that used in printers' rolls, and as such material is yielding it may be slightly larger than roll C, which like roll B is a rigid metal roll. Roll D may, however, be smaller than roll C.

The metal plate or other article to be coated, and which is indicated at E, is fed to the apparatus from a table F by the feed-rolls G and H, the latter being driven at a surface speed substantially uniform with that of the roll J, which is placed under the roll D and supports the metal plate while it is being coated by such roll D. The upper of the feed-rolls, that marked G, is supported by pivoted arms g, so that it may yield to accommodate different thicknesses of material. The roll J, it will be noticed, is still smaller than the roll C; but it is driven so as to describe the same number of revolutions as rolls B, C, and D. By thus making it smaller it tends to retard the passage of the plate E, so that the surface of the composition roll travels at a slightly-greater speed than said plate. As roll J will be in contact with the composition roll when no painting is being done it will take up more or less paint from the composition roll, and to remove this a scraper K is employed, the paint so removed dropping onto an inclined table L, by which it may be conducted to any proper receptacle, such as that shown at M. An endless belt N serves to carry off the plates after they have passed the painting-roll.

It will be noticed that the several rolls, with the exception of the composition roll,

diminish in diameter from the initial roll B to the supporting-roll J, and where all are driven so as to make the same number of revolutions this diminution is essential.

5 Where varnishing is to be done, we find that the process and apparatus described produce upon metal plates a glossy surface much superior to that which can be brought out by the use of the brush, and where varnish or

10 paint is used an even continuous coat is insured. The apparatus is also adapted to keep the under surface of the sheet metal entirely clean, which is a great desideratum.

We claim—

15 1. In apparatus for coating metal and other articles with varnish, a plurality of rolls driven at a successively-diminishing surface speed and rotating in feeding contact with each other, so that each supplies the varnish

20 or paint to its neighbor roll, substantially as set forth.

2. In apparatus for coating metal and other articles with varnish, consisting of a vat containing the coating material, a plurality

25 of rolls driven at a successively-diminishing surface speed and rotating in feeding-contact with each other, as set forth, and means for feeding the article to be coated past said rolls, substantially as specified.

30 3. The apparatus for coating metal and

other surfaces with varnish, &c., consisting of the roll B, located in the bath of coating material, the roll C, rotating in contact with roll B and having a surface speed diminished from that of roll B, and the composition

35 roll taking the paint from roll C and applying it to the article, substantially as set forth.

4. The combination, with the roll B, located in the vat of coating material, of the roll D, applying the coating material to the

40 article, and one or more intervening rolls C, rotating in contact with said rolls B and D, and having a surface speed diminished from that of roll B, substantially as set forth.

5. In apparatus for coating metal and other

45 substances with varnish, &c., consisting of a vat containing the coating material, a series of rolls rotating in contact and having a successively-diminishing surface speed, and a roll J for supporting and carrying the article

50 to be coated, said roll J having a surface speed slightly less than the roll which applied the coating material, substantially as set forth.

JOHN J. CLAUSE.
FRANKLIN RUDOLPH.

Witnesses:

EDW. S. EVARTS,
H. M. MUNDAY.