

(No Model.)

T. NESOM & W. D. ECKENRODE.  
EMBOSSING MACHINE.

No. 568,268.

Patented Sept. 22, 1896.

FIG. 1.

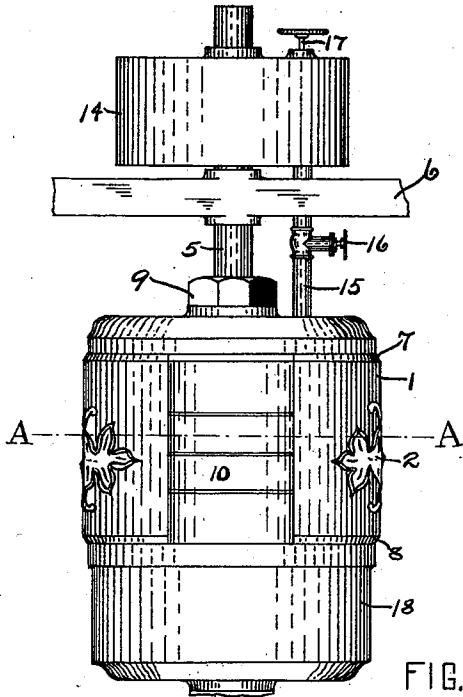


FIG. 2.

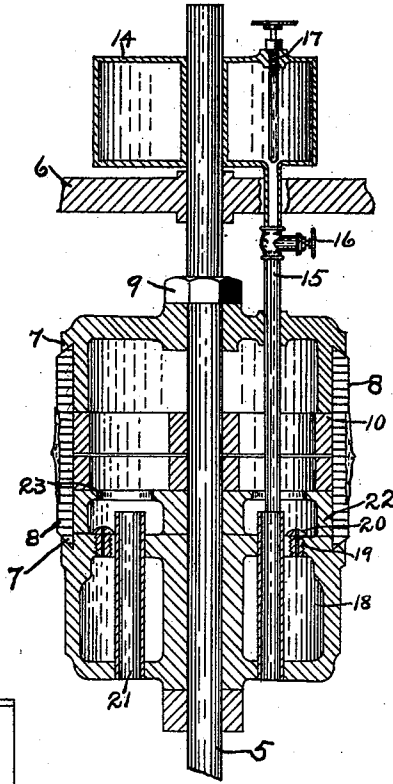


FIG. 5.

FIG. 6.

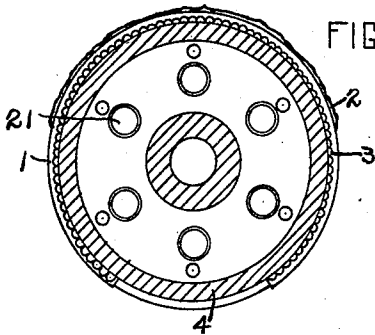
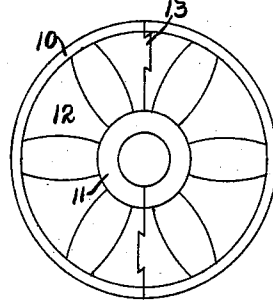


FIG. 3.

FIG. 4.



WITNESSES:  
*Horace B. Jones*  
*Gula Green*

INVENTORS  
*Thomas Nesom and*  
*Wm. D. Eckenrode*  
 BY *V. H. Lockwood*  
 ATTORNEY.

# UNITED STATES PATENT OFFICE.

THOMAS NESOM AND WILLIAM D. ECKENRODE, OF INDIANAPOLIS, INDIANA.

## EMBOSSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 568,268, dated September 22, 1896.

Application filed October 30, 1895. Serial No. 567,390. (No model.)

*To all whom it may concern:*

Be it known that we, THOMAS NESOM and WILLIAM D. ECKENRODE, of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Embossing-Machines; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

Our invention relates to an embossing-machine, and especially to the process of making the die, the form of the die, the means for adjustably mounting the same on the chuck-head, and means for heating the die while it is being used. Heretofore the die has been formed at considerable expense on a solid body and heated through the hollow shaft on which the same is mounted, thereby making the construction of the embossing-machine expensive, requiring a separate head or body with each new die and a wasteful manner of heating the die.

The features of our invention will appear from the following description and the accompanying drawings.

Figure 1 is an elevation of our embossing-machine, the shaft and drive-wheel being partly broken away. Fig. 2 is a longitudinal section of the same. Fig. 3 is a cross-section on the line A A of Fig. 1. Fig. 4 is a side elevation of one of the split rings used in mounting the die on the chuck-head. Fig. 5 is a plan view of a die before it is curved round the chuck-head. Fig. 6 is a side edge view of the same.

In making the curved die for our device we cast the same flat, as shown in Figs. 5 and 6, the design 2 being on one side and the other side being provided for its full length with a series of cross-corrugations 3. These may be wave-like, as shown, or as angular as desired. We then curve the die about a former that is the size of the head 4, as seen in Fig. 3. The corrugations on the under side of the same prevent the die, whether it be raised or depressed, from cracking and otherwise becoming injured while the flat die is being bent about the former.

The chuck-head is mounted on the shaft 5, that carries a drive-wheel 6, and is split annularly into two parts or ends, which we will

call, respectively, the "upper" and "lower" ends. Each end is provided with an annular dovetail groove at 7 to receive the annular edge 8 of the die. Assuming the lower end of the chuck to be fixed in position, as shown, the die is slipped into position on it and the upper end of the chuck-head forced down against the die by a set nut 9. If the die be wide, the chuck-head is lengthened by introducing into it split rings 10, with the hub 11 and spokes 12 to support the rim. A dovetail 13 and groove are provided in the adjoining faces of the split halves of the rings to hold them together. These rings are filled in between the ends of the chuck-head, as seen in the drawings, to support the die.

In heating our device, instead of making the shaft hollow and heating through it we make it solid and provide a gasolene or oil tank mounted on the shaft above the chuck-head, having the outlet-pipe 15 entering the chuck-head. It has a valve 16, and also there is a valve 17 located in the oil-tank that can be removed to admit the oil, and extends down so as to close the exit into the pipe 15 when desired. The lower end of the chuck-head is hollowed out to provide the annular chamber 18, which receives the oil or gas from the pipe 15. When the pipe is subjected to heat after the operation is begun, the oil passing through it is converted into gas in the usual way known in oil-burners. The lower end of the chuck-head is provided with an upper face or partition 19, in which a series of suitable burners 20 are secured. Extending into the chuck-head is a series of inlet-pipes 21 to furnish air to mix with the gas or vapor as it comes through the burners, whereby when ignited the heat is produced. A ring 22 is placed above the lower end of the chuck-head, having a deflecting upper wall 23. The burners 20 are preferably near the periphery in order that they may heat the die directly.

From the foregoing description it will appear that we have an unusually simple and economical method of making and using a die for embossing purposes. The design can be cut out of wood, the print of it made in the sand of the molds, and the die cast therein at slight expense in the simple well-known way, and it will be far cheaper than the way heretofore adopted of cutting the die in the solid

metal, and, furthermore, dies can be reproduced exactly. By providing the corrugations as shown we are enabled to bend the die into a curved form without injuring or cracking it. The thin die thus curved we are enabled to use by means of the adjustable chuck-head construction pointed out, and we can use a die of any width we may desire, being able to replace them quickly. With this method of making and mounting the die we are enabled to introduce the heat within the hollow chuck-head so that it will come into almost direct contact with the die, enabling it to be heated much quicker and kept heated at a much less expense than embossing-machines heretofore used as far as we are aware. The corrugations on the inside of the die after it is in position form grooves which extend vertically across the rings 10. These rings are not placed tightly together in the chuck-head but left preferably somewhat apart, so that the space between them coöperates with the vertically-disposed grooves in the die and not only enables the heat to come in direct contact with the die, but brings about an equality in the distribution of the heat in its action on the die.

What we claim as our invention, and desire to secure by Letters Patent, is—

- 30 1. In an embossing-machine, a cylindrical die with cross-corrugations throughout in its inner surface, a round hollow chuck-head or support for the die, and means within such chuck-head or support for heating the die.
- 35 2. In an embossing-machine, a die comprising a flat plate cast with the design on one side and cross-corrugations throughout the other side and then curved cylindrically with the corrugations inside, a round hollow chuck-head or cylindrical support for the die having openings in it, and means within the chuck-head or support for heating the die whereby it will be directly heated through such openings as well as through the chuck-head or support.
- 45 3. In an embossing-machine, a suitable shaft, a chuck-head mounted on such shaft with its two ends separate, a die mounted on the chuck-head, a groove or stop on each end of the chuck-head to prevent the lateral move-

ment of the die thereon, divided rings to fill in between the ends of the chuck-head to centrally support the die, the opposing faces of the parts of such ring having a groove and dovetail therein to hold the parts together, and means for clamping the ends of the chuck-head against the die to hold it securely in place.

4. In an embossing-machine, a suitable shaft, a hollow chuck-head mounted thereon with a chamber in the lower end, air-inlets in the chuck-head, burners within the hollow chuck-head extending from the chamber in the lower end, an oil-tank mounted above the chuck-head on the shaft, a pipe leading therefrom to the chamber in the lower end of the chuck-head, and a die mounted on the chuck-head.

5. In an embossing-machine, a suitable shaft, a hollow chuck-head mounted thereon with its two ends separate, a chamber in the lower end of the chuck-head, loosely-fitting rings located between the two ends of the chuck-head, a die mounted on such chuck-head provided interiorly with cross-grooves, means for holding the ends of the chuck-head, rings, and die in place, and means for introducing heat into such hollow chuck-head.

6. In an embossing-machine, a suitable shaft, a hollow chuck-head mounted thereon with its two ends separate, a chamber in the lower end of the chuck-head, suitable air-inlets into such chuck-head, suitable burners extending from the chamber in the lower end thereof, loosely-fitting rings located between the two ends of the chuck-head, a die mounted on such chuck-head provided interiorly with cross-grooves, means for holding the ends of the chuck-head, rings, and die in place, an oil-tank mounted above the chuck-head on the shaft, and a pipe leading therefrom to the chamber in the lower end of the chuck-head.

In witness whereof we have hereunto set our hands this 23d day of October, 1895.

THOMAS NESOM.  
WILLIAM D. ECKENRODE.

Witnesses:  
V. H. LOCKWOOD,  
ZULA GREEN.