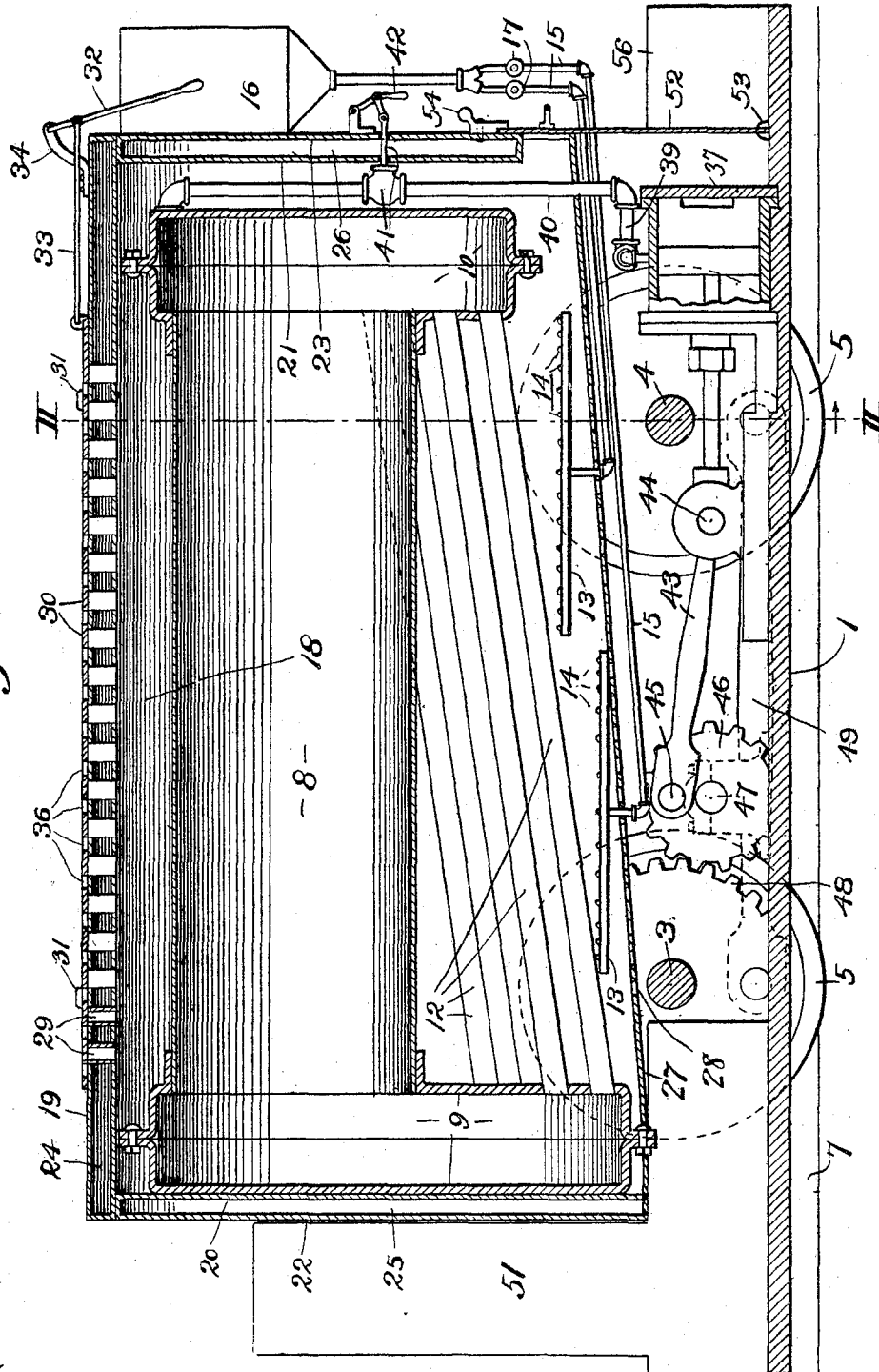


A. H. KORSMEYER.
MINING LOCOMOTIVE.

APPLICATION FILED MAY 31, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
A. M. Arthur
J. Moore

Inventor:
August H. Korsmeyer
 By *F. G. Fischer atty.*

A. H. KORSMEYER.
MINING LOCOMOTIVE.

APPLICATION FILED MAY 31, 1904.

2 SHEETS—SHEET 2.

Fig. 3.

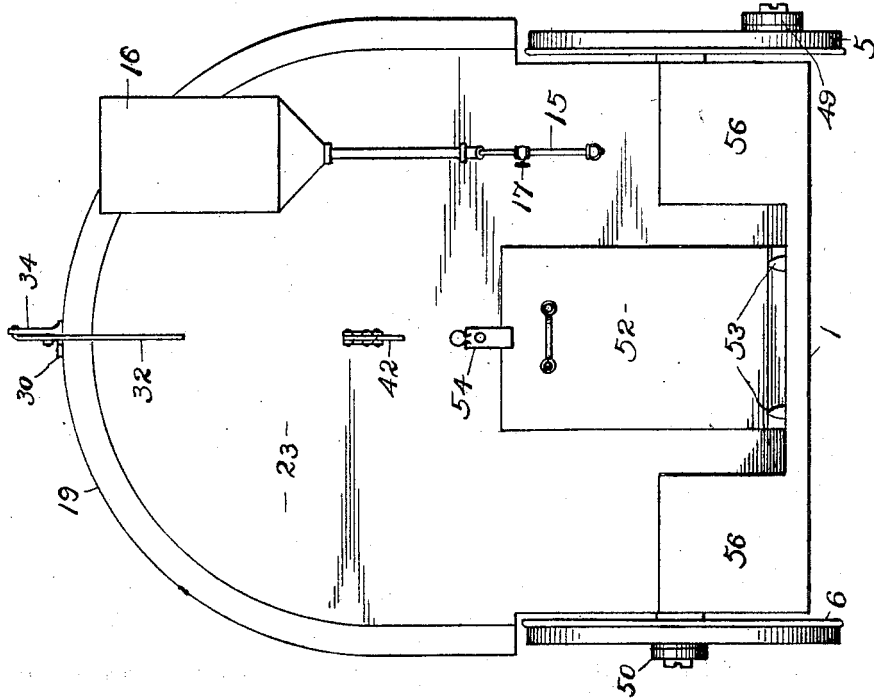
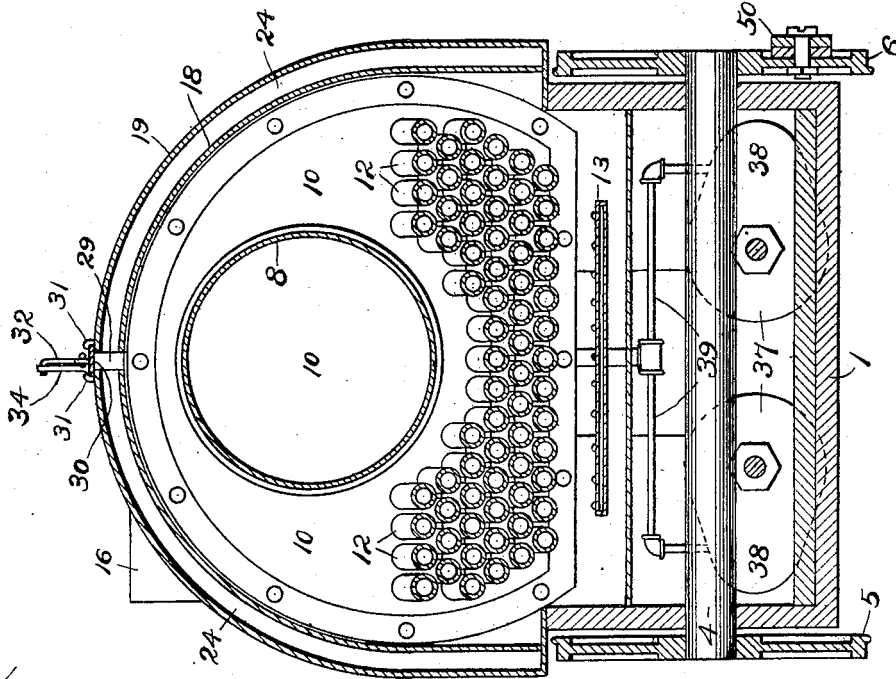


Fig. 2.



Witnesses:

Am. Arthur
J. Moore

Inventor:

Augustus H. Korsmeyer
By F. G. Fischer
att'y.

UNITED STATES PATENT OFFICE.

AUGUSTUS H. KORSMEYER, OF KANSAS CITY, MISSOURI.

MINING-LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 794,867, dated July 18, 1905.

Application filed May 31, 1904. Serial No. 210,389.

To all whom it may concern:

Be it known that I, AUGUSTUS H. KORSMEYER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Mining-Locomotives, of which the following is a specification.

This invention relates to locomotives for use in mines where space is limited and light and pure air are desirable to permit the mining operations to be prosecuted with celerity and safety.

My object therefore is to produce a locomotive of small and compact construction and practically smokeless in operation.

With this general object in view the invention consists in certain novel and peculiar features of construction and combinations of parts as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a central vertical longitudinal section of a locomotive embodying my invention, the water-tank being shown in elevation. Fig. 2 is a section taken on the line II II of Fig. 1. Fig. 3 is a rear elevation of the locomotive.

In the said drawings, 1 designates the frame, mounted upon axles 3 and 4, equipped with traction-wheels 5 and 6 for travel on a suitable trackway, as at 7.

The boiler consists of the cylindrical body portion 8, communicating at its front and rear ends, respectively, with the manifold-chambers 9 and 10, said chambers being also connected by a series of tubes 12, which are pitched or inclined downwardly and forwardly.

Arranged vertically below water-tubes 12 are hydrocarbon-burners 13, the same being preferably of disk form and provided with a plurality of nipples 14 and connected to the supply-pipes 15 in any suitable manner, said supply-pipes extending to a point beyond the rear end of the boiler and to a gasolene-tank 16, supported in any suitable manner, and said supply-pipes are equipped with valves 17 to control the flow of the gasolene to the burners.

The boiler is arranged within a housing or casing consisting of an inner shell 18 and an outer shell 19, disposed a suitable distance apart to provide an air-space 24 between them. The inner shell is provided with heads 20 21 and the outer shell with heads 22 23, suitably spaced so as to provide the air-chambers 25 and 26. The various air-chambers mentioned being poor conductors, but little radiation of heat from the outer shell occurs, which not only results in a quicker generation of steam and greater economy of fuel, but also eliminates danger of injury to any one who might come in contact with the housing, it being understood, of course, that tunnels in coal-mines are frequently so narrow that it would be impossible for one to pass a locomotive without touching it. The bottom of the housing is in the form of a plate 27, provided with apertures 28 for the admission of air to support combustion.

29 designates a series of short flues connecting and extending through the shells of the housing above the boiler, and 30 is a slide-plate mounted externally of the outer shell and guided in position by suitable lugs 31 thereon. The slide-plate is pivotally connected by a link 33, with a lever 32 fulcrumed on bracket 34, secured to the housing. By means of this lever the slide-plate is moved to cause its row of apertures 36 to move into or out of registration with said flues, the force of the draft through the flues being increased or diminished by the complete or partial registration of said apertures with said flues.

37 designates a pair of steam-cylinders disposed below the rear end of the housing and having their steam-chests 38 at their outer sides, and leading from said chests are pipes 39, which are connected to a pipe 40, communicating with the upper part of manifold-chamber 10, and mounted on said steam-supply pipe 40 is a throttle-valve 41, to be opened or closed through the agency of lever 42, mounted on the housing. The piston-rod of each cylinder is connected, through the medium of a cross-head 44, with a driving-rod 43, mounted at its front end on the wrist-pin 45 of a gear-pinion 46, journaled on a stub-

shaft 47, suitably supported from the frame-
work, and said pinion meshes with a gear-
wheel 48, keyed or otherwise rigidly secured
on axle 3. Traction-wheels 5 are pivotally
5 connected by a driving-rod 49 and traction-
wheels 6 by a similar driving-rod 50, said
rods being set "quartering" in the usual man-
ner.

The boiler is supplied with water in the
10 usual or any preferred manner from water-
tank 51, and access is had to the burners, the
under side of the boiler, the driving-gearing,
and the engine-cylinders by removing door 52,
which is held in place normally by lugs 53
15 and a pivoted latch or turn-button 54. Upon
the rear end of the platform are boxes 56 for
holding tools, &c.

Assuming that the boiler is charged with
the requisite volume of water and tank 16
20 with a suitable supply of gasolene, the engi-
neer when ready to generate steam manipu-
lates lever 32 to dispose the perforations of
plate 30 in line with tubes 29 and then opens
valve 17 and in any suitable manner starts the
25 burners in operation. Immediately thereaf-
ter the heat generated establishes and gradu-
ally increases the circulation of air up through
perforations 28 to support combustion, and
this hot air threads its way upwardly and be-
30 tween the tubes 12 against the bottom of the
body of the boiler and passes upwardly at op-
posite sides of the latter and escapes through
flues 29 and apertures 36. After the burners
have been in operation a sufficient length of
35 time to generate and raise the steam to the
required pressure the throttle-valve is opened
to permit the steam to enter the cylinders and
through the gearing described effect the propu-
sion of the locomotive, it being under-
40 stood, of course, that after the steam has been
raised to the required pressure the valve 17
may be partially closed and still generate suf-
ficient heat for the proper operation of the lo-
comotive, this operation taking place under
45 a substantially perfect combustion, and con-
sequently being attended by the production
of but little, if any, smoke.

The locomotive is started and stopped by
the usual manipulation of the throttle-valve,
50 though of course the equipment may also in-
clude a system of brakes. (Not shown, be-
cause forming no part of the present inven-
tion.)

From the above description it will be ap-
parent that I have produced a mining-loco- 55
motive possessing the features of advantage
enumerated as desirable in the statement of
invention and which may obviously be modi-
fied in minor particulars without departing
from the spirit and scope of the appended 60
claims.

Having thus described the invention, what
I claim as new, and desire to secure by Letters
Patent, is—

1. In a mining-locomotive, the combination 65
of a wheeled frame, a housing thereon, consist-
ing of an inner and an outer shell, a per-
forated bottom common to both shells, one or
more flues connecting and extending through
the upper part of the shells, a boiler in the 70
inner shell vertically below said flues, burners
within the inner shell and below the boiler,
and a valve for controlling the passage of said
flue or flues.

2. In a mining-locomotive, the combination 75
of a wheeled frame, a housing thereon, consist-
ing of an inner and an outer shell, a per-
forated bottom common to both shells, one or
more flues connecting and extending through
the upper part of the shells, a boiler in the 80
inner shell vertically below said flues, burners
within the inner shell and below the boiler, an
oil-supply tank, valve-controlled pipes con-
necting the tank with the burners, and a valve
for controlling the passage of said flue or 85
flues.

3. In a mining-locomotive, a wheeled frame,
a housing thereon consisting of an inner and
an outer shell having a dead-air space between
them, a perforated bottom common to both 90
shells, a longitudinal series of vertical flues
connecting and extending through the upper
part of the shells and bridging the dead-air
space, a perforated slide valve or plate mount-
ed on the upper side of the outer shell above 95
said flues to control the passages thereof, and
burners within the inner shell above the per-
forated bottom thereof and vertically below
said series of flues.

In testimony whereof I affix my signature in 100
the presence of two witnesses.

AUGUSTUS H. KORSMEYER.

Witnesses:

F. G. FISCHER,
J. MOORE.