ESCHER WYSS & Co.

ZÜRICH

SCHWEIZ — SUISSE — SWITZERLAND — SUIZA

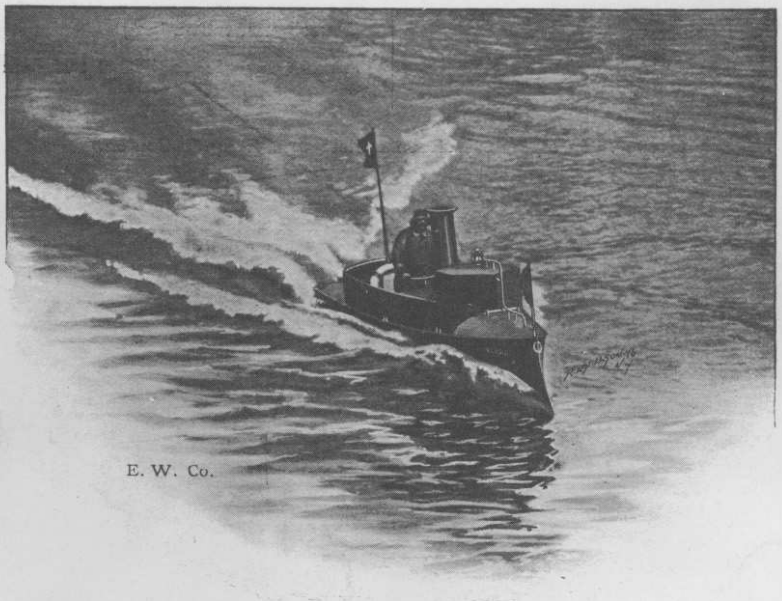
RAVENSBURG

DEUTSCHLAND

Gegründet 1805.

MOTORBOOTE UND MOTORYACHTEN

1912



TETRAEDER RENNMOTORBOOT „VERA“ IN MONTE CARLO

Erbaut 1902.

421 B 1000 Ex. Februar 1913

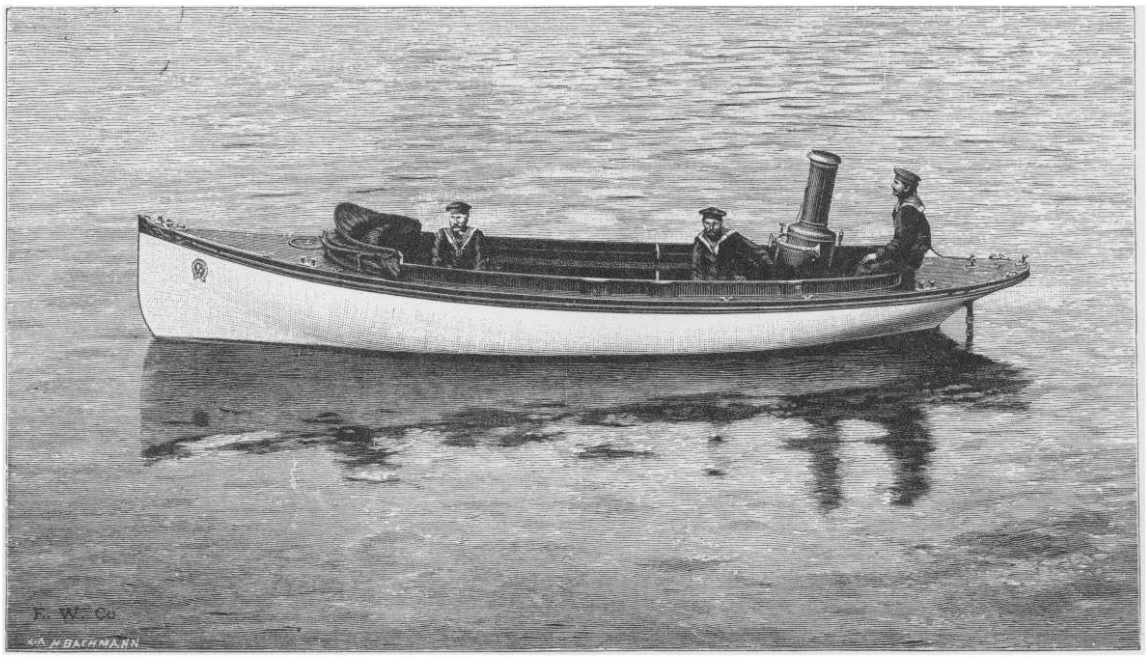
ESCHER WYSS & Co.

lieferten an folgende hochstehende Persönlichkeiten und Behörden **Motorboote:**

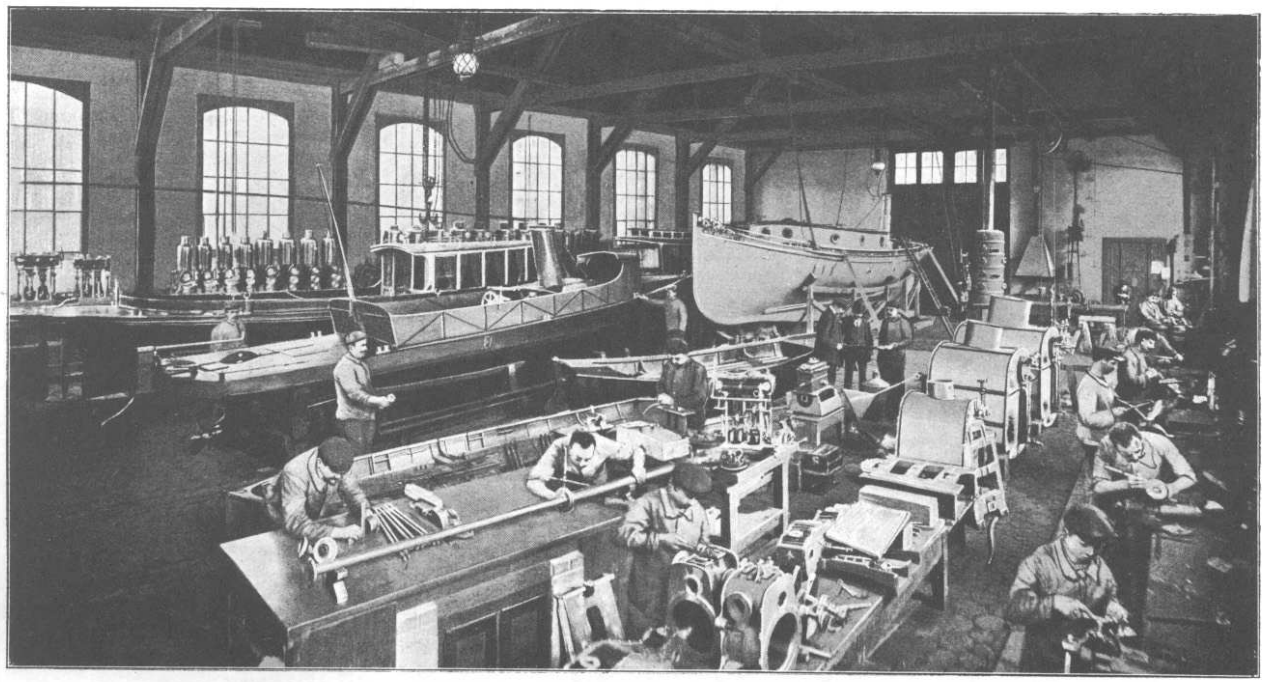
S. M. Wilhelm II., Deutscher Kaiser
S. K. H. Grossherzog v. Oldenburg
S. D. Wilhelm Fürst zu Wied
S. A. Fürst Alex. Karageorgewitsch
S. A. Mahmud Pascha
S. A. Chedive von Aegypten
S. A. Sultan von Marokko
S. E. Graf Zeppelin
Freiherr von Stumm
Don Carlos, Venedig
Alfred Nobel (Erfinder des Dynamits)
Kaiserl. Werft Kiel, Danzig und Wilhelmshaven
Ministerial-Baukommission Berlin
Italienische Marine Spezia
Russ. Genie-Verwaltung Petersburg
Hafenbau-Ingenieur-Amt Marseille
Reichs-Marineamt Berlin
Schweiz. Bundesbahnen Romanshorn
Japanische Marine Osaka
Tiefsee-Laboratorium Villefranche
Torpedo-Inspektion Kiel
Flussbauamt Rosenheim

Kgl. Gutsverwaltung Herrenwörth Chiemsee
Russ. Marine-Inspektion Sevastopol
Ministerium der öffentl. Arbeiten, Cairo
Oesterreichisches Binnenschiffahrts-Inspektorat Wien
Russische Marine Petersburg
Ministerium der Kolonien in Haag (Holland)
Oesterreichische Marine Pola
Wasserbauamt Thonon
Eidgen. Polytechnikum Zürich
Rumänische Regierung Constanta
Deutsche Südpolar-Expedition
Deutsche Reichs-Regierung Victoria-See (Afrika)
Städt. Hafenbauamt Karlsruhe
Kgl. Kaiserl. Statthalterei Prag
Kgl. Kaiserl. Statthalterei Linz a D.
Kgl. Bayr. Obersthofmeisterstab München
Vermögensverwaltung S. M. des Königs Otto von Bayern
Ministerium des Innern in München
Stadtbauamt München
Flussbauamt Bamberg
Verein für die Schiffahrt auf dem Oberrhein, Basel

(Siehe nachfolgende Referenzenliste und Zeugnis-Copien.)



Erstes Motorboot „Hohenzollern“ S. M. dem Deutschen Kaiser geliefert (Beiboot der Yacht Hohenzollern).



Bootbau-Werkstätte von Escher-Wyss & Cie. in Zürich

Editors' Foreword

In 1912 the Swiss based company Escher Wyss produced a catalogue of their range of small craft, in particular steam and naphtha engined boats.

This publication is an English translation of the steam section of that catalogue with reproductions of the original illustrations, plus some material on the naphtha launches. To this has been added a reference list of vessels of all types and their machinery built by Escher Wyss between 1837 and 1913, in which a number of surviving vessels can be identified.

The Editors would like to thank Escher Wyss & Co., of Zurich for the loan of the rare original catalogue and Mr. R. Stahel, Sandy Smyth and Sarah Attwood for assistance in producing this publication.

Edited by

Richard White

&

Brian Hillsdon

Steamboat Catalogue reprint No. 6.

Published by Brian Hillsdon in conjunction with the Steamboat Association of Great Britain.

Printed by TWP Services Ltd., Farmhouse Road, London SW16

MOTORBOOTE
ESCHER WYSS & CIE
ZÜRICH (SCHWEIZ) RAVENSBURG (DEUTSCHLAND)

Motorboot-Hafen von Escher Wyss & Cie., Zürich, Schipfe 29

1. Idealboot, Typ I, von 2 HP, mit Naphtamotor. 2. Dampfmotorboot von 15 HP. 3. Typ Hohenzollern, für die See, Naphtaboot von 6 HP. 4. Salon-Naphtaboot. 5. Zerlegbare Aluminium-Dampfmotorpinasse. 6. Naphta-Kriegsschiff-Kutter III. Klasse von 6 HP. 7. Naphtaboot mit abnehmbarer Korbkabine. 8. Naphtaboot von 2 HP. 9. Petroleum-Tankboot. 10. Stationsschiff des Hafens.

Introduction

Since 1888 we have been building, as a speciality, motor boats and yachts in a separate department. Thanks to our long, rich experience in this special field in all its great variety, we are in a position to fulfill the most demanding requirements of our customers. We build four different types of motor boats.

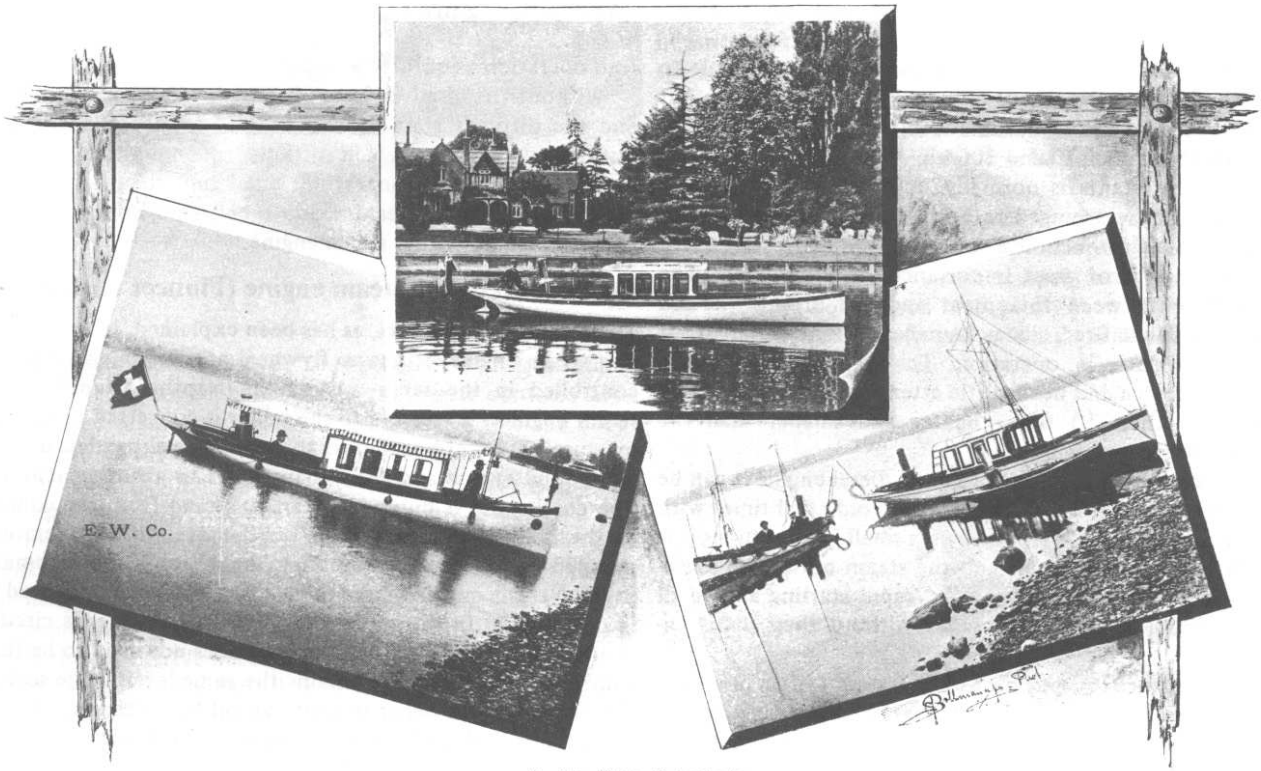
Naphtha boats from 6–12m long with 2 4 and 6 HP engines capable of a speed of 11–12km/hour and a payload of up to 30 people. This is the simplest, longest established and most proven motor boat, the simplest to service and the one needing the least maintenance. It can be started from cold in two minutes.

Steam motor boats with oil firing in 25, 35, and 50 HP sizes, also with twin screws in sizes of 70 and 100 HP. This class of plant is also simple to operate and runs reliably, the time to start from cold is 8–12 minutes.

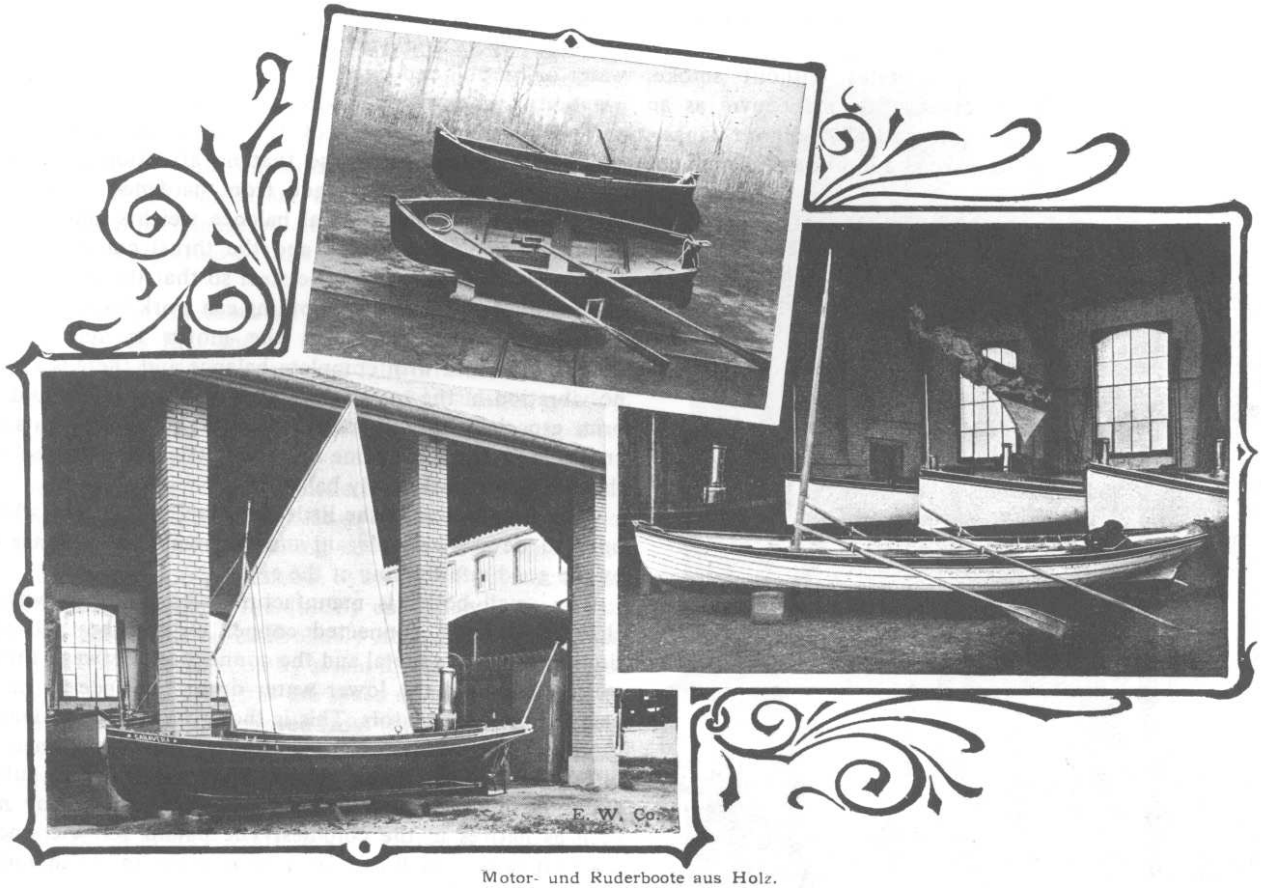
Petrol or paraffin engined boats in all sizes powers and speeds from a 2 HP boat to launches of large size and high speed.

Electric boats and yachts together with accumulator drive or with direct propulsion. All four systems can be inspected here and some of them tried on the Zurich See.

We invite anyone who is interested to come here to inspect the various systems and try them out without obligation.



Naphta-Motor-Salonboote.



Motor- und Ruderboote aus Holz.

Steam launches with oil firing

Swiss Patent No. 14771 Escher Wyss & Co, Zurich

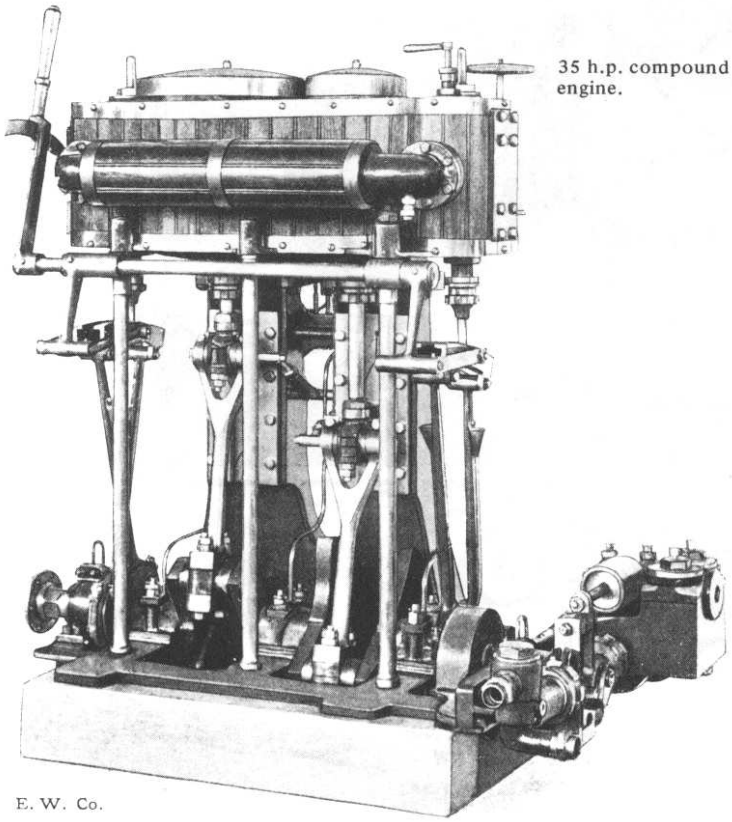
In order to be able to offer a motor as safe and as simple to handle as the Naptha engine but of more than 6 hp we have put on the market a so called automatic oil fired steam plant in power ranges 15, 25, 35, 70 and 100 hp.

Firing in these plants is normally by ordinary lamp oil but the plant can also be arranged to burn wood, coal, turf, maize husks, the residue from olive pressing (Panelli) which for colonial countries is of great importance, or other fuels. The main difference between this plant and the ordinary steam engine and other oil fired steam launches is that this plant is completely automatic in operation. That is to say it can be operated by a novice and needs little attention and for the same power is more than 10 times lighter and smaller than the ordinary marine steam engine.

Further, like the Naptha motor or the diesel engine it can be put into operation in 8–15 minutes from cold at all times with the greatest safety. Since the boiler uses small copper tubes it is designed to be explosion proof and the steam motor can therefore compete as far as weight, power, rapid starting and small space requirement with other motors without their disadvantages.

The steam motor (Pioneer motor) possesses for small vessels all the advantages of the steam engine, at the same time having the most important qualities of the various types of internal combustion engine without their disadvantages. In this engine the oil is not vapourised but is burnt without any smoke with a light blue flame. It is also completely without smell, in which it differs widely from the petrol engine.

The steam motor, therefore, operates without smoke, without smell and reliably, is as easy to manoeuvre as an ordinary steam engine, operates automatically without danger, is as light and occupies as little space as a motor and can be put into operation as quickly as a car.



35 h.p. compound engine.

E. W. Co.

Without the disadvantages of smoke, vibration, noise or smell and the difficult start up and lack of safety in operation and during manoeuvres which afflicts other motors, our steam motor boat gives a wonderfully quiet ride at high speed and so far as maintenance, cleaning and repairing is concerned is comparable with any other steam engine.

Description of the steam engine (Pioneer motor)

The steam motor works, as has been explained, in the same way as a steam engine. It has no flywheel or reversing gearbox but is controlled in the same way as the Naptha Launch or other steam engines. Water fed to the boiler is converted to steam at a pressure of 18 atmospheres; this steam is expanded in a small compound engine and the exhaust goes to a surface condenser. The condensate is pumped by an air pump from the condenser to the hotwell and from here condensate with air removed is pumped once more to the boiler, the action being automatic as in the Naptha engine where the Naptha is also recondensed back into the tank. In the steam motor the same water is circulated continuously. The boiler water level does not need to be further controlled and always maintains the same level, while scaling of the boiler cannot occur neither can oil be present in the water since the cylinder of the steam engine is not lubricated. Only a small amount of make up water need be supplied to the boat's freshwater tank to replace steam loss from the system, the whistle and the piston rod glands.

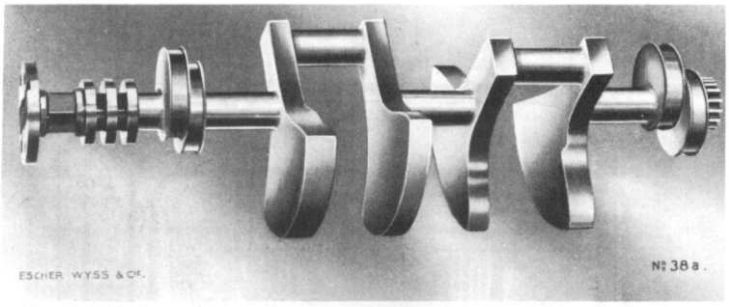
Larger boats and yachts which spend long periods in salt water or on polluted rivers can be fitted with a small automatic evaporator which easily makes up the water loss.

The principal bearings of the motor are lubricated by a central lubrication system so that no attention is needed. All pivot pins are precision made from hardened steel, the two throw crankshaft has integral balance weights and the cranks, eccentrics, coupling flanges and the thrust collars are formed from a single piece of chrome steel so that the engine is tough and resistant to forcing and nothing can work loose.

Through counterbalancing the motor is able to run at 250/300 rev/min with complete balance and there is absolutely no vibration in the vessel or disturbing noise. We should like to bring especially to your notice that the balance weights on the cranks are not all the same but each weight is arranged so that the machine is completely balanced.

The appearance of the little machine, all parts of which are open to view, is very elegant and the owner's confidence is won by the good safe running of the engine.

The small boiler is manufactured from bronze with interchangeable screw connected copper water tubes. All connections are metal to metal and the connections between the tubes, steam drum and the lower water drum are made by means of patent screw connectors. This is the most important feature of the Pioneer system since it is in this way that the Pioneer boiler differs from other steam boilers. These small copper tubes can easily be removed and replaced using a small key by novices such as natives in the colonies. The patent screw connections need no gaskets such as rubber or asbestos and form a metal to metal contact by conical seating which will stand 36–40 atmospheres of pressure. Despite the fact that the tubes are arranged for rapid exchange they are made from first class seamless copper and are inspected before fitting.



Crankshaft for a 50 h.p. engine.

The Pioneer boiler works at 18 atmospheres pressure and is tested to 36–40 atmospheres. Since the boiler contains little water and the manometer reads to 40 atmospheres the boiler can be tested at any time by a few minutes work with the hand pump. Because of this and since the boiler is not subject to scaling up and is also made of non-ferrous metal which cannot rust, the boiler does not suffer from tube failure which often happens with other small boilers. We have boilers in service which have been in operation for 12–14 years which for the above mentioned reasons have not needed any tubes changed although the tubes have become thin with use.

These Pioneer steam launches often receive very hard treatment in the tropics and foreign lands and are often very neglected. Should dirt cause the feed pump to fail, which would be noticed immediately through the hotwell overflowing and the boiler water level sinking so that the boiler is in danger of being overheated, or should, through lack of fresh water, sea water be pumped into the boiler causing scaling and salt contamination, then the first thing to happen would be that one of the small thinwalled tubes would split, the steam would flow into the fire box and automatically extinguish the fire so that the boiler pressure would immediately fall. Thus the boiler is regulated so that the passengers, crew and the more expensive boiler parts are not endangered. If thick walled tubes were used damage to the steam drum or other boiler parts might occur as a result.

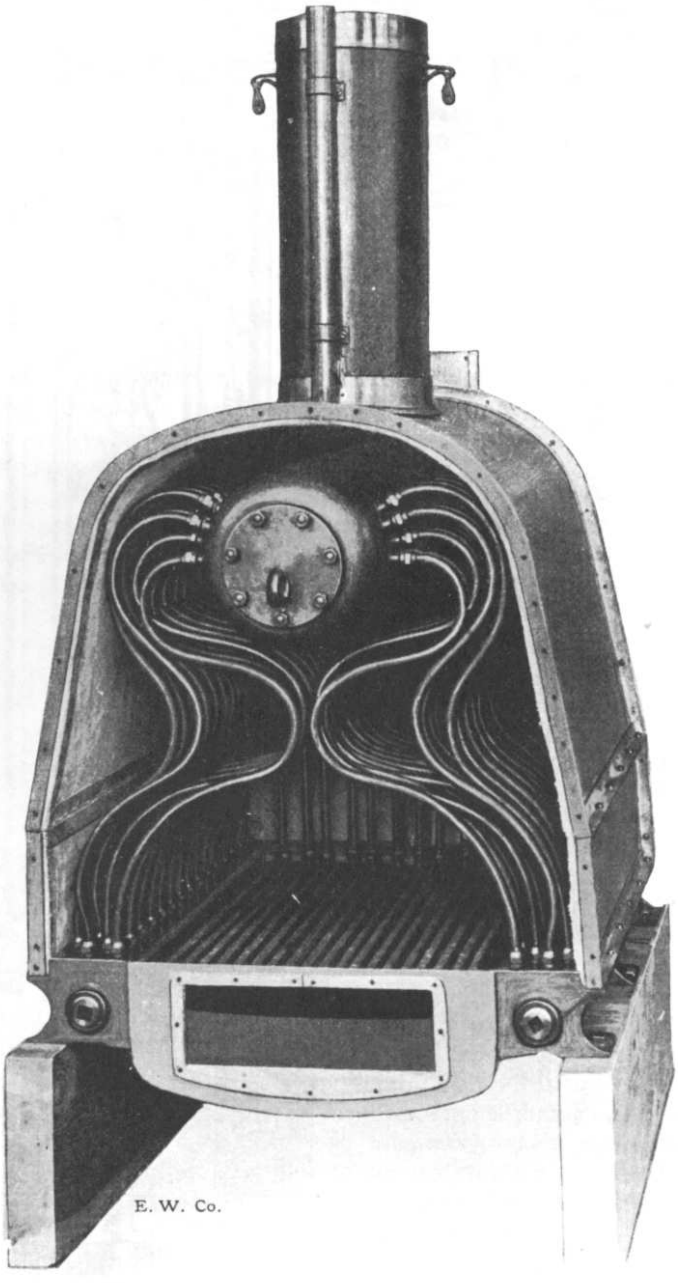
With our system the tubes are always the weakest part of the boiler and will fail first and so protect other parts. Since this type of boiler holds little water and falls into the category of small water tube boiler steam can naturally be raised quickly. Regardless of climate of season the boat can have steam up from all cold within 8–10 minutes.

The boiler and engine take up little room for their power and there is no annoyance through heat or smell. With a pressure of 18 atmospheres available signalling with the steam whistle can be done with extraordinary success. By means of a steam ejector the boat can, in emergency be quickly and safely pumped out. Further the cabin can be controllably heated by boiler steam and it is also possible to cook by steam in the galley. When you take into consideration that in the space of 15–20 minutes the petroleum burner can be removed from the boiler a grate put in its place and a fire of wood or other combustable material made in the absence of petroleum, it becomes clear that this is a feature which offers quite extraordinary advantages for yachts, touring boats, inspection craft, not to mention boats for the colonies, which no other type of motor can offer.

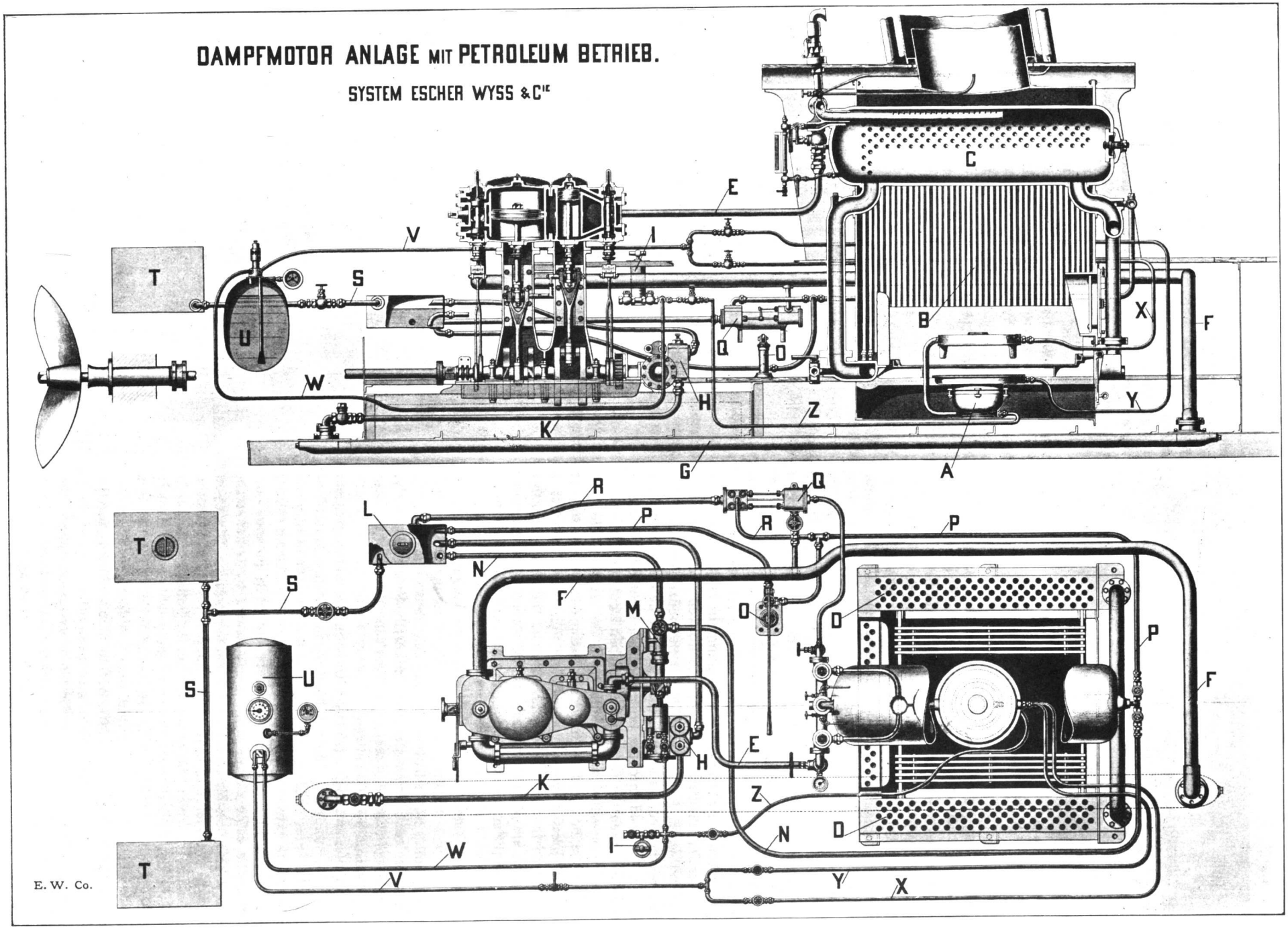
Oil firing with the Pioneer burner is extremely simple, the burner needs little servicing and cleans itself and uses neither spirits nor benzene or any other fluid to get it going. The burner is lit with a match in the same way as an ordinary oil lamp, in which respect it differs from other burners. It heats itself up when air is pumped into the petroleum tank and to begin with some air is allowed to blow into the burner. In just a few minutes all these preparations are complete and everything else the motor does automatically.

The fire burns without smoke, smell or sound with a blueish white flame. The output of the burner can be regulated just like a gas cooker with a cock and can be adjusted as necessary from the steering position.

Unwanted dust and unpleasant odours do not arise, the unpleasant smell of petroleum is produced by the decomposition of petroleum vapours at high temperatures during combustion and this does not happen here. In the Pioneer burner the petroleum is burnt completely and safely as in a Swedish lamp or the well known Primus stove.



15 h.p. boiler. Length 670mm, breadth 840mm, height 930mm. Weight 350 kg.


DAMPFMOTOR ANLAGE MIT PETROLEUM BETRIEB.
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Details of steam motors

While the Naptha engine does not freeze up in winter the steam motor can freeze. To prevent this one can, when the boat is laid up, place a lantern in the boiler furnace and leave it burning where the warmth given off prevents freezing. Benzene and diesel engines, also heavy oil machines, use water cooling to the cylinders and this may well freeze if water is not drained out. The weight of the Pioneer steam motor complete with boiler is about 18kg/HP which is trifling weight when one thinks that the slow running petrol marine engine weighs about 25–30kg/HP.

The only disadvantage of the steam motor when compared to the internal combustion engine is that the first cost is a little higher. The fuel consumption is about 0.45–0.7kg of petroleum per HP which is also a little higher than that of a good petroleum or diesel motor. The cheap simple maintenance and the very limited repair and service costs together with the other advantages weigh in a multiplicity of ways against this disadvantage. We can warmly recommend this motor for all purposes as a safe, convenient and clean means of propulsion, especially for foreign countries where repairs are difficult to carry out and where petroleum often runs out or is not to be had.

Operation of the motor and the control of a steam launch can be done by a single lay person who does not need to be either a chauffeur or a mechanic. The steam motor can be operated and serviced by young sailors and natives in the colonies with success.

Mode of operation and pipe layout for steam motors

As earlier remarked the steam motor is a compound machine taking its steam from a boiler with small water tubes. The exhaust steam is condensed in a surface condenser while the condensate returns to the boiler so the same water circulates continually. In starting up the plant the petroleum tank, U, is first filled so that there is about 10 cm of air space above the fuel. This air acts as a pressurising medium. Then the freshwater tanks T are filled, preferably with rain water or other clean water so the amount of sediment and scale is minimised. Both freshwater tanks are connected together by pipe S, and by opening a valve the water is allowed to flow into the hotwell. Water is pumped from the hotwell to the boiler through pipe P by means of a hand feedpump O, until the water shows at about half height in the gauge glass. When the boiler is filled the makeup valve S is shut so that the hotwell does not become too full and overflow. The hand air pump, J, is next operated, passing air to the fuel tank U through pipe W, until the relevant manometer shows 1 atmosphere pressure then the fuel valve is opened so that the fuel flows through the small pipe Y until the wick of the petroleum burners and the ring channel is filled to overflowing, then this valve is shut and a match applied to burner A. The valve on the small pipe Z is opened so that the air flows through the pipe WZ to the burner and establishes a flame which plays on the plate type vaporiser and heats it up. The conical plate provided on the burner makes the pilot flame work better. The air valve is opened more or less depending onthe air pressure in the fuel tank and while air is being supplied to the burner one pumps with the air pump J for another five to eight minutes, depending on the time of year, to replace the air used. From time to time the valve on the small pipe Y is opened to allow fresh oil to reach the lower ring of the burner while vaporiser I is being heated. One then completely shuts the fuel valve in the feed pipe and also the air valve in the pipe Z. Air pressure is raised to at least 1 atmosphere using the air pump Y and the oil control valve in pipe X opened. The valve is provided with a numbered scale and to begin with the indicator is set to number 4–6 on the scale. Oil flows through the pipe X into the hot vaporiser where it is converted to vapour and flows down into the burner nozzle. As soon as the oil and oil vapour enters the jet the control valve is shut so that the condensed vapour which can form through inadequate pre-heating of the burner has a chance to burn out.

To enable fuel to be burnt more quickly and with less smoke, air can be blown through the pipe Z so that the burner is more intensively heated. Once any condensed paraffin is burnt, which can be seen by the flame becoming clear, the oil regulating valve is opened again and set to 4–6 on the scale, the air pressure in the tank is increased again to 1 atmosphere and thereafter the burner is self-sustaining.

Meanwhile the water in the boiler is becoming warmer and one can use this time while steam pressure is being raised to oil and grease the engine. The small central reservoir in the back of the engine is filled with mineral oil and the wicks set in position. Small oil cups on the eccentrics are filled and the moving parts of the motor oiled around. The pump drives and their stuffing boxes are also greased. In about 10 or 12 minutes the boiler reaches 4–5 atmospheres, the receiver valve is first opened on the engine and then the throttle and the main stop valve of the boiler; steam then flows through pipe E to the motor.

Initially steam will condense in the engine so the reversing lever is moved slowly two or three times forward and backwards with the stopvalve closed and the drain cocks open to clear the condensate. These drain cocks are equipped with springs and serve also as release valves for the cylinders. Fresh steam is then allowed to enter the engine and once more the reversing lever moved to and fro allowing the steam to enter above and below the pistons.

Condensate blown out through the open drain cocks flows to the hotwell L, although the connecting pipes are not shown in the drawing. The reversing lever is moved slowly to and fro until the steam issueing from the draincocks is dry and the engine begins to turn. The draincocks are then shut, naturally the one on the low pressure cylinder first, and also the impulse valve. If a metallic noise is heard coming from the cylinders the drain cock must once more be opened until this noise, which is made by condensed steam causing waterlock, disappears.

Once the engine is running well make sure that the mechanical feed pump M is working. The snifting valve for the pump, which is not shown on the drawing, must discharge water into the hotwell and the feed pump must pump the reservoir dry so that only a little water remains in it. If the tank overflows this means the feed pump is not working, in which case the regulating screw of the snifting valve must be opened to release the air lock in the pump until the valve once more discharges water to the hotwell. The exhaust steam is fed through the pipe S, through the hull to the keel condenser G, where it is condensed. The resulting water is pumped back into the hotwell by the air pump H and the extraction pump K. Condensate is then pumped back to the boiler by the feed pump M through pipe N. On air pump H is another small compressor which, while the engine is in motion, continues to pump air through pipe W into the tank U to maintain a constant pressure of one atmosphere. Excess air escapes from the fuel tank through a relief valve.

On larger yachts, especially those equipped for wood firing, there is another steam feed pump, the so called donkey pump Q, installed. This feed pump draws from the feed tank through pipe R and supplies water to the boiler through the pipe P.

Boiler construction

The boiler is fitted with a steam drum C, connected by tubes B to the lower water drums D which in turn are joined by bronze downcomers to the steam drum. The principal parts of the boiler such as the steam and water drums and downcomers are made of a well finished tough bronze while the tubes are of first class copper. The water tubes are fitted with a patent screw connection, as shown in the illustration and are connected by this means to the steam drum and water drums. These tubes can be removed and replaced or blanked off with a cap.

Referring to the illustration it can be seen that the copper tube is belled out in the screw connector and pressed onto the conical register without any packing. The nipple has a conical face and is made in tough bronze and these elements are screwed into the water and steam drums. Also shown are blanking caps which can be fitted if after long service or shortage of water or through scaling a water tube is damaged and there is no new tube to hand. The loss of one or two tubes is of no concern.

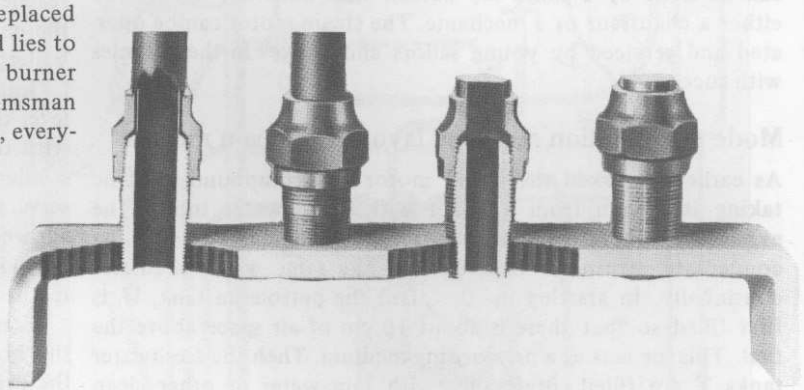
Most of the high pressure pipe work for the system is also connected by these couplings and there is no packing material, used whether of asbestos or other materials, with the exception of the inspection cover in the steam drum.

The burner A can easily be removed complete and replaced by a grate. This grate is shown in part in the drawing and lies to left and right of the burner. As already remarked the oil burner can be regulated by a graduated control valve by the helmsman in the same manner as the flame in a gas stove is altered, everything else is done automatically by the power plant.

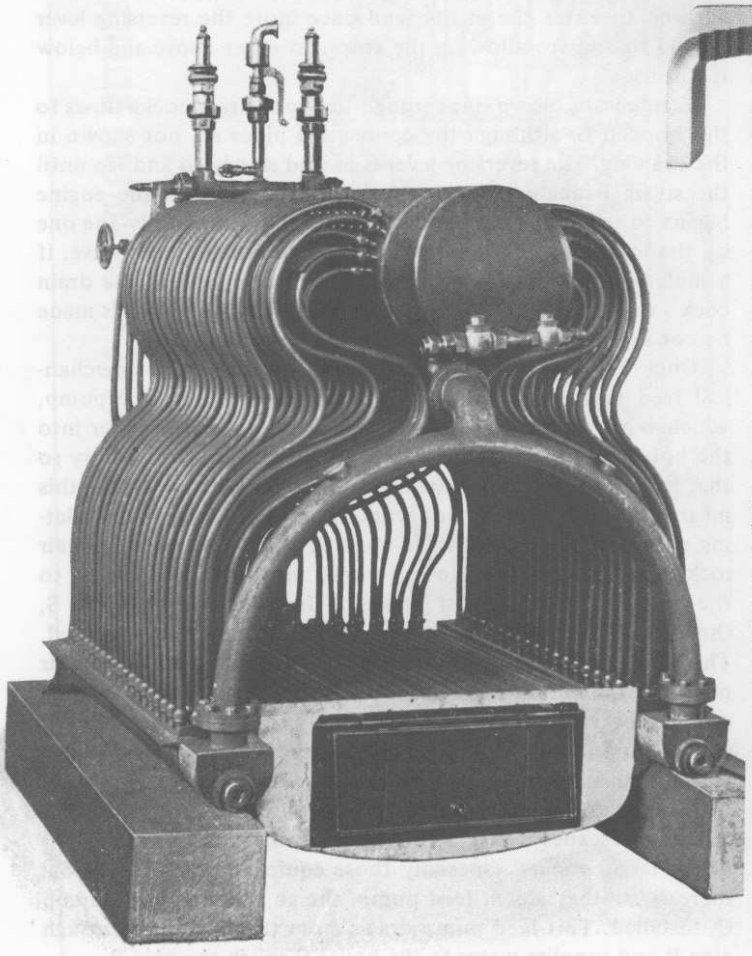
The plant and all associated equipment is made with the greatest of care, all bearing journals are generously constructed, hardened and precision ground, the pistons have bronze rings and the cylinders are not lubricated so that the feed water is not contaminated with oil. The engine is fitted with piston valves and their glands are subjected only to receiver pressure since inside admission is used for high pressure steam. Thanks to the robust construction and ample, carefully fitted bearings and the excellent material we have produced a motor which is extremely robust in use, almost indestructible. All the parts are easily exchanged, with replaceable bearings so that maintenance cost is minimised. Such cheap maintenance in other small engines would normally result in the engine becoming unusable after a single season.

In the illustration the motor and all auxiliaries and pipework look a little complicated and bulky but in practice, of course, the plant occupies a far smaller space and the pipework appears simpler.

Finally we should point out that for this power plant no skilled hand or engineer is necessary, either a young sailor or a complete novice can steer the boat and operate the engine at the same time. We should also point out that the boiler is explosion proof because it is constructed from many thin walled copper pipes and is not vulnerable to neglect or inattention.

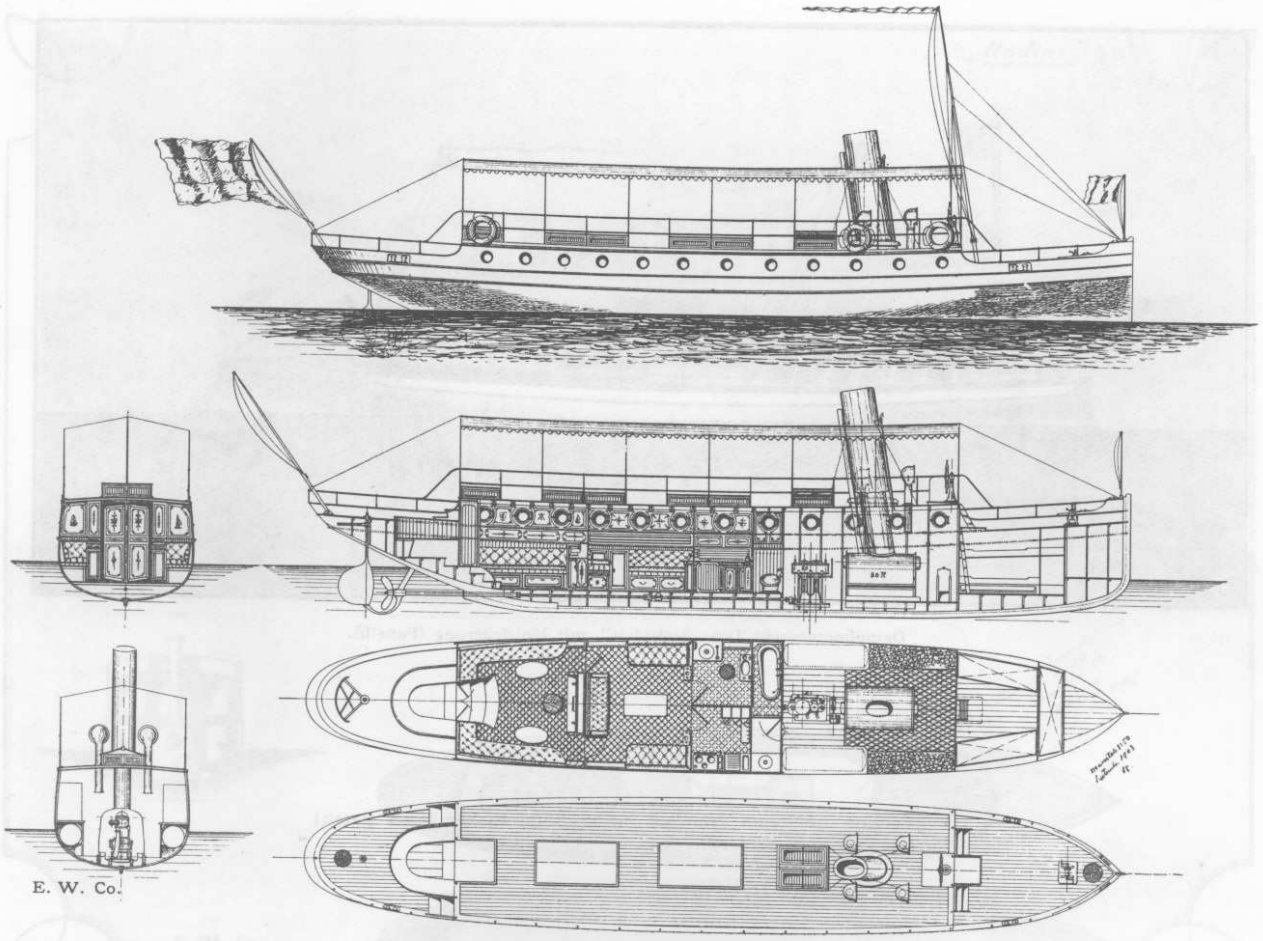


Patent screw connections shown in section. Belled tubes ends are tightened on to conical nipples. To the right can be seen the blanking plug which can be fitted in the event of tube failure.



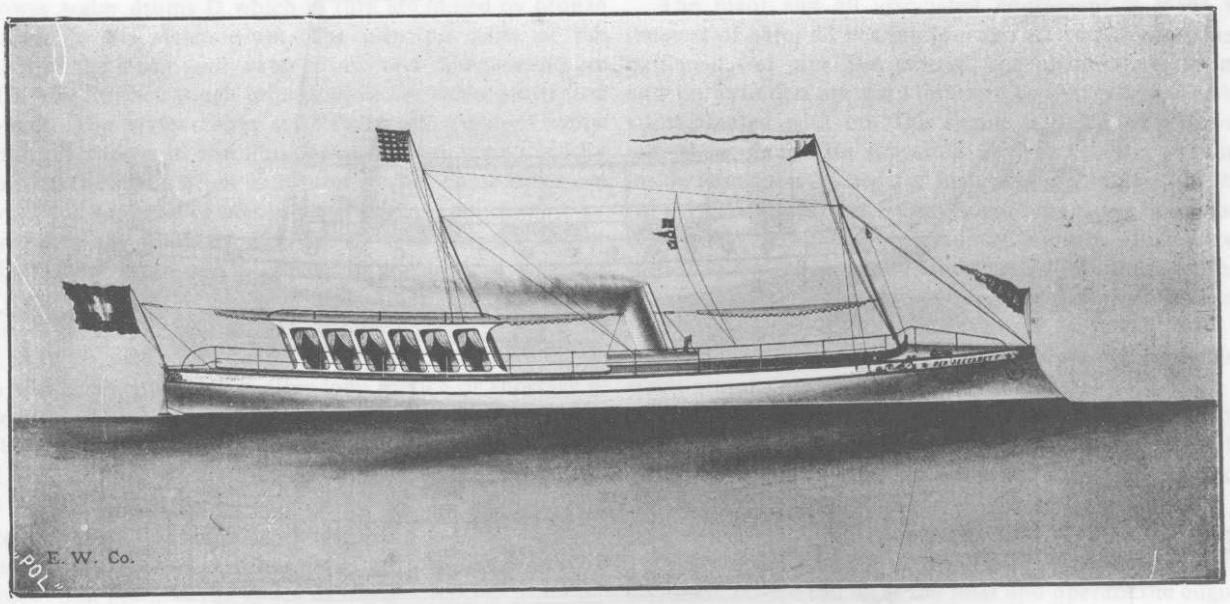
35 h.p. boiler equipped with grate for wood firing.

If the feed pump should fail the water level in the feed tank will drop and the hotwell will overflow. This will be clearly apparent to the operator. Should this be overlooked and the plant continues in operation for a long time without the air release valve of the feed pump being opened, and the water level of the boiler becomes low, the worse thing that can happen is that some of the replaceable water tubes will be ruptured and the resulting rush of steam will put out the fire. Therefore our Pioneer steam water system is totally safe as is shown by our experience. This can be proven by inspecting boats at present in use.



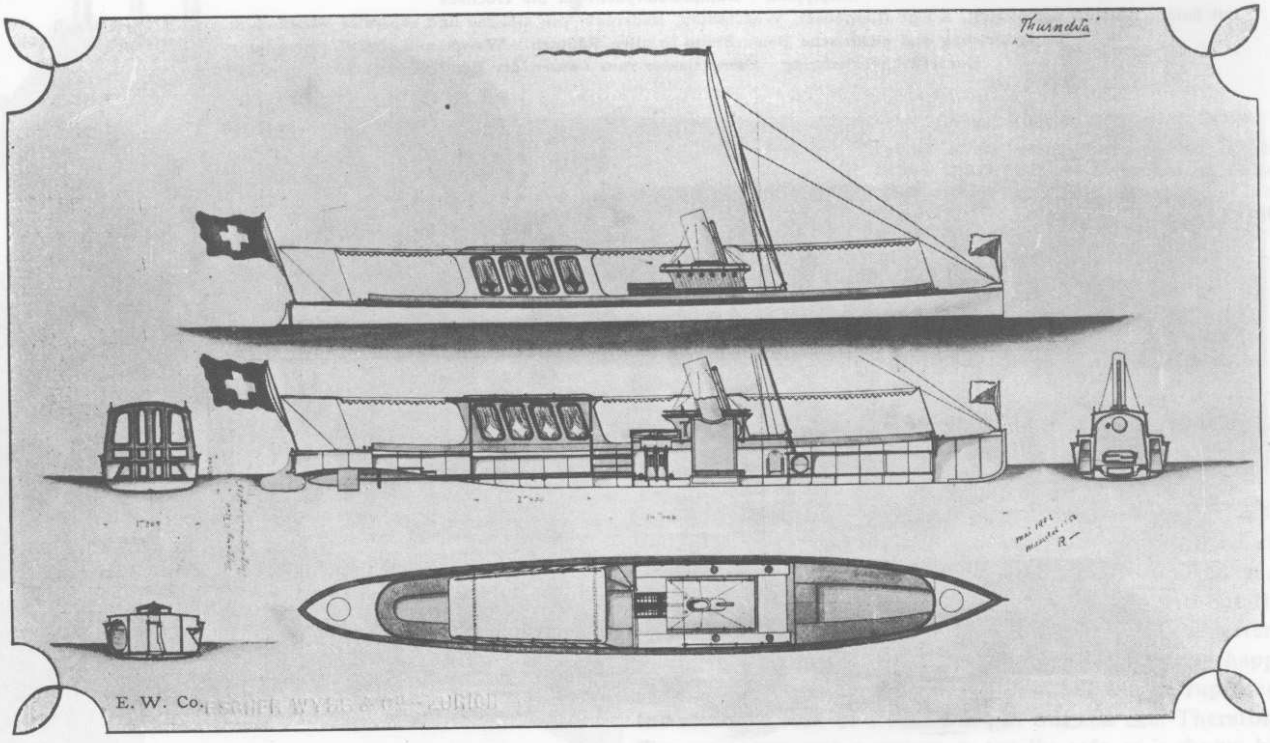
„Apippina", Dampfmotoryacht für die Hochsee
mit Salon, Klavier, Schlafraum, Küche (Cambüse), Waschraum, Baderaum mit Douche und separater Waschraum für die Mannschaft.
Dampfheizung und elektrische Beleuchtung in allen Räumen. Warm- und Kalt-Wasserleitung.
Dampfkochvorrichtung. Dampfejektor zum Lenzen der Boote, Dampfsyrene.

„Lili", schnellgehende Motoryacht mit Salon, Küche, Wasch- und Toilettenraum.

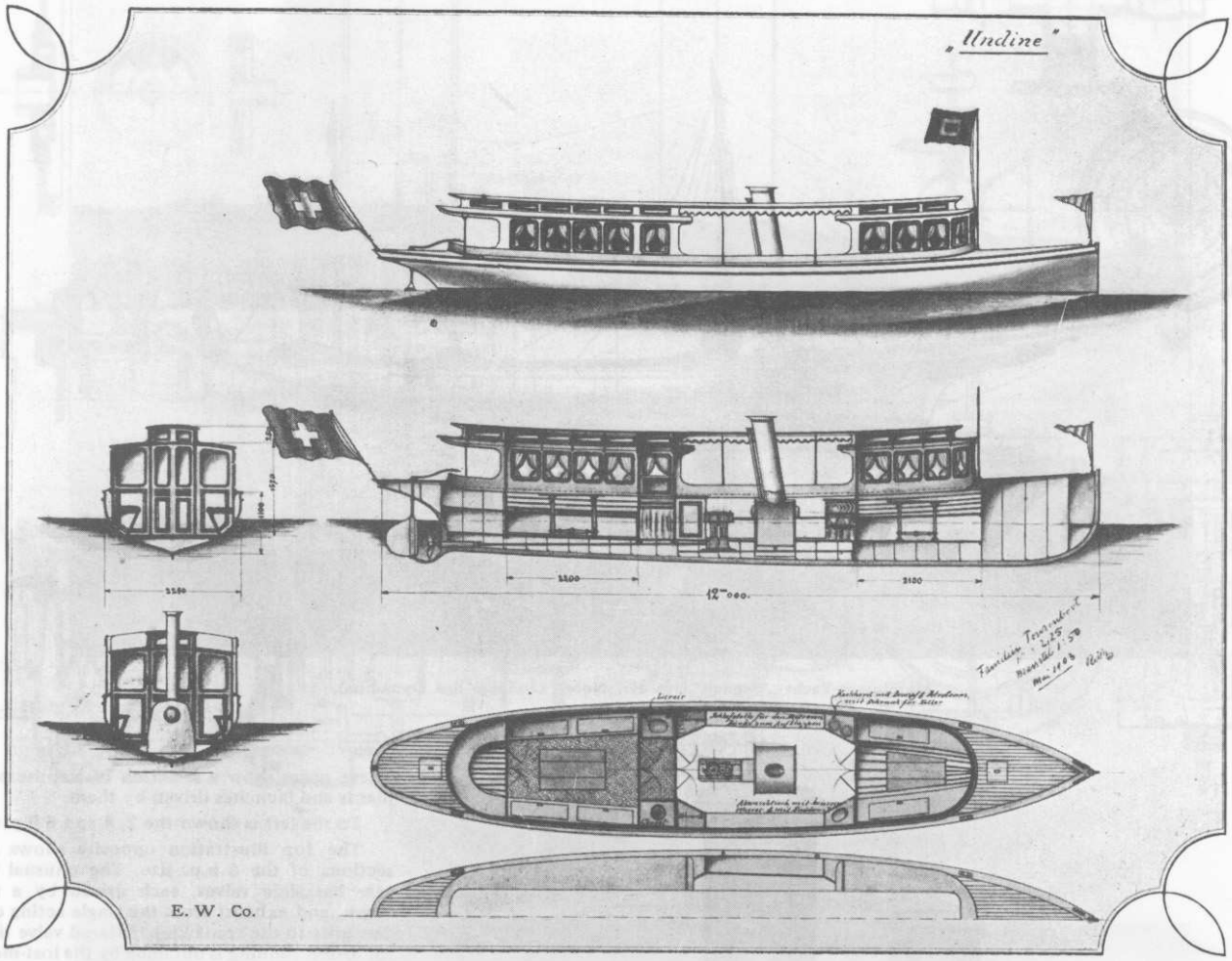


Dampfmotoryacht Typ „Seekadett", mit Holzfeuerung (Panelli).

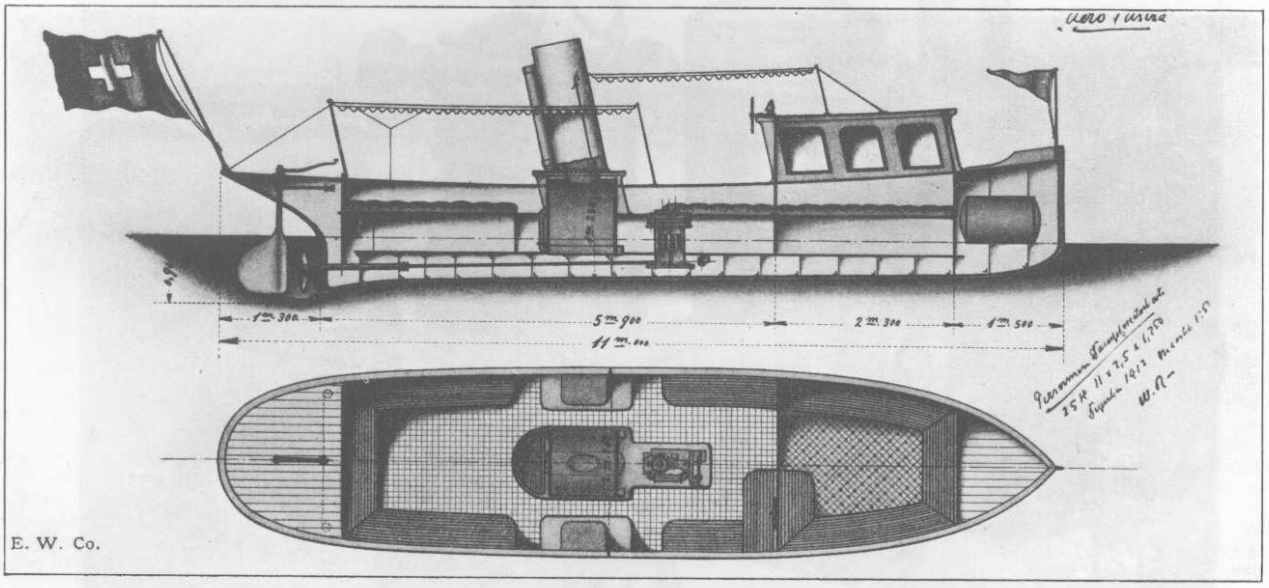
A selection of steam launches fitted with Escher Wyss patent 'Pioneer' steam machinery.



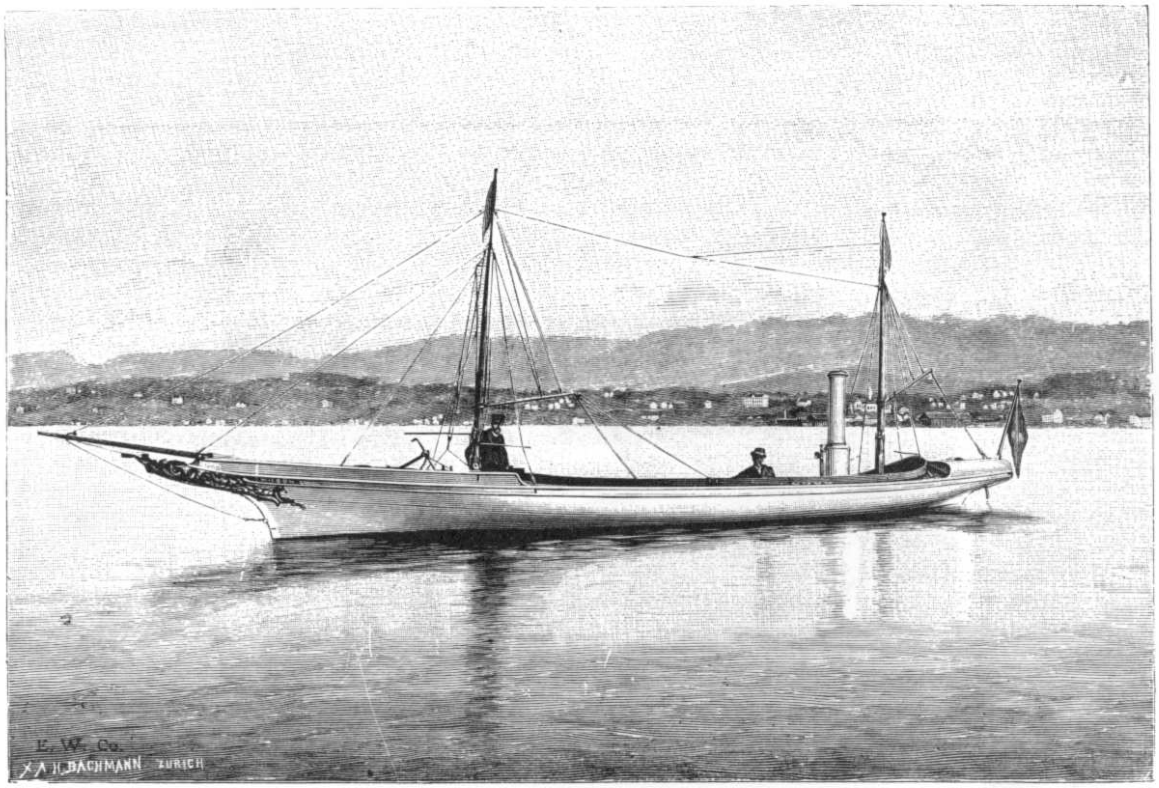
„THUSNELDA", Fluss-Dampfmotorboot mit geringem Tiefgang und Turbinenpropeller in galvanisiertem Stahl, Tiefgang 33 cm, Geschwindigkeit 24 km = 13 Knoten. Dampfheizung in der Kabine.



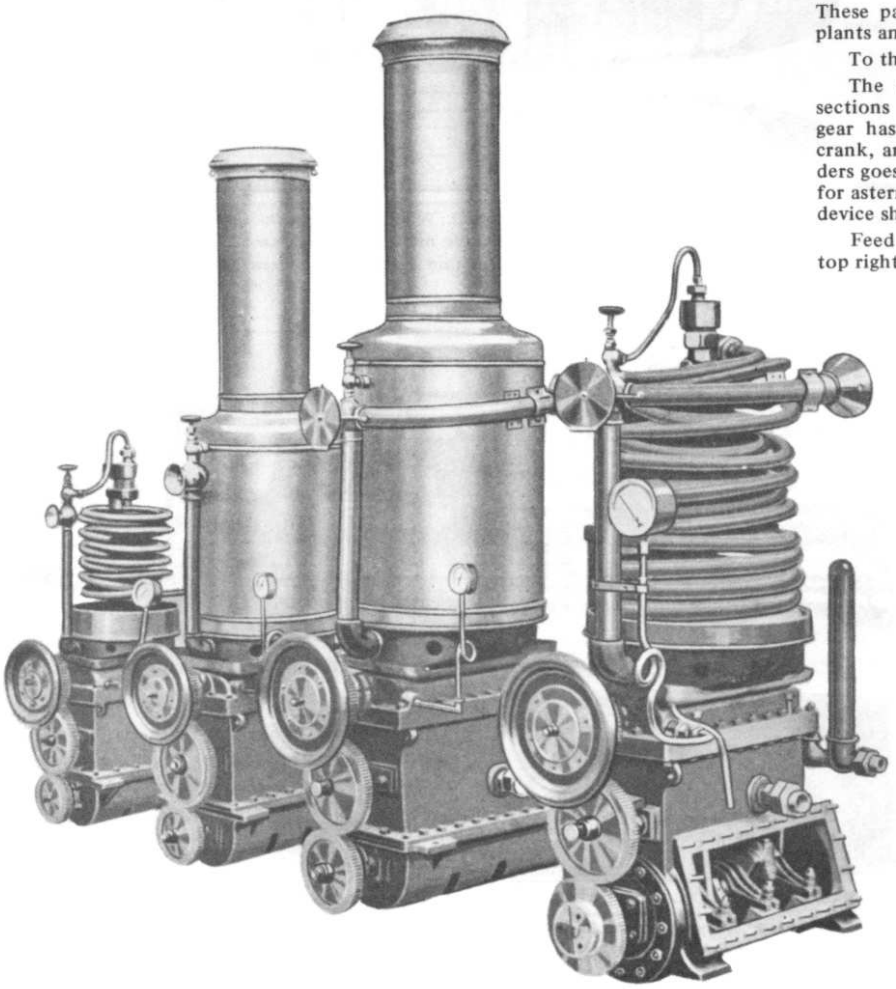
„Undine" Dampfmotorboot (Familienboot) für längere Reisen mit Küche (Combüse), Waschraum, Rauch- und Schlafsalon mit Oberlicht. Dampfkochapparat, Dampfheizung der Kabine, Abwaschvorrichtung mit heissem Wasser, Eisschrank. Schlafstellen für die Mannschaft und elektrische Beleuchtung. Dampfejektor zum Lenzen des Bootes.



Typ. „Astra" Personen-Dampfmotorboot für 25-30 Sitzplätze. Dampfheizung in der Cabine. Dampf-Ejektor zum Lenzen des Bootes. Dampfsyrene.



Aluminium-Yacht „Mignon" des Hr. Nobel (Erfinder des Dynamits).

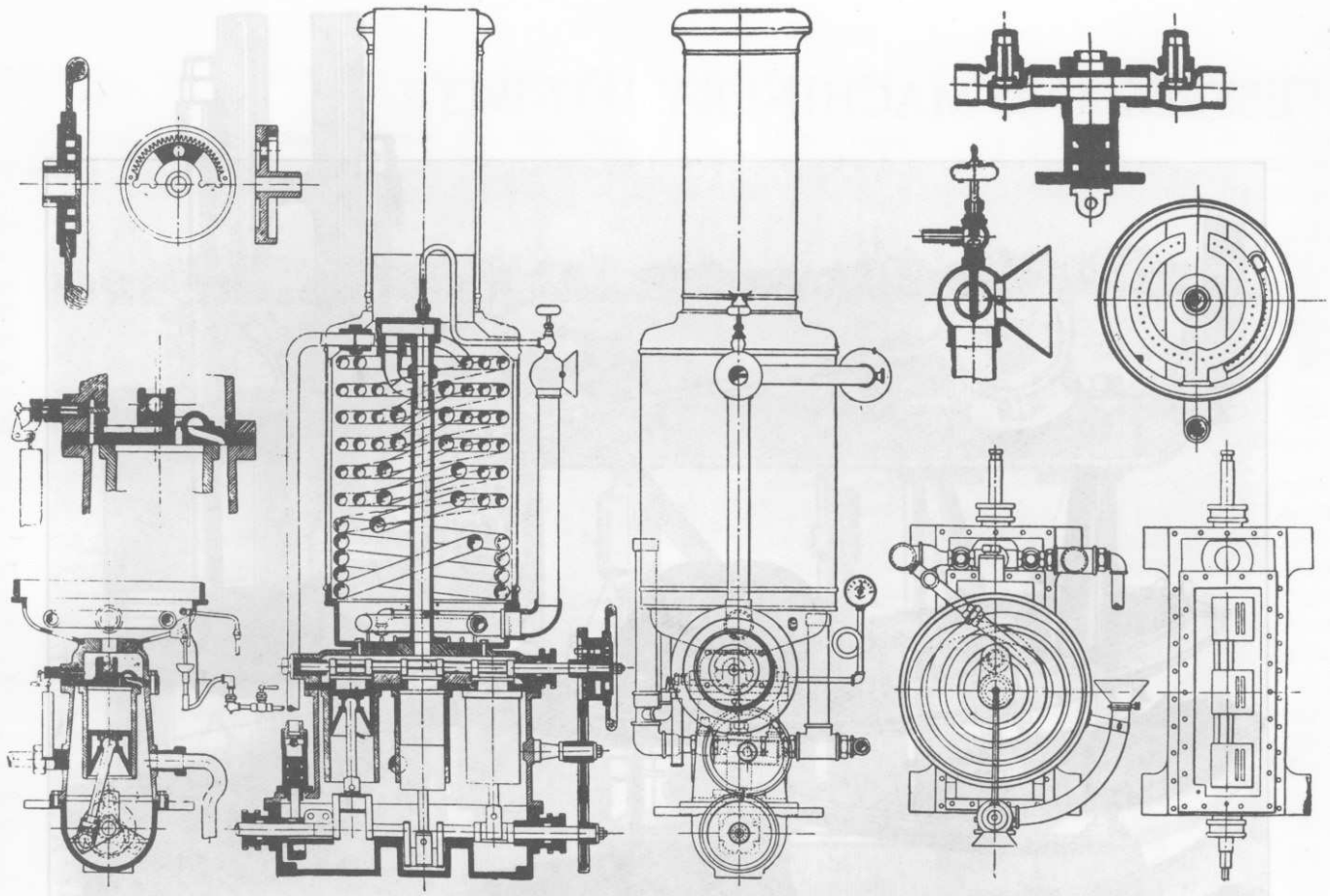


These pages show a selection of Naptha power plants and launches driven by them.

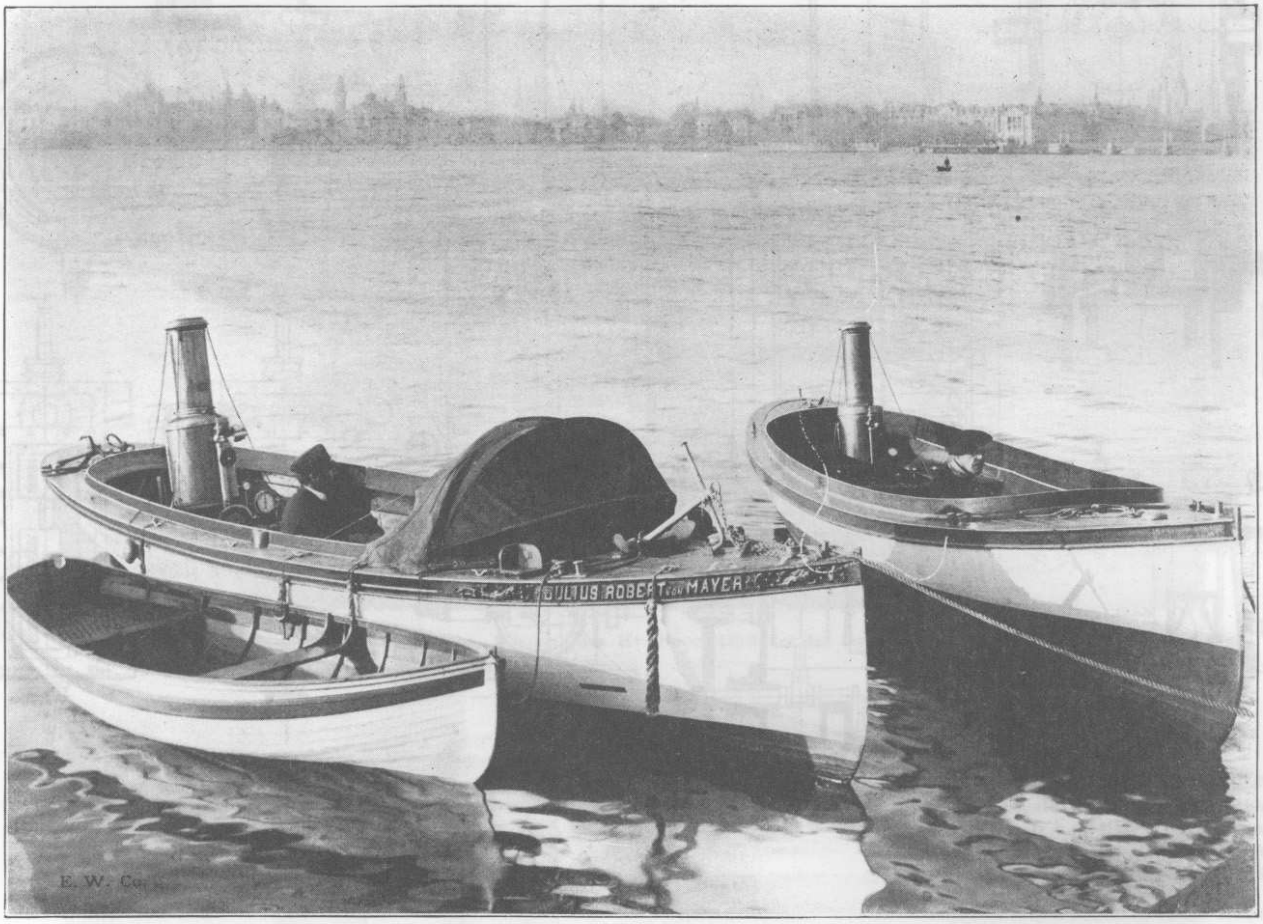
To the left is shown the 2, 4 and 6 h.p. sizes.

The top illustration opposite shows cross sections of the 6 h.p. size. The unusual valve gear has slide valves, each driven by a small crank, and exhaust from the single acting cylinders goes to the crank case. Altered valve timing for astern running is obtained by the lost-motion device shown top left.

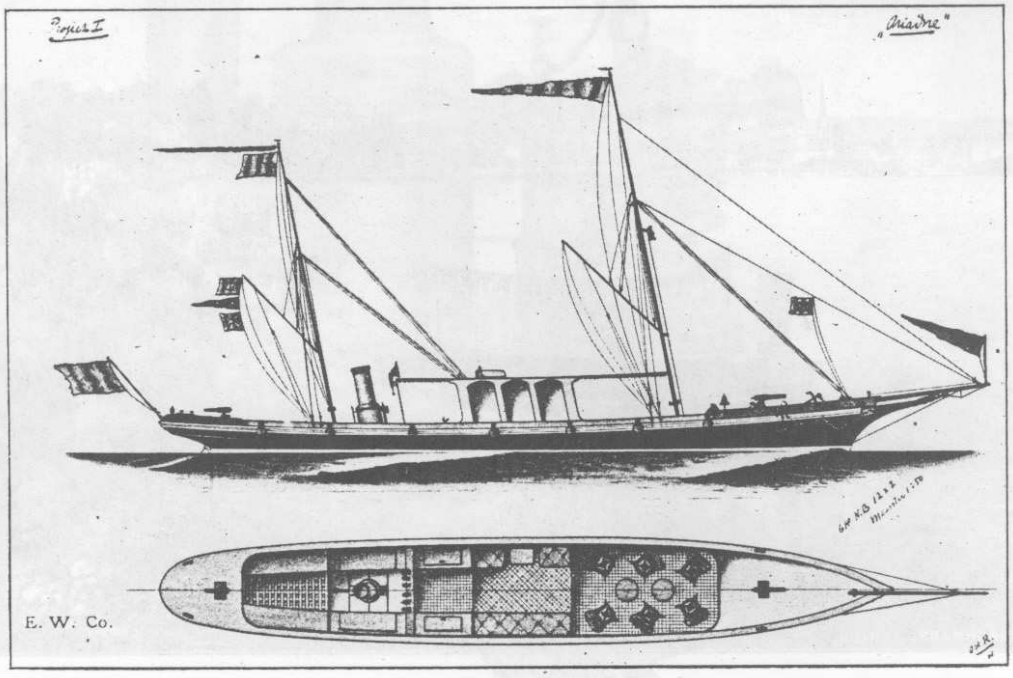
Feed pump and burner details can be seen at top right.



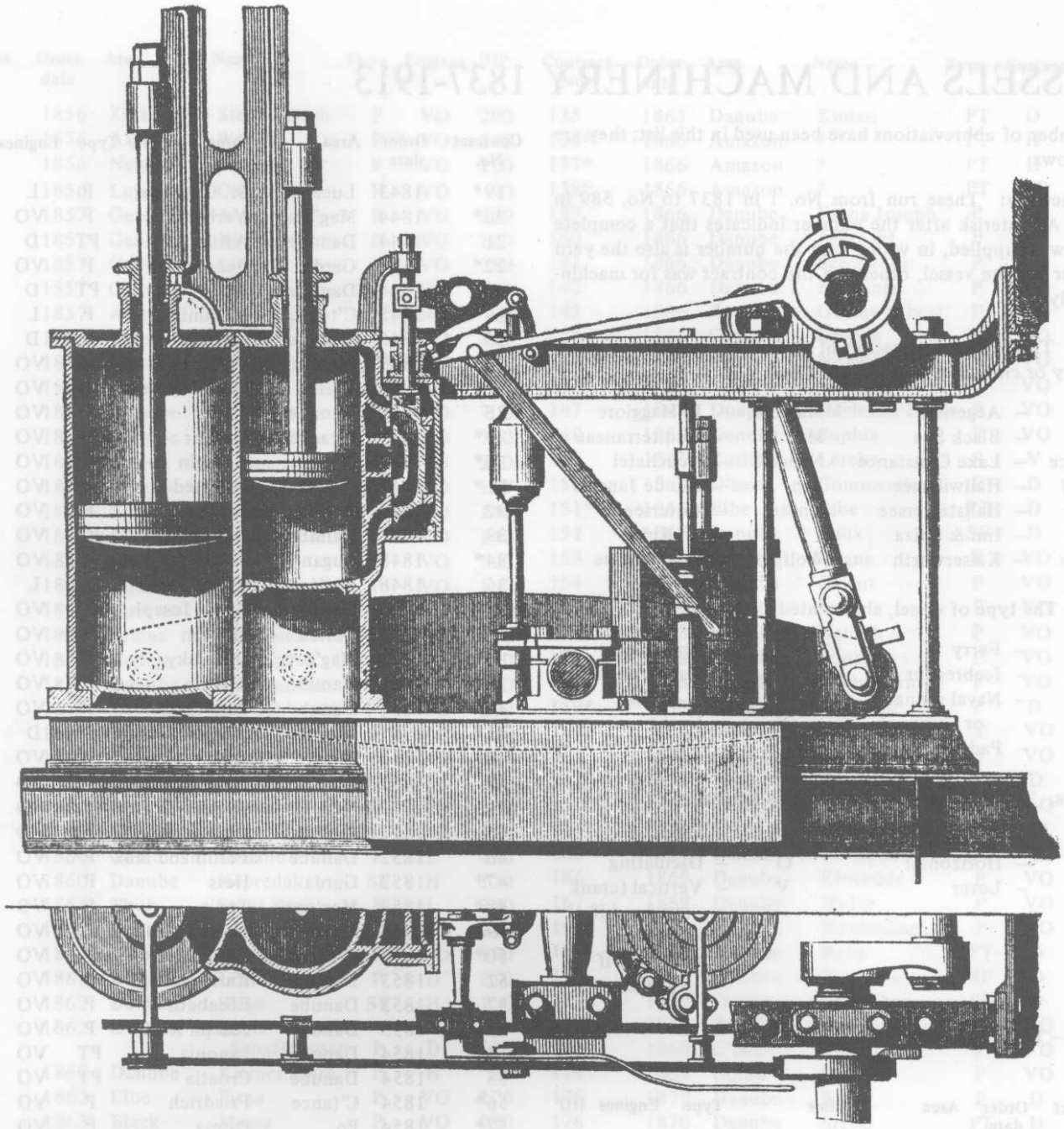
Erstes Naphtamotorboot „Sarcelle", in Betrieb gesetzt am 26. Februar 1888.



4 und 6 HP Naphtaboot mit Kutschenschlag, eine Yolle. (Der Kutschenschlag ist abnehmbar und kann nach hinten verlängert werden.)



„Ariadne" Naphta-Motoryacht mit Salonaufbau.



ENGINE NO. 98

The illustration represents a longitudinal section and half plan of a single beam-engine, with compound cylinder, for a small towing boat on the Lake of Geneva in Switzerland. The boat is 90 ft. long by 13 ft. beam, and draws 3 ft. of water, including the keel, her displacement at that draught being 40 tons, and midship section 27½ square feet. The nominal power of the engine is 25-horses. The two cylinders are cast in one piece, the distribution of the steam being effected by one slide-valve common to both cylinders. The diameter of the smaller cylinder, into which the steam is first admitted, is 15 in., and the length of its stroke 23 in. The diameter of the larger cylinder is 20 in. by 3 ft. stroke. The beams are of wrought-iron of unequal length between the centre and ends, so that, while the larger cylinder has 3 ft. stroke, the length of the crank is only 1 ft. By this means, the centre of the shaft is kept lower, while the length of connecting-rod remains four times the length of crank; and the diameter of the wheel is so proportioned that, when the boat is towing at a speed of seven to eight miles per hour, the piston of the larger cylinder has a speed of 210 ft. per minute. The boiler is of the usual tubular description, with half-round steam-chest, and the pressure to which it is loaded is 60 lb. per square inch. The wheels are with feathering floats, 10 ft. 6 in. diameter, with 12 floats 6 ft. 6 in. by 1 ft. 6 in., the upper edge of float being 3 in. immersed when light. The number of strokes, when the boat is light, is 42 per minute, and when towing an iron barge 100 ft. long by 15 ft. beam, and loaded with 60 to 80 tons, it is 35 per minute, the steamer having generally about 10 tons on board. The consumption of coal is 160 lb. per hour on an average of 20 trips. This gives about 6½ lb. per nominal horse-power per hour, including getting up steam 20 times and stoppages at stations. The coal is French – what is called "agglomere," and is not capable of evaporating more than eight times its weight of water.

This steamer was made by the firm of Escher Wyss and Co., at Zurich, from the designs, and under the direction, of Mr. M. Jackson, their manager.

THE ENGINEER. FEB. 1860

VESSELS AND MACHINERY 1837-1913

A number of abbreviations have been used in this list; they are as follows:

Contract No: These run from No. 1 in 1837 to No. 589 in 1913. An asterisk after the number indicates that a complete vessel was supplied, in which case the number is also the yard number for the vessel, otherwise the contract was for machinery only.

Area: This is the destination of the vessel, either lake, river, country or city, abbreviated as follows:

Aeger	– Aegerisee	Mag'ore	– L. Maggiore
Black	– Black Sea	Med	– Mediterranean
C'stance	– Lake Constance	Neuch'l	– Neuchatel
Hallwil	– Hallwilersee	Rio	– Rio de Janeiro
Hal'ter	– Hallstattersee	Unter	– Untersee & Rhine
Inn	– Inn & Sulza		
Kaisers	– Kaiserwerth	Wolfgan	– Wolfgangsee

Type: The type of vessel, abbreviated as follows:

F	– Ferry	S	– Screw
I	– Icebreaker	T	– Tug or Salvage Vessel
N	– Naval pinnace or Gunboat	Y	– Yacht
P	– Paddle		

Engines: Type of machinery fitted or supplied:

D	– Diagonal	M	– Motor
H	– Horizontal	O	– Oscillating
L	– Lever	V	– Vertical (crank overhead if paddler, Inverted if screw engine)

IHP: – Indicated horsepower.

Contract No.	Order date	Area	Name	Type	Engines	IHP
1*	1837	Zurich	Linth-Escher	P	L	90
2*	1837	Lucerne	Stadt Luzern	P	L	90
3*	1838	Danube	Sophia	P	L	120
4*	1838	Geneva	Leman	P	L	150
5*	1839	C'tance	Concordia	P	L	70
6*	1839	C'tance	Kronprinz	P	L	100
7*	1839	Zurich	Republikaner	P	L	70
8*	1840	C'tance	Leopold	P	L	80
9*	1840	C'tance	Stadt Constanz	P	L	120
10*	1841	C'tance	Helvetia	P	L	70
11*	1841	Mag'ore	San Carlo	P	L	70
12*	1841	Danube	Karl	P	DO	250
13	1842	Danube	Johann	P	DO	250
14*	1842	Danube	Stadt Wien	P	DO	250
15	1842	Danube	Stadt Pesth	P	L	250
16*	1843	Como	Lariano	P	L	100
17*	1843	Thun	Niesen	P	L	80
18	1843	Danube	Hercules	PT	L	500
19*	1843	Lucerne	St. Gotthard	P	L	100
20*	1844	Mag'ore	Verbano	P	VO	80
21	1844	Danube	Attila	PT	D	400
22*	1844	Garda	Benaco	P	VO	100
23	1844	Danube	Bator	PT	D	400
24*	1845	C'tance	Maximilian	P	L	100
25	1845	Danube	Kubeck	PT	D	500
26	1845	Danube	Franz Karl	P	VO	370
27*	1846	Zurich	Gustav Albert	P	VO	80
28	1846	Danube	Nador	P	VO	370
29*	1847	C'tance	Merkur	P	VO	70
30*	1847	C'tance	Konigin	P	VO	80
31*	1847	Med'ian	Languedoc	P	VO	500
32	1847	Zurich	Delphin	P	VO	25
33	1848	Danube	Kolowrat	PT	VO	500
34*	1848	Lugano	Tessin	P	VO	80
35	1848	Wallen	Splugen	P	L	130
36*	1849	Garda	Franz Joseph	P	VO	130
37*	1851	Zurich	Schwan	P	VO	50
38*	1851	Mag'ore	Radetsky	P	VO	300
39	1851	Danube	Austria	P	VO	360
40	1851	Danube	Radetsky	P	VO	360
41*	1851	Mag'ore	Benedek	S	D	60
42*	1852	Zuger	Rigi	P	VO	60
43	1852	Danube	Germania	P	VO	360
44*	1852	Neuch'l	Cygne	P	VO	60
45	1852	Danube	Hildegarde	P	VO	520
46	1852	Danube	Ferdinand Max	P	VO	520
47*	1852	Garda	Hess	P	VO	350
48*	1853	Mag'ore	Taxis	P	VO	160
49*	1853	C'tance	Stadt St.Gallen	P	VO	160
50*	1853	C'tance	Rhein	P	VO	160
51	1853	Danube	Karl Ludwig	P	VO	520
52	1853	Danube	Elisabeth	P	VO	520
53	1853	Danube	Joseph Karl	P	VO	520
54	1854	Danube	Panonia	PT	VO	520
55	1854	Danube	Croatia	PT	VO	520
56*	1854	C'tance	Friedrich	P	VO	160
57*	1854	Po	Parma	P	VO	420
58*	1854	Po	Modena	P	VO	420
59	1854	Danube	Adler	PY	VO	500
60*	1854	Lagunen	Gorzkowsky	P	VO	60
61*	1854	Neuch'l	Jura	P	VO	160
62*	1854	Mag'ore	Lucmagno	P	VO	220
63*	1854	Mag'ore	San Gottardo	P	VO	220
64*	1855	C'tance	Stadt Lindau	P	VO	160
65*	1855	Mag'ore	San Bernardino	P	VO	220
66*	1855	C'tance	Bodan	P	VO	200
67*	1855	C'tance	Thurgau	P	VO	220
68*	1855	C'tance	Zurich	P	VO	220
69	1855	Danube	Fecse Becse	PT	VO	300
70	1855	Danube	Brod	PT	VO	300
71*	1855	Geneva	Hirondelle	P	VO	220
72*	1855	Danube	?	PN	VO	35
73*	1856	C'tance	Friedrichshafen	P	VO	220
74*	1856	Geneva	Rhone I	P	VO	160
75*	1856	Thun	Stadt Thun	P	VO	200

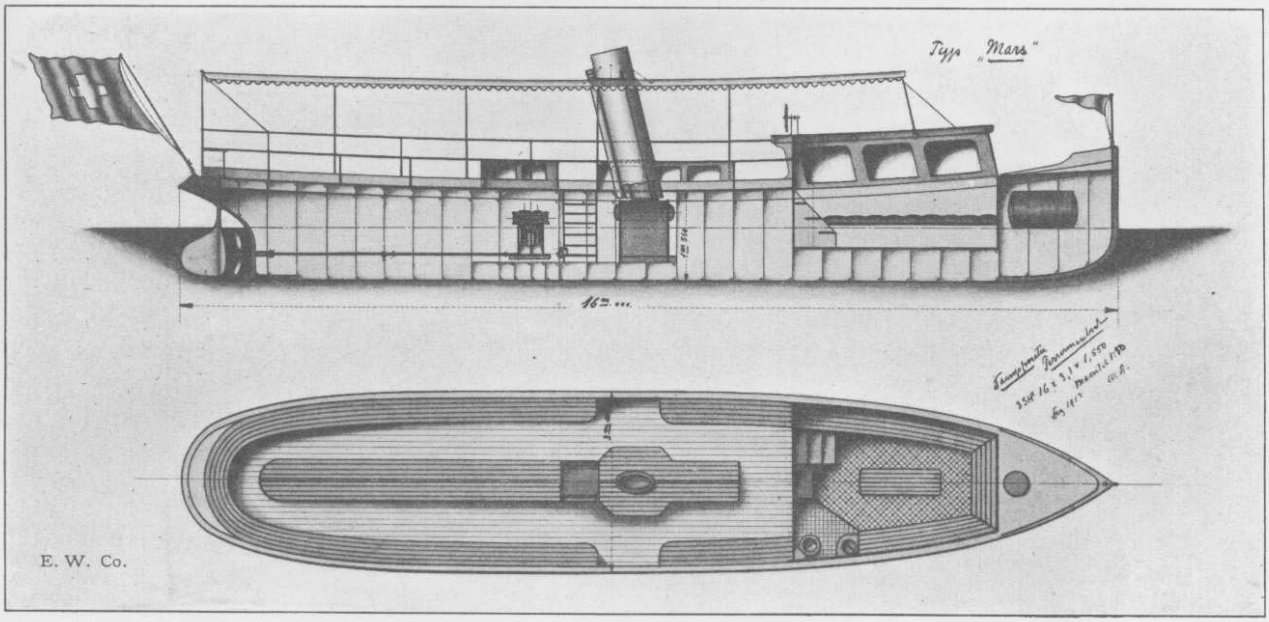
Contract No.	Order date	Area	Name	Type	Engines	IHP
76*	1856	Zurich	Stadt Zurich	P	VO	200
77*	1856	Aare	Wengi	P	VO	140
78*	1856	Neuch'l	Fleche	P	VO	120
79*	1856	Lugano	Ceresio	P	VO	90
80*	1857	Geneva	Aigle	P	VO	220
81*	1857	Geneva	Rhone II	P	VO	160
82*	1857	Geneva	Leman	P	VO	280
83*	1857	Como	Unione	P	VO	160
84*	1857	Aare	Neptun	PT	HO	90
85*	1857	Brienz	Interlaken	P	VO	110
86	1857	Danube	Schlick	PN	VO	350
87	1857	Danube	?	PN	H	50
88	1857	Danube	Eros	PT	VO	700
89	1857	Danube	Achilles	PT	VO	700
90*	1858	Zurich	Rapperswil	P	VO	200
91*	1858	Elbe	Kladno	PT	VO	180
92*	1858	Elbe	Aussig	P	VO	140
93*	1858	Neuch'l	Gaspard Escher	P	VO	140
94*	1858	Como	Forza	P	VO	120
95*	1859	Lucerne	Stadt Basel	P	VO	160
96*	1859	Lucerne	Stadt Mailand	P	VO	160
97*	1859	Brienz	Giessbach	P	VO	160
98*	1859	Geneva	Mercure	P	L	90
99*	1859	Danube	Archimedes	SF	H	90
100	1859	Danube	Leopoldstadt	PT	VO	200
101	1859	Neuch'l	Cygne	P	VO	90
102*	1860	Como	Vittoria	P	VO	90
103	1860	Danube	Anna	PT	VO	200
104	1860	Inn	Rupertus	PF	D	200
105	1860	C'tance	Leopold	P	VO	150
106	1860	Como	Lariano	P	L	150
107	1860	Danube	Napredak	SF	H	120
108*	1861	Thun	Stadt Bern	P	L	210
109	1861	Danube	Alexander	P	VO	110
110	1862	Elbe	Konig Johann	P	VO	150
111*	1862	Zurich	Linth-Escher	P	D	210
112	1862	Danube	Sloga	SF	H	120
113	1862	C'tance	Stadt Schaffhausen	P	D	190
114	1862	Danube	Kleiner Stern	P	H	35
115	1862	Elbe	Pirna	P	VO	120
116	1863	Black	Moses	P	VO	230
117*	1863	Elbe	Propeller I	S	V	55
118*	1863	Lucerne	Brunig	S	V	35
119*	1863	Zurich	Biene	PT	D	90
120*	1863	C'tance	Germania	P	D	190
121*	1864	Lucerne	Winkelried	P	D	210
122*	1864	Zurich	Concordia	P	D	190
123*	1864	Zurich	Schwalbe	S	V	75
124*	1864	Lucerne	Wilhelm Tell	P	D	210
125*	1864	Zuger	Stadt Zug	P	D	110
126	1864	Turkey	Kilidj Baluk	P	VO	90
127*	1864	Zurich	Taube	S	V	75
128*	1864	C'tance	Mainau	P	D	110
129*	1865	Unter	Arenaberg	P	D	110
130*	1865	Zurich	St. Gotthard	P	D	170
131*	1865	Zurich	Lukmanier	P	D	170
132*	1865	Unter	Rheinfall	P	D	110
133	1865	Danube	Karl	PT	D	320
134*	1865	Como	Italia	P	D	230
135	1865	Danube	Kinizsi	PT	D	480
136*	1866	Amazon	?	PT	H	30
137*	1866	Amazon	?	PT	H	30
138*	1866	Amazon	?	PT	VO	8
139	1866	Danube	Franz Joseph	P	VO	600
140	1866	Danube	Albrecht	P	VO	600
141	1866	Danube	Szechenyi	P	VO	600
142	1866	Danube	Rumania	P	VO	400
143	1866	Zurich	Gustav Albert	P	VO	140
144	1866	Como	Unione	P	VO	200
145	1867	Black	Nowoselsky	P	VO	240
146	1867	Danube	Hungaria	P	VO	400
147	1867	Dnepr	(Meletin) Dawn	P	VO	60
148	1867	Danube	Sophia	P	VO	640
149	1867	Zurich	Lerche	S	V	60
150*	1867	D'iseo	Commercio	P	D	100
151*	1867	Elbe	Elbe	PT	D	280
152	1867	Danube	Felix	SF	D	200
153	1868	Neuch'l	Cygne	P	VO	100
154	1868	Danube	Orient	P	VO	65
155	1868	Danube	Luise	P	VO	65
156	1868	Danube	Nelisch	P	VO	80
157	1868	Danube	Sophia	P	VO	120
158	1868	Zurich	Stadt Zurich	P	VO	220
159*	1868	Geneva	Bonivard	P	D	400
160	1868	Mag'ore	Lucmagno	P	VO	260
161	1868	Mag'ore	Bernardino	P	VO	260
162*	1868	Rhine	Rhenus V	PT	D	600
163*	1869	C'tance	?	PF	DO	800
164*	1869	C'tance	Ludwig	P	D	320
165	1869	Danube	Torontal	PT	D	520
166	1869	Danube	Klothilde	P	VO	120
167	1869	Danube	Nador	P	VO	120
168	1869	C'tance	Maximilian	P	VO	180
169	1869	Danube	Raba	PT	D	520
170	1869	Danube	Pancsova	SF	D	200
171	1869	Danube	Columbus	SF	D	200
172	1869	Zurich	Rapperswil	P	VO	220
173	1869	C'tance	Thurgau	P	VO	320
174	1869	Como	Forza	P	VO	140
175	1870	Danube	Wien	P	D	240
176	1870	Danube	Sreko	PT	D	360
177	1870	Danube	Linz	PT	D	360
178	1870	Elbe	Hansa	PT	D	290
179	1870	Rhine	Mercator	SF	D	120
180	1870	Atter	Attersee	P	VO	120
181*	1870	Lucerne	Helvetia	P	VO	280
182*	1870	C'tance	Eberhard	P	VO	280
183*	1870	Geneva	Winkelried	P	VO	560
184-7	1870	Bieler	(4 Engines)	SF	V	50
188	1870	C'tance	Zurich	P	VO	320
189	1870	C'tance	Friedrichshafen	P	VO	260
190	1870	Mag'ore	Ticino	P	VO	180
191	1870	Danube	?	P	VO	120
192	1870	Lucerne	Stadt Basel	P	VO	180
193	1870	Lucerne	Stadt Mailand	P	VO	180
194*	1871	Rhine	Hohenklingen	P	VO	200
195	1871	Danube	Sophia	P	VO	120
196*	1871	Elbe	Kaiser Wilhelm	PT	D	280
197*	1871	Brienz	Brienz	P	D	280

Contract No.	Order date	Area	Name	Type	Engines	IHP
198	1871	Danube	Scholler	PT	D	450
199*	1871	Thun	Beatus	P	VO	320
200*	1871	Lugano	Generoso	P	VO	80
201	1871	Danube	Pscholka	P	DO	80
202*	1871	Rhine	Bato I	PT	D	400
203*	1871	C'tance	Kaiser Wilhelm	P	D	400
204	1871	Black	Vertrauen	SF	V	270
205	1871	C'tance	Konig Karl	P	VO	220
206	1871	Thun	Stadt Thun	P	VO	220
207	1871	Brienz	Giessbach	P	VO	180
208	1871	C'tance	Rhein	P	VO	200
209	1871	C'tance	Stadt Lindau	P	VO	180
210	1872	C'tance	Friedrich	P	VO	200
211	1872	Elbe	Bismarck	PT	D	280
212	1872	Atter	Weissenbach	P	D	120
213*	1872	Como	Volta	P	VO	360
214*	1872	Wurmsee	Ludwig	P	VO	120
215*	1872	Lucerne	Germania	P	D	440
216*	1872	Lucerne	Italia	P	D	440
217	1872	Danube	Sud Nr. 3	PT	DO	100
218	1872	Danube	West Nr. 4	PT	DO	100
219	1872	Geneva	Helvetie	P	VO	400
220*	1872	Amazon	?	PT	H	8
221*	1872	Rio	?	PT	H	8
222	1872	Danube	Lastozka	PT	VO	100
223*	1872	Rhine	Taunus	PT	D	520
224*	1872	Rhine	Tauer I	SI	H	420
225*	1873	Rhine	Tauer II	SI	H	350
226*	1873	Rhine	Coln I	PT	D	640
227*	1873	Rhine	Coln II	PT	D	640
228	1873	Turkey	?	P	VO	180
229	1873	Elbe	Germania	P	VO	240
230	1873	C'tance	St. Gallen	P	VO	180
231*	1873	Como	Elvezia	P	D	440
232*	1873	Como	Lombardia	P	D	440
233	1873	Danube	Industire	P	D	125
234*	1873	Zuger	Nixe	SY	V	20
235*	1873	Como	Lariano	P	VO	360
236*	1873	Thun	Trajektschiff I	SF	V	60
237	1874	Elbe	Konig Albert	PT	D	200
238	1874	Elbe	Konig Johann	P	VO	160
239	1874	Rhine	Math. Stinnes III	PT	D	800
240	1874	C'tance	Bodan	P	VO	240
241	1874	Geneva	Aigle	P	VO	320
242*	1874	Brazil	?	PT	DO	100
243*	1874	Brazil	?	P	HO	25
244-55	1874	London	(12 Engines)	S	V	8
256*	1874	Thun	Bubenberg	P	VO	320
257*	1874	Como	Como	P	D	280
258*	1874	Como	Lecco	P	D	280
259*	1874	C'tance	?	PF	DO	600
260	1874	Danube	Melissa	ST	V	80
261	1874	Como	Vittoria	P	VO	100
262	1874	Geneva	Rhone	P	VO	200
263*	1875	Geneva	Mont Blanc	P	D	480
264*	1875	Zurich	Helvetia	P	D	480
265*	1875	Geneva	Cygne	P	VO	120
266*	1875	Geneva	Mouette	P	VO	120
267	1875	Danube	Dnieper	PT	D	280
268*	1875	Zurich	Omnibus	S	V	8
269	1875	Geneva	Leman	P	VO	340
270*	1875	Geneva	Caprice	SY	V	50
271	1875	Brienz	Interlaken	P	VO	120
272*	1875	Lugano	Lampo	S	V	30
273-84	1875	London	(12 Engines)	S	V	8
285-9*	1876	Neuch'l	(5 tugs)	ST	V	40
290	1876	C'tance	Wilhelm	P	VO	200
291	1876	Geneva	Guillaume Tell	P	VO	160
292*	1876	Zuger	Helvetia	P	D	240
293	1877	Danube	Foscolo	PF	D	200
294*	1877	Elbe	Deutschland	PT	D	220
295	1877	Geneva	Chillon	P	VO	200
296*	1877	Amazon	?	S	V	12
297*	1878	C'tance	Christoph	P	D	360
298*	1878	Wurmsee	Bavaria	P	D	240
299*	1878	Como	Bellagio	S	V	50
300*	1878	Ammer	Marie	P	VO	65
301*	1878	Geneva	Jura	P	VO	200
302*	1878	Geneva	Simplon	P	VO	200
303*	1879	C'tance	Wittelsbach	P	D	400
304	1879	Dnepr	Agrafena	PT	D	280
305	1879	Dnepr	Bug	PT	D	240
306	1879	Rhine	Merwede I	P	D	440
307	1879	Dnepr	Docska	PT	D	280
308*	1879	Amazon	?	P	DO	100
309	1879	Danube	Mon Repos	PT	D	280
310	1879	Danube	Mon Plaisir	PT	D	280
311*	1879	Amazon	?	SF	V	30
312	1879	Danube	Kelet	PT	DO	100
313	1880	Dnepr	Telegraph	P	VO	120
314	1880	Dnepr	Rusalka	P	D	280
315*	1880	Brazil	?	PT	DO	120
316	1880	Dnepr	Skory	P	D	550
317-8*	1880	Amazon	?	SF	V	8
319-20*	1880	Amazon	?	SF	V	16
321*	1880	Amazon	?	SF	V	30
322	1881	Dnepr	Adler	P	VO	180
323	1881	Danube	Domenul Brailei	S	V	60
324	1881	Don	Jermac	PT	D	200
325	1881	Don	Baklanow	PT	D	200
326*	1881	Neuch'l	Yverdon	P	VO	200
327	1881	Rhine	Victoria	P	VO	420
328	1881	Thun	Stadt Bern	P	D	250
329	1881	Rhine	Mannheim II	PT	D	550
330	1881	Rhine	Graf Moltke	P	D	450
331	1881	Rhine	Math Stinnes	ST	V	280
332	1881	Elbe	Paula	PT	D	200
333	1881	Elbe	Henriette	PT	D	200
334	1881	Lucerne	Schwan	S	V	60
335	1881	Danube	Erszi	PT	DO	160
336*	1882	Geneva	Dauphin	P	VO	250
337	1882	Dnestr	Bruder	PT	D	280
338	1882	Dnestr	Schwester	PT	D	280
339*	1882	Brazil	?	PT	DO	160
340	1882	Rhine	Baum	ST	V	320
341*	1882	Geneva	Rapide	S	?	?
342-3*	1882	Amazon	?	ST	V	8
344*	1882	Amazon	?	ST	V	16

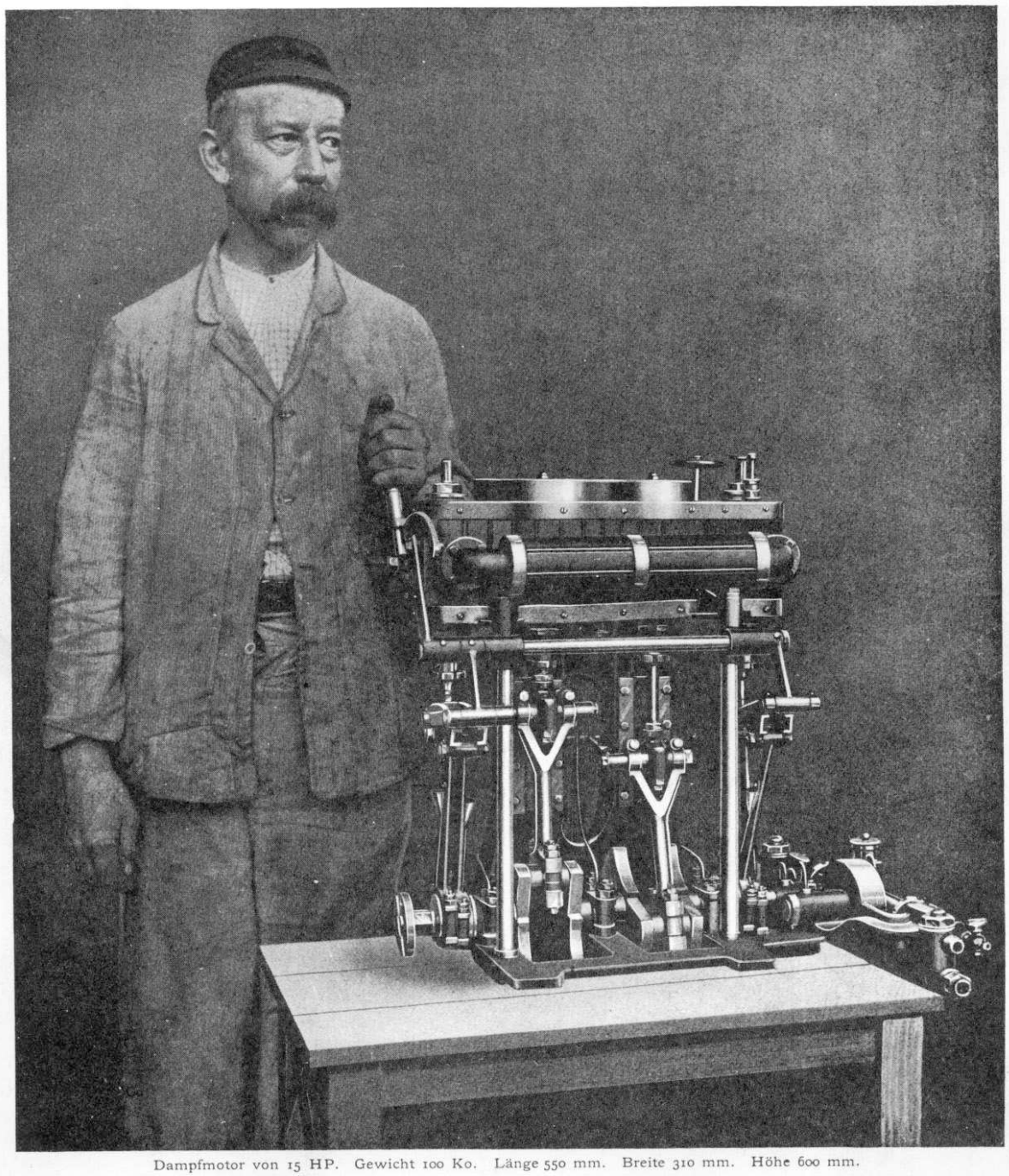
Contract No.	Order date	Area	Name	Type	Engines	IHP
345*	1882	Amazon	?	ST	V	50
346*	1882	Amazon	?	ST	V	65
347	1882	Rhine	Mannheim III	PT	D	650
348	1882	Rhine	Bismarck	P	D	460
349*	1882	Amazon	?	ST	V	40
350	1882	Rhine	Mannheim I	PT	D	650
351	1882	Danube	Deggendorf	PT	D	500
352	1883	Rhine	Colonia III	ST	V	380
353	1883	Danube	Olga	PT	D	220
354	1883	Worther	Neptun	S	V	60
355	1883	Black	Sophie	P	D	240
356*	1883	Geneva	St. Frusquin	SY	V	250
357-8*	1883	Amazon	?	ST	V	10
359-60*	1883	Amazon	?	ST	V	20
361	1883	Mosel	?	P	D	260
362	1883	Rhine	Mannheim VI	PT	D	1200
363	1883	Rhine	Ruhrort IV	ST	V	550
364*	1883	Lugano	Le Caprino	SY	V	20
365	1883	Danube	Eszak	S	V	60
366	1884	Rhine	Hohenstaufen	P	D	400
367*	1884	Brazil	Visconde de Ytu	PT	DO	140
368*	1884	Brazil	Bruhns	PT	DO	140
369	1884	Rhine	Niederrhein V	ST	V	500
370-1*	1884	Amazon	?	ST	V	20
372-4*	1884	Amazon	?	ST	V	10
375-6*	1884	Amazon	?	SF	V	35
377	1884	C'tance	Habsburg	P	D	400
378	1884	C'tance	Austria	P	D	400
379*	1885	C'tance	Kais. Franz Jos. I	P	D	500
380	1885	Rhine	Ruhrort VIII	PT	D	950
381	1885	Rhine	Stinnes IV	ST	V	500
382	1885	Danube	Carolus I	S	V	160
383	1885	Hal'ter	Kronprinz	S	V	40
384*	1885	Zurich	?	SF	V	110
385	1885	C'stance	Bregenz	S	V	160
386	1885	Rhine	Hansa	P	D	550
387	1885	Rhine	Niederwald	P	D	550
388*	1885	Geneva	Maria-Theresa	SY	V	100
389*	1886	Geneva	France	P	D	550
390	1886	Danube	BAC I	SF	V	180
391	1886	Danube	BAC II	SF	V	180
392	1886	Lugano	Lampo	S	V	35
393	1886	Neuch'l	Gaspard Escher	P	VO	180
394*	1886	Lucerne	Stadt Luzern	P	D	700
395*	1886	Thun	B.B. II	SF	V	110
396*	1886	C'tance	Helvetia	P	D	500
397	1886	C'tance	Kaiserin Elisabeth	P	D	500
398*	1886	Annecy	Mont Blanc	P	VO	150
399*	1887	Bieler	Union	S	VO	35
400	1887	Rhine	Rhein	P	D	550
401	1887	Neuch'l	Jura	P	VO	170
402	1887	Rhine	Chr.Muessmach	P	D	200
403	1887	Rhine	Drachenfels	P	D	550
404*	1887	Garda	Garda	ST	V	140
405*	1887	Garda	Benaco	P	VO	180
406	1887	Garda	Agostino Depretis	P	D	350
407	1887	Mag'ore	Italia	P	D	400
408	1887	Rhine	Colonia IV	PT	D	650
409	1887	Rhine	Mulheim A. Rhein	PT	D	200
410	1888	Geneva	Ville de Geneve	P	VO	280
411	1888	Rhine	Badenia I	ST	V	350
412	1888	Rhine	Badenia II	ST	V	350
413	1888	Rhine	Badenia III	ST	V	350
414	1888	Mondsee	Stephanie	P	VO	65
415*	1888	Thun	Helvetia	P	VO	400
416	1888	Danube	Alexandra	PT	D	350
417*	1888	Zurich	Move	ST	V	40
418*	1888	C'tance	Konig Karl	P	D	550
419	1888	Achen	Benedikt	S	V	80
420	1889	Hallwil	Hallwyl	S	V	35
421	1889	Rhine	Frauenlob	PT	D	700
422*	1889	D'Iseo	Nettuno	S	V	80
423*	1889	Bieler	J.J.Rousseau	S	V	40
424*	1889	Lugano	Generoso	P	D	140
425	1889	Mag'ore	Elvezia	P	D	500
426	1889	Rhine	Lohengrin	P	D	700
427	1889	Rhine	Overstolz	P	D	700
428*	1889	Geneva	Vesta	SY	V	110
429*	1889	Lucerne	?	SF	V	110
430	1889	Rhine	Rheinland	PT	D	140
431	1890	Rhine	Speyer II	ST	V	100
432*	1890	Aeger	Morgarten	S	V	12
433	1890	Danube	Vindobona	PT	D	270
434	1890	Rhine	Badenia IV	ST	V	350
435	1890	Danube	Sophia	PT	D	350
436	1890	Rhine	Furst Bismark	P	D	200
437*	1890	Zurich	Riesbach	S	V	35
438*	1890	Zurich	Enge	S	V	35
439*	1890	Como	Plinio	P	D	450
440	1890	Danube	Petru Rares	PT	D	550
441	1890	Danube	Severin	PT	D	550
442*	1890	C'tance	Santis	P	D	400
443	1891	Rhine	Adler	S	V	200
444	1891	Rhine	Greif	S	V	200
445	1891	Black	Lowky	P	D	400
446	1891	Lucerne	Germania	P	D	650
447	1891	Lucerne	Italia	P	D	650
448	1891	Rhine	Arnold Walpod	P	D	550
449	1891	Zurich	Zurich	S	V	35
450	1891	Zurich	Wollishofen	S	V	35
451	1891	Zurich	Zollikon	S	V	35
452	1891	Geneva	Major Davel	P	D	550
453	1891	Como	Olmo	SY	V	120
454	1891	Zurich	Thalwil	S	V	65
455	1891	Zurich	Goldbach	S	V	65
456	1891	Zurich	Kusnacht	S	V	65
457	1891	Zurich	Bendlikon	S	V	65
458	1891	Wolfgan	Schafberg	S	V	100
459	1891	Worther	Helios	S	V	100
460	1891	Kaisers	Prinz Heinrich	P	D	220
461	1891	Black	Alexandra	P	D	300
462	1892	Geneva	Aigle	P	VO	450
463	1892	Danube	Haza	PT	D	650
464	1892	Danube	Vezer	ST	V	280
465	1892	Danube	Basarab	PT	D	550

Contract No.	Order date	Area	Name	Type	Engines	IHP
466	1892	Danube	Gherdap	PT	D	250
467	1892	Geneva	La Suisse	P	D	750
468	1892	Geneva	Helvetie	P	VO	500
469	1892	Danube	Thommen	PT	D	600
470*	1892	Zurich	Gambrinus	ST	V	35
471	1893	Ruhr	Mulheim Rhedereil	PT	D	600
472	1893	Lucerne	Rigi	P	VO	130
473	1893	Rhine	Undine	P	D	550
474	1893	Rhine	Elsa	P	D	750
475	1893	Rhine	Graf Moltke	PT	D	200
476*	1893	Rhine	Georg Sinner	ST	V	350
477*	1893	Geneva	La Dranse	SY	V	300
478	1893	Geneva	Leman	P	D	450
479*	1894	Danube	Principele Carol	P	D	950
480*	1894	Danube	Konig Alex I	PT	D	550
481	1894	Danube	Serbia	PT	D	300
482*	1894	Zurich	Wadenswil	S	V	250
483	1895	Rhine	Coln I	PT	D	850
484	1895	Geneva	Ville de Vevey	S	V	200
485*	1895	Greifen	Greif	S	V	8
486*	1895	Zurich	(barge)	–	–	–
487*	1896	Rhine	Stachelhaus & B. II	PT	D	700
488*	1896	Rhine	Mellinghof & T. II	PT	D	700
489*	1896	Zurich	Albis	S	V	150
490*	1896	Zurich	Speer	S	D	150
491	1897	Rhine	Kaiserin Friedrich	P	D	650
492	1897	Danube	Munchen	PT	D	500
493*	1897	Brienz	Jungfrau	P	D	450
494*	1897	Obersee	Obersee	S	V	30
495*	1897	C'tance	Turgovia	SY	V	100
496	1898	Danube	Dunarea	ST	V	280
497	1898	Danube	Takobo	PT	D	450
498	1898	Danube	Czar Nicolai II	P	D	450
499	1898	Rhine	Raab Karcher I	PT	D	850
500	1898	Rhine	Raab Karcher II	PT	D	850
501*	1898	Lugano	Gottardo	P	D	200
502	1898	Lugano	Ceresio	P	VO	130
503*	1898	Zurich	(barge)	–	–	–
504	1898	Danube	Swjati Sergi	PT	D	550
505	1898	Rhine	Borussia	P	D	1300
506*	1899	Rhine	Schroers V	ST	V	700
507*	1899	Zurich	(barge)	–	–	–
508*	1899	Zurich	Ufenau	S	V	90
509	1899	Brienz	Giessbach	P	VO	250
510	1899	Danube	Vasile Lupu	S	V	400
511	1899	Danube	Domnul Todor	S	V	400
512	1899	Danube	Calarasi	S	V	200
513	1899	Danube	Giurgiu	S	V	175
514*	1900	Annecy	Ville D'Annecy	P	D	200
515	1900	Lucerne	Helvetia	P	VO	300
516*	1900	Lucerne	Unterwalden	P	D	700
517	1900	Rhine	Raab Karcher III	PT	D	850
518	1900	Rhine	Winschermann 7	PT	D	700
519*	1900	Po	Generale Mattei	PT	D	200
520	1900	Danube	Krum	Y	VO	380
521*	1901	Brienz	Merkur	S	M	25
522*	1901	Po	Milano	PT	D	200
523	1901	Po	Mantova	ST	V	160
524-9*	1901	Po	(6 barges)	–	–	–
530	1902	Danube	Draga	SY	V	100
531	1902	Rhine	Rhurort VI	PT	D	850
532*	1902	Garda	Zawardelli	P	D	400
533*	1902	Como	Commercio	S	V	175
534*	1903	Langen	Francia	P	D	400
535*	1903	Rhine	Joh.Kessler	PT	D	850
536*	1903	Rhine	Mannheim VIII	ST	D	800
537	1903	Danube	Cetatea	PT	D	130
538*	1904	Langen	Regina Madre	P	D	400
539*	1904	C'tance	St. Gallen	P	D	600
540	1904	Neuch'l	Hallwyl	P	D	150
541*	1904	Rhine	Sperber	ST	V	250
542*	1904	Zuger	Rigi	S	V	160
543*	1904	Lagunen	Marghera	S	V	100
544*	1904	Lagunen	S. Secondo	S	V	100
545*	1905	Lugano	Ticino	P	D	200
546*	1905	Rhine	Eleonore	PT	D	1200
547*	1905	Thun	Blumlisalp	P	D	600
548	1905	Rhine	Grossh.Friedr.	PT	D	700
549*	1905	Lugano	?	S	M	12
550*	1905	C'tance	Rhein	P	D	600
551	1905	Danube	Deutschland	PT	D	800
552	1906	Rhine	Mannheim V	PT	D	850
553	1906	Brienz	Brienz	P	D	300
554*	1906	Como	Bisbino	S	V	250
555*	1906	Como	Baradello	S	V	250
556*	1906	Lugano	Italia	P	D	300
557	1907	Lucerne	Stadt Basel	P	VO	250
558	1907	Lucerne	Stadt Mailand	P	VO	250
559*	1907	Geneva	La Dranse	SY	V	500
560*	1907	Mag'ore	Novara	S	V	90
561*	1907	Mag'ore	Como	S	V	90
562*	1907	Rhine	H.Paul Disch IV	PT	D	1000
563*	1908	C'tance	Friedrichshafen	P	D	600
564*	1908	Annecy	France	P	D	300
565*	1908	Zurich	Stadt Zurich	P	D	500
566*	1908	D'Iseo	Citta di Bergamo	P	D	200
567	1909	Como	Argegno	ST	V	25
568*	1910	Zurich	Lutzelau	S	V	90
569-73*	1910	Turkey	No. 6 to No.10	S	V	150
574*	1910	D'Arno	(pontoon)	–	–	–
575	1911	Danube	Serbia	P	D	650
576*	1911	C'tance	Hohentwiel	P	D	600
577*	1911	Thun	?	S	M	20
578*	1911	Neuch'l	Neuchatel	P	D	350
579*	1911	Neuch'l	Fribourg	P	D	350
580*	1911	Rhone	France	PT	D	1000
581*	1911	Rhone	Provence	PT	D	1000
582*	1911	Rhone	Lorraine	PT	D	1000
583*	1911	Lucerne	?	P	D	800
584*	1912	Bieler	Berna	P	VO	280
585*	1912	Rhine	Stachelhaus & B. III	PT	D	1200
586*	1912	Zurich	Stadt Rapperswil	P	D	500
587	1912	Danube	?	ST	V	90
588*	1913	Brienz	Lotschberg	P	D	450
589	1913	Rhone	Ville de Lyon	P	D	500

„Tivano" kleine Dampfmotoryacht (Es ist zu beachten, wie wenig Platz der Dampfmotor einnimmt).



Typ. „Mars" Personen-Dampfmotorboot für 70-80 Sitzplätze, mit Kloset, Wascheinrichtung und Dampfheizung in det Cabine.



Dampfmotor von 15 HP. Gewicht 100 Ko. Länge 550 mm. Breite 310 mm. Höhe 600 mm.

15 i.h.p. Compound Launch Engine built by Escher Wyss & Co. to the designs of the Liquid Fuel Engineering Co. Ltd. Cowes, Isle of Wight.